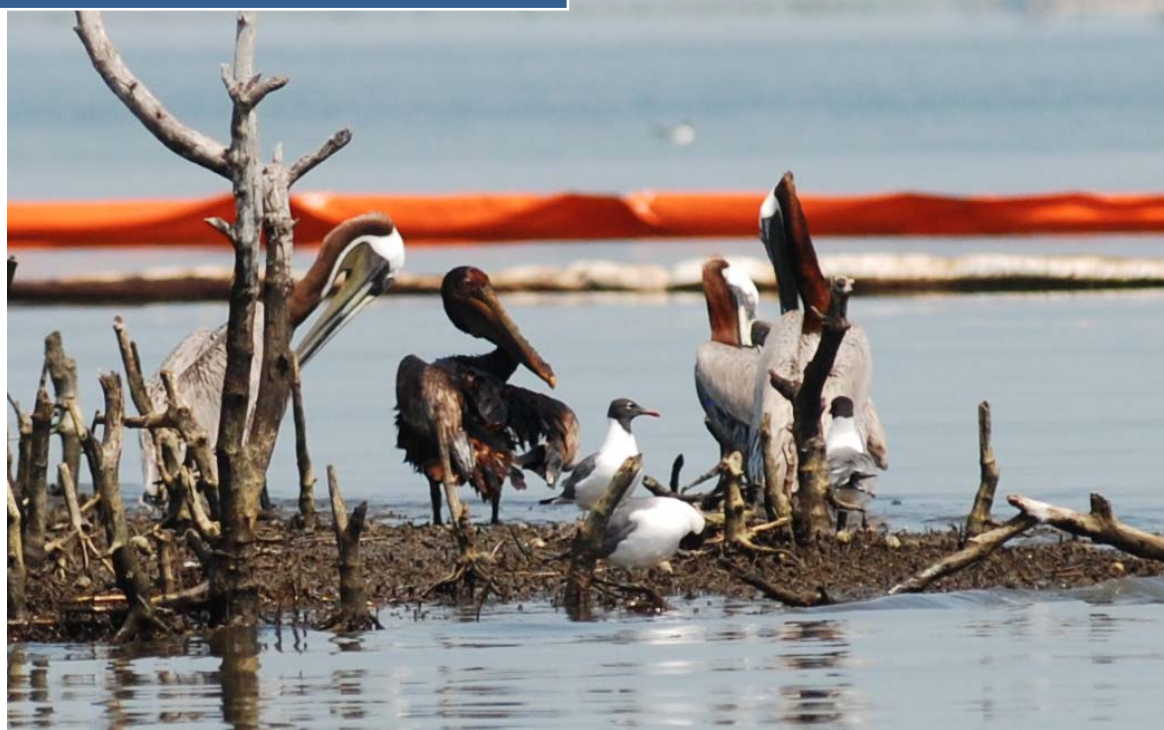


Southeast Louisiana Area Contingency Plan

2016

Southeast Louisiana Area Contingency Plan



U.S. Coast Guard
MSU Morgan City
800 David Drive
Morgan City, LA 70380



16471
15 Jun 2016

MEMORANDUM

From: B. E. Dailey, CAPT
CGD EIGHT (drm)

To: CG MSU Morgan City

Subj: APPROVAL OF 2016 SOUTHEAST LOUISIANA COASTAL ZONE AREA
CONTINGENCY PLAN

Ref: (a) CGD EIGHT New Orleans LA 311313Z Oct 12

1. Congratulations to you and your staff! Your subject plan, as updated, has been reviewed by my staff and determined to be in substantial compliance with reference (a) and all of its references. Please post the approved ACP to Homeport no later than 1 Jul 2016.
2. Please also pass along my thanks to your Area Committee (AC) for the effort that went into this latest update. Continuous improvement, and maintaining the current momentum, will ensure that we are always prepared to effectively respond to oil discharges and hazardous substance releases in the coastal zone. To assist with this momentum, in the course of this ACP review, my staff identified areas that warrant consideration as your AC prioritizes its work, as part of the ACP review cycle in accordance with reference (a); see enclosures (1) and (2).
3. If you have any questions regarding this matter, please contact Ms. Dee Oos at (504) 671-2233 or the CGD 8 (drm) email address: D08-DG-District-DRM@uscg.mil.

#

Enclosures: (1) Area Contingency Plan Review Summary (see D8 SharePoint site)
(2) Area Contingency Plan Review Checklist (see D8 SharePoint site)



16471
12 May 2016

MEMORANDUM

D. G. McClellan
From: D. G. McClellan, CAPT
CG MSU Morgan City

To: Distribution

Subj: PROMULGATION OF THE SOUTHEAST LOUISIANA AREA CONTINGENCY
PLAN

1. This memo promulgates the revised Southeast Louisiana Area Contingency Plan (ACP). This plan is effective immediately and supersedes previous editions of the ACP.
2. The ACP is designed to meet the requirements and intent of the National Oil and Hazardous Substances Pollution Contingency Plan, is aligned with the National Response Framework, and is built around the principles of the National Incident Management System. It is designed to be used in conjunction with national, regional, and state plans. It provides guidance for a coordinated response by local, state, and federal government agencies as well as nongovernment partners to respond to discharges of oil and hazardous substances.
3. This ACP is electronic, enabling users to rapidly access a wide range of supporting documents that are linked to the ACP. For the ACP to provide maximum support, responders and members of the Area Committee, along with other partners, must continuously update and revise the ACP based on lessons learned and/or best practices through exercises and actual responses. Response personnel should make themselves familiar with this plan.
4. This ACP highlights the national importance of the Southeast Louisiana area, both environmentally and economically, and is the culmination of excellent cooperation and teamwork from the members of the Area Committee.
5. If you have any questions, please contact Mr. Brian Black, the Southeast Louisiana ACP Coordinator at (985) 380-5330 or via email at brian.k.black@uscg.mil.

#

Dist: Southeast Louisiana Area Committee Members
CGD EIGHT (dr)
CG LANTAREA (LANT-55)
CG NSFCC
CG GST
COMDT (CG-MER)

Southeast Louisiana Area Contingency Plan

This is the Southeast Louisiana Area Contingency Plan and is written in accordance with the Regional Response Team VI Regional Contingency Plan and the National Contingency Plan. Federal, State, Tribal Parish and Local government representatives as well as representatives from commercial, non-profit, and private concerns continue to drive this planning effort. All Federal, State, Tribal, and Local response organizations that are members of Regional Response Team VI and the Southeast Louisiana Area Committee should use this plan for responses to oil and hazardous materials spills, drill, and exercises.

This plan supersedes all previous editions. The entire document has been reviewed and updated, as appropriate, to reflect up to date information. All chapters contain changes and should be reprinted to ensure users have the most recent version of the Southeast Louisiana Area Contingency Plan.

Geographical Response Plans (GRPs) are currently being developed for many of the coastal and inland waters of the Southeast Louisiana Area Contingency Plan geographical boundaries. The GRPs are considered part of the Southeast Louisiana Area Contingency Plan but may be distributed and revised separately.

The Southeast Louisiana Area Committee encourages active participation by all interested parties in the continuing area contingency planning process. Comments, suggestions, and corrections should be directed to the Southeast Louisiana Area Committee.

The effective date of this plan is February 2, 2013,

Southeast Louisiana Area Contingency Plan

Record of Changes

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Southeast Louisiana Area Contingency Plan

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Southeast Louisiana Area Contingency Plan

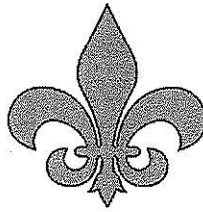
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Southeast Louisiana Area Contingency Plan

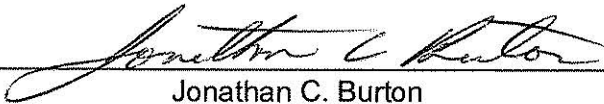
Record of Review

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Southeast Louisiana Area Contingency Plan



Southeast Louisiana Area Contingency Plan SIGNATURE PAGE

A handwritten signature in cursive script, reading "Jonathan C. Burton", positioned above a horizontal line.

Jonathan C. Burton
Captain, US Coast Guard
Captain of the Port, Morgan City
Southeast Louisiana Area Committee Chair

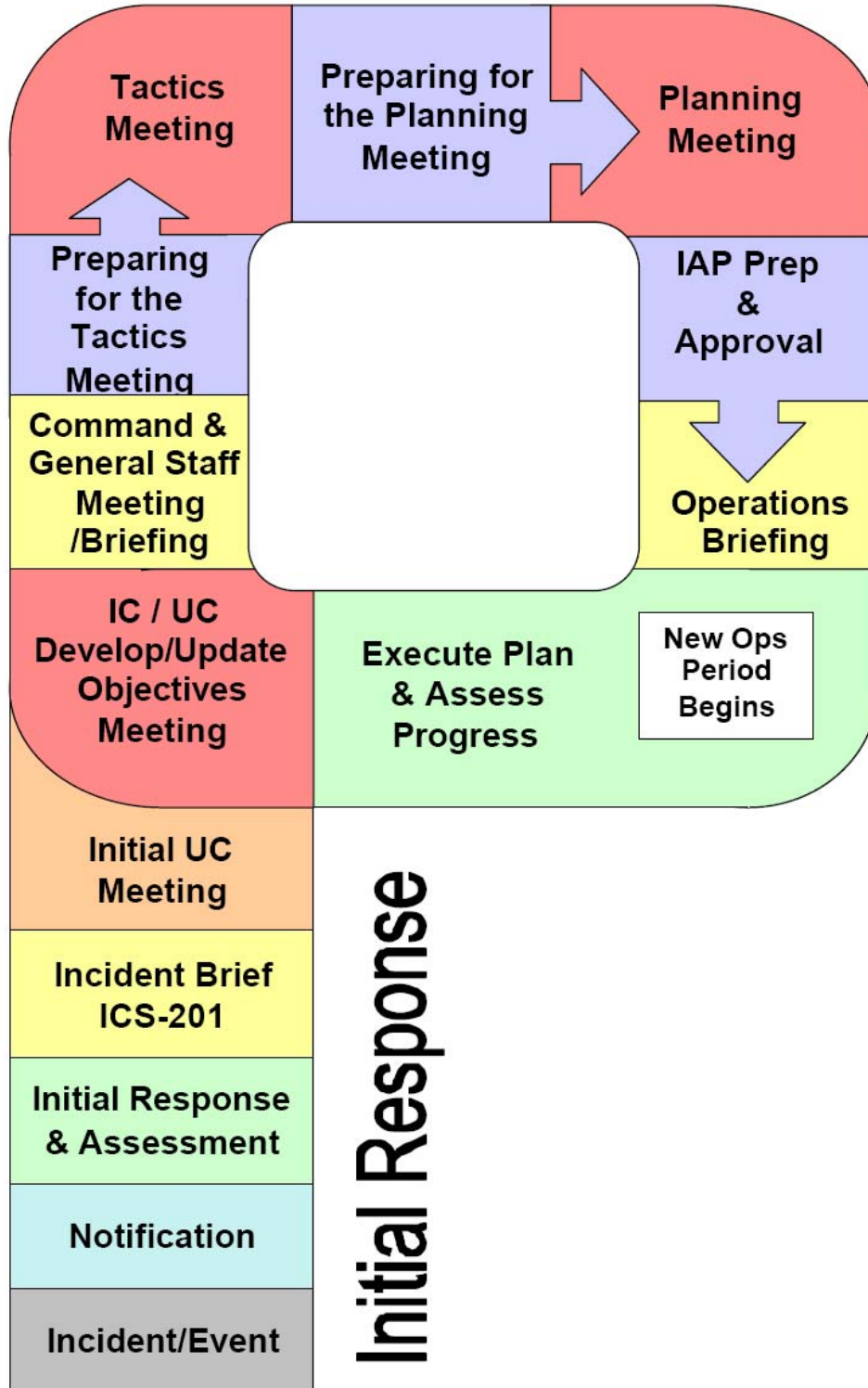
Bryan Wynne
Acting, Louisiana Oil Spill Coordinator
New Orleans Area Committee Co-Chair

Southeast Louisiana Area Contingency Plan

Southeast Louisiana Area Contingency Plan

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Operational Planning “P”



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REQUIRED NOTIFICATIONS

All spills of oil or hazardous substance into navigable waters as defined by the Clean Water Act (CWA) and all spills of a reportable quantity of hazardous substance (40 CFR Part 302) must be immediately reported by the spiller to the National Response Center (NRC). The NRC will contact appropriate local US Coast Guard (USCG) or Environmental Protection Agency (EPA) offices. Notifying state offices does not relieve the spiller from federal requirements to notify the NRC or vice versa.

NATIONAL RESPONSE CENTER (NRC)
1-800-424-8802 Toll Free 24hrs
1-202-267-2675 Toll Call 24hrs

All unauthorized discharges of pollutants into Louisiana State waters must be immediately reported to the Louisiana Emergency Hazardous Materials Hotline.

**LOUISIANA EMERGENCY HAZARDOUS
MATERIALS HOTLINE**
1-877-925-6595 24hrs

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In addition to contacting the NRC, spillers may contact the nearest USCG or EPA office. For spills in the Captain of the Port MSU Morgan City's area of responsibility contact:

**MSU Morgan City
1-985-380-5320**

For spills occurring in the inland zone contact:

**U.S. Environmental Protection Agency
1-866-EPASPILL (372-7745)**

FIRST RESPONDER GUIDELINES

REMAIN UPWIND, UPHILL, OR UPSTREAM OF THE INCIDENT. FROM A SAFE DISTANCE, assess the situation. Use binoculars, if available, to view the scene. Attempt to determine if radiological materials or hazardous substances are present. Observe and note the following:

- Effects on people, animals, and the environment;
- Container types, markings, placards and labels. If available, use the DOT Emergency Response Guidebook for reference;
- Signs of any release or discharges substances and any unusual or pungent odors (move farther away or upwind if you detect an odor and are not positive it is safe);
- Wind direction and prevailing weather;
- Distance and direction of nearby dwellings; and
- Distance and direction of any nearby surface water.

The initial responder shall make all appropriate notifications. The initial responder shall not enter an area where the responder may become a victim, even to rescue another.

Until help arrives, the initial responder should:

- Cordon off the incident area and establish a safety zone. If chemical vapors or flammable/explosive materials are involved, evacuate all persons from the immediate area and remain upwind of the incident area; if sources of radiation or radioactive materials are suspected to be involved, use the principles of time, distance, and shielding to reduce potential exposure;

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- Enter the incident area only if properly trained and equipped with appropriate protective clothing and equipment;
- Render first aid to victims; be sure to notify medical personnel if radiation exposure or contamination is suspected;
- Serve as an on-scene communication point;
- Brief the response team leader or incident commander upon arrival.

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INITIAL ASSESSMENT/INFORMATION CHECK-OFF LIST

The following information should be collected for all spills reported to member agencies:

Date and Time of Call:

Caller Name, Address, & Phone Number:

Name of Person Taking the Report:

VESSEL/FACILITY/SPILLER INFORMATION:

1. Name of Potentially Responsible Party
2. Name of vessel/facility. Railcar/truck number or other identifying information
3. Type and size of vessel/facility
4. Total quantity of fuel on board or in tank
5. Nationality (vessel only)
6. Location of Incident (i.e. street address, lat/long, mile post)

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7. Date and time of incident (or when discovered)
8. Description of spill (i.e. size, color, smell, etc.)
9. Type of incident (i.e. explosion, collision, tank failure, grounding, etc.)
10. Material released/discharged
11. Source of material released/discharged
12. Estimated amount released/discharged
13. Total potential quantity that could be released/discharged (i.e. total quantity in tank or on board)
14. Environmental media impacted or potentially impacted by spill (i.e. air, water, ground/soil)
15. Weather/Sea Conditions
16. Point of contact (i.e. Responsible Party name, phone address)
17. Vessel/facility agent(s) (i.e. name and phone)
18. Name and contact information of insurance carrier

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19. Number and type of injuries or fatalities

20. Description of who is on-scene and what response activities are being done or have been completed.

21. Have evacuations occurred?

22. Other Agencies Notified.

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FIRST FEDERAL OFFICIAL ON-SCENE

The first Federal official affiliated with a National Response Team member agency to arrive at the scene of a discharge/release should coordinate activities under the National Contingency Plan (NCP); and is authorized to initiate, in consultation with the pre-designated Federal On Scene Coordinator (FOSC), and necessary actions normally carried out by the FOSC until the arrival of the pre-designated FOSC, or his/her representative. This official may initiate federal fund-financed actions only as authorized by the pre-designated FOSC.

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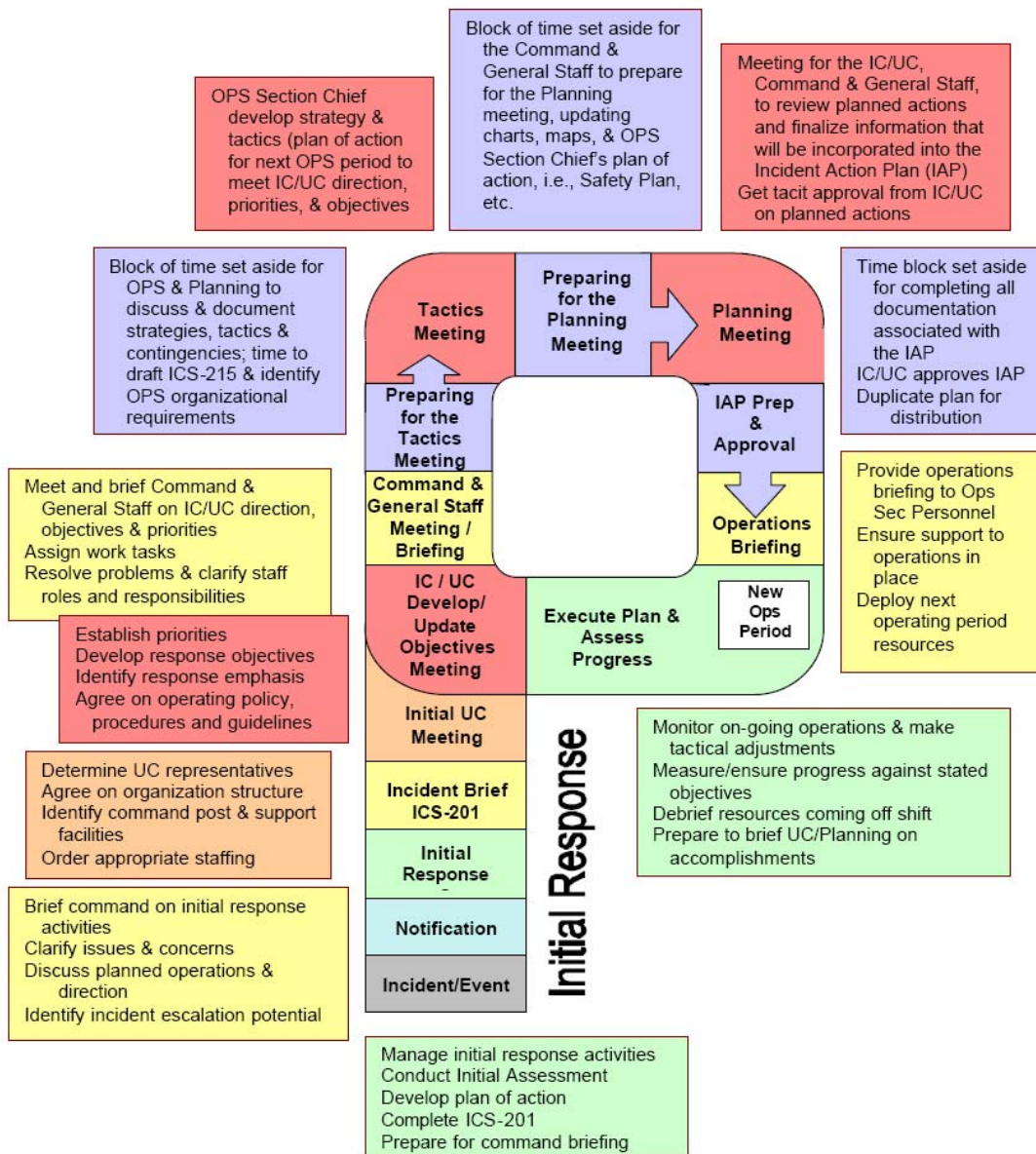
Southeast Louisiana Area Contingency Plan

Chapter 1000
Introduction

Southeast Louisiana Area Contingency Plan

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Operational Planning “P” For General Activities



Southeast Louisiana Area Contingency Plan

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CHAPTER 1000

1000 Introduction

The purpose of the Southeast Louisiana Area Contingency Plan is:

- To provide for orderly and effective implementation of response actions to protect the people, natural resources, and property of the coastal zone covered by this plan from the impacts of an oil discharge, substantial threat of discharge of an oil, a release of hazardous substance, or substantial threat of a release of a hazardous substance, including Weapons of Mass Destruction (WMD), from inland and marine sources.
- To promote the coordination of and describe the strategy for a unified and coordinated federal, state, tribal, local, potential responsible party, response contractor, response cooperative, and community response to an oil discharge, substantial threat of an oil discharge, release of a hazardous substance, or substantial threat of a release of a hazardous substance, including WMD, from inland and marine sources.
- To be consistent with the NCP and to be adopted as the Area Contingency Plan for the Morgan City Federal On-Scene Coordinator's (FOSC) Coastal Zone.
- To provide guidance to all Facility and Vessel Response Plan, and Offshore Oil Spill Response Plan reviewers and Plan holders to ensure consistency with the ACP.
- To be a guidance manual for responders.

This plan is intended for use as a guideline for response actions to spill incidents and to ensure consistency in response to spills. Federal rules require that a Responsible Party (RP), or spiller, must be able to manage spills with a pre-designated response management organization that accommodates a unified command structure in recognition of federal, state, tribal, or local jurisdiction.

Many Southeast Louisiana Area Committee member agencies have specific responsibilities during and following a weapon of mass destruction (WMD) incident or other terrorist act. No one document or plan can serve as a complete response guide for a WMD/terrorist incident.

1010 Scope

This Area Contingency Plan is the chief working document of the Southeast Louisiana Area Committee. It has been developed with the cooperation of all designated Federal and State government agencies.

This plan is applicable to all response actions taken pursuant to the authorities under the Comprehensive Environmental Response Compensation Liability Act (CERCLA) and Section 311 of the Clean Water Act, as amended.

This plan provides an Incident/Unified Command with the strategy, direction, organization, and procedures for responding to oil discharges and releases of hazardous substances, pollutants, and contaminants; outlining the types of assistance available during response actions. The strategies, mechanisms, operations, and procedures contained in this plan are intended to conform to the provisions of the Region VI Regional Contingency Plan (RCP) and the National Contingency Plan (NCP).

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This plan is applicable to and in effect for:

- Discharges/releases, or threat of a discharge/release, of oil and hazardous substances into or on the navigable waters and adjoining shorelines of the United States that lie within the geographical boundaries of the Southeast Louisiana Area Committee's area of responsibility (AOR);
- Releases or threat of release of hazardous substances, pollutants, and/or contaminants into the environment of the coastal zone which may present an imminent and substantial danger to public health or welfare; and
- Additional resources and support requirements above those available in the boundaries/jurisdiction of the Southeast Louisiana Area Committee will be coordinated through the Region VI RCP, and the NCP.

This plan will be used to:

- Identify primary responsibilities and jurisdictions among Federal, State, Tribal, and Local governments in response actions;
- Describe Federal response actions, methods and procedures to coordinate/integrate multi-agency response;
- Describe area response planning concepts and the coordinating mechanisms for conducting joint spill response operations;
- Provide information concerning facilities, resources, equipment, and other capabilities from governmental, commercial, academic, and other sources; and
- Provide information and guidance pertaining to preparedness activities to include planning, training, and exercising.

1020 Assumptions

Releases of hazardous substances and/or discharges of oil will occur within the boundaries of the Southeast Louisiana Area Committee which will require a Unified response action. These response actions will be directed or monitored by a Pre-designated FOSC. The U.S. Department of Energy (DOE) and the U.S. Department of Defense (DOD) will provide the FOSC for hazardous substance releases where the release is on or the sole source of the release is from a DOE or DOD facility.

Upon notification of a spill or threat of a spill, the response procedures, protocols, coordination mechanisms, and information in the ACP necessary to implement a unified response will be used.

This plan is written to be consistent with the Clean Water Act (CWA), Oil Pollution Act of 1990 (OPA90), CERCLA, the Region VI RCP, and the NCP. Any provision of this plan found to be inconsistent with the NCP will no longer be in effect.

1100 Authority

The Federal Water Pollution Control Act (FWPCA) (33 UCS 1321 et seq.) and the Comprehensive Environmental Response Compensation Liability Act (CERCLA or Superfund) address the development of

Southeast Louisiana Area Contingency Plan

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the National Planning and Response System. As part of this system, in conjunction with the NCP, area contingency plans are to address responses to worst-case discharges of oil or releases of hazardous substances, and mitigation or prevention of a substantial threat of discharge/release from a vessel, offshore facility, onshore facility, or pipeline. The Area Committee is given the responsibility for working with the response community to plan for joint response efforts, including spill containment, mechanical recovery, use of dispersants, in-situ burning, shoreline cleanup, protection of sensitive areas, and protection, rescue, and rehabilitation of fish and wildlife.

1110 Federal

Designating areas, appointing area committee members, determining information to be included in, and review of area contingency plans, has been delegated by Executive Order 12777 of 22 October 1991, to the Commandant of the U.S. Coast Guard (USCG), through the Department of Homeland Security, for the Coastal Zone, and to the Administrator of the Environmental Protection Agency (EPA) for the inland zone. The coastal zone and inland zone are defined in the NCP (40 CFR Part 300.5). The EPA has NCP response authority for incidents in all areas inland of the coastal zone. The Coast Guard has designated, as Areas, those portions of the Captain of the Port (COTP) zones that are within the coastal zone and for which area committees will prepare area contingency plans. COTP zones are described in Coast Guard regulations (33 CFR Part 3). This is the ACP for Coast Guard COTP zone MSU Morgan City.

1120 Louisiana State

The Louisiana Oil Spill Coordinator's Office (LOSCO), in consultation with the Louisiana Department of Environmental Quality, is authorized to administer the Louisiana Oil Spill Prevention and Response Act of 1991 (OSPRA, LRS 30:2475) and direct all state discharge response and cleanup operations resulting from unauthorized or threatened discharges of oil, affecting or potentially affecting the land, coastal waters, or any other waters of Louisiana, as directed by the Governor or upon a declaration of emergency by the Governor.

The Hazardous Material and Explosives Control Unit, under the Louisiana Department of Public Safety and Corrections, has the responsibility for response and investigation of all chemical emergencies occurring within the State of Louisiana. The Hazardous Material and Explosives Control Unit is the SOSOC for all Hazardous Substance releases.

1130 Other Federal, State, and Local Agencies

Other Federal, State, and Local agencies have varying authorities in the event of an environmental response depending on their jurisdiction and laws.

1140 Transition of OSCs

There are occasions when command responsibilities must transition from one On-Scene Coordinator (OSC) to another, from one federal or state OSC (FOSC or SOSOC) to another, or from a SOSOC to a FOSC. The transition in FOSCs is often necessitated by a determination of where the greatest impact of a spill is likely to take place. For example, a spill may originate in the inland zone where EPA has primary responsibility, but the majority of the impact from the spill may occur in the coastal zone where the USCG has responsibility.

Regardless of the circumstances that necessitate a transition in jurisdictional agency, clear and effective communications is essential to an efficient and safe response. Every effort must be made to share all pertinent information. This exchange of information could involve multiple issues and various amounts of detail, depending on the complexity of the spill. It should include, but is not limited to:

Current Situation

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Status of the source & spill
Review of the Incident Action Plan (IAP) & Site Safety Plan
Review of Site Communications
Discuss Resources En-route & On-scene
Note territory, exposures, safety concerns, etc.
Incident Potential

Organizational Structure

Unified Command & RP Representation
ISC Organizational Chart Review
Schedule of Meetings

Objectives and Priorities

Current and Planned Actions

Resources Assignments
Resources En-route and/or ordered
Facilities Established

Site Visit and Walk Through

Spill Investigation/Legal Issues

Cause of spill
Investigation & Evidence

Notifications

What notifications have been made?
Stakeholders? Tribes?
Local Issues and Economics?

Wildlife and Environment

Wildlife Impact Issues
Endangered Species
Environmentally Sensitive Areas

It is preferred that both OSCs are present through one complete operational period and planning cycle. The transition from one OSC to another should not be considered complete until the on-coming OSC acknowledges they are comfortable and the transition is documented. Further, when transition between federal agencies is necessary after the Oil Spill Liability Trust Fund is opened and a Federal Project Number (FPN/CPN) assigned, it should be documented in a Pollution Report (POLREP). Both OSCs must also submit cost documentation to account for funds expended during their tenure as the OSC.

1200 Geographical Boundaries

The boundaries of the MSU Morgan City Marine Inspection and Captain of the Port Zone starts at latitude 28°50'00" N, longitude 88°00'00" W.; thence west to latitude 28°50'00" N., longitude 89°27'06" W.; thence northwest to latitude 29°18'00" N, longitude 90°00'00" W; thence northwest along the northern boundaries of Lafourche, Assumption, Iberia, and St. Martin Parishes, Louisiana; thence northwest along the northern boundary of Lafayette and Acadia Parishes, Louisiana; thence south along the west boundary

Southeast Louisiana Area Contingency Plan

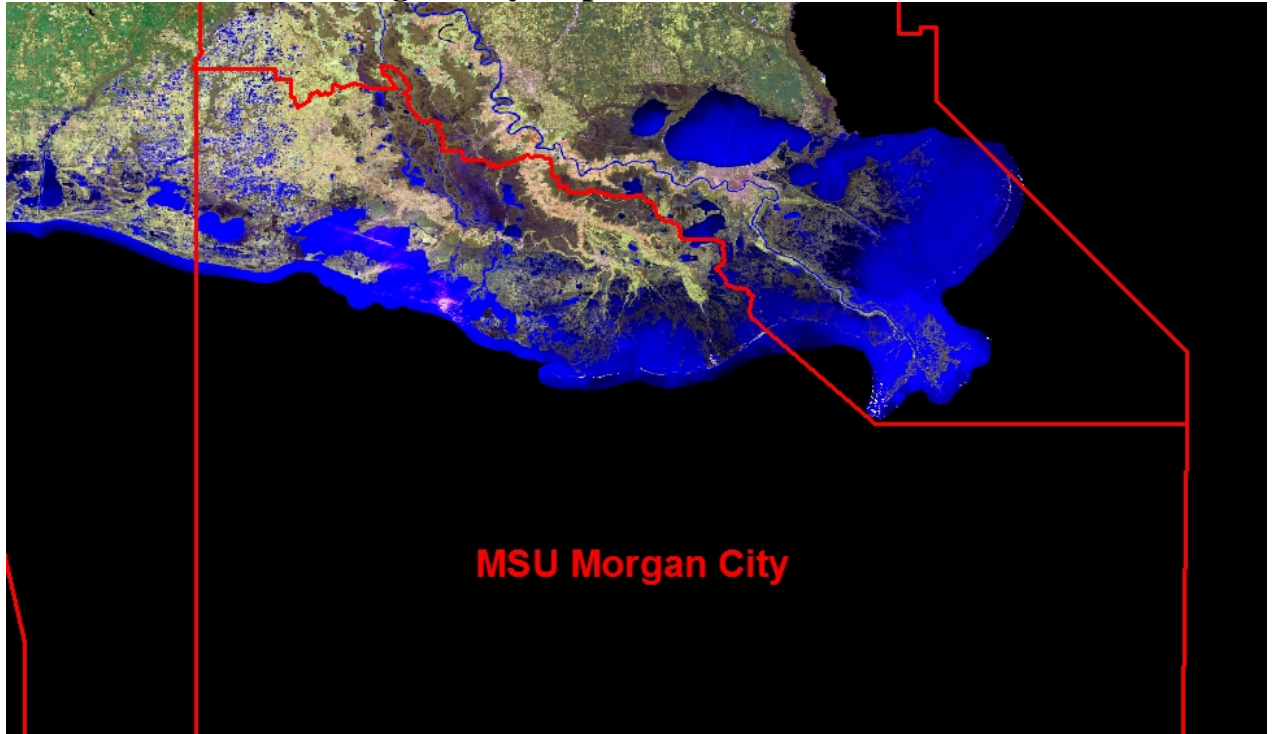
Chapter 1000 Introduction

of Acadia and Vermillion Parishes, Louisiana to the Louisiana Coast at longitude 92°37'00" W, thence south along longitude 92°37'00" W to the outermost extent of the EEZ to longitude 88°00'00" W.; thence north to latitude 28°50'00" N, longitude 88°00'00" W.

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MSU Morgan City Captain of the Port Zone



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Inland/Coastal Zone Delineation



The blue line in the map above marks the delineation between the USCG and EPA jurisdictions, Inland and Coastal Zones as defined in the NCP (40 CFR Part 300).

1210 Federal

The USCG Captain of the Port, Morgan City is the pre-designated OCS for pollution response in the Coastal Zone in accordance with 40 CFR Part 300.120(a)(1).

The Coastal Zone as defined for the purposes of the NCP and the Southeast Louisiana Area Contingency Plan means, all United States subject to the tide, United States waters of the Great Lakes, specified ports and harbors on inland rivers, waters of the contiguous zone, other waters of the high seas subject to the NCP, and the land surface or land substrata, ground waters, and ambient air proximal to those waters.

The EPA Region VI provides the pre-designated OSC for pollution response in the Inland Zone in the State of Louisiana. Responses conducted in the Inland zone shall be conducted in accordance with Region VI Regional Integrated Contingency Plan.

The Inland Zone as defined for the purposes of the NCP and the Southeast Louisiana Area Contingency Plan means, the environment inland of the coastal zone excluding the Great Lakes and specified ports and harbors on inland rivers. The term inland zone delineates an area of federal responsibility for response action. Precise boundaries are determined by EPA/USCG agreements and identified in federal regional contingency plans.

Specific response boundaries are identified in the [Memorandum of Understanding between EPA and USCG Eighth District](#). This document can be found in Chapter 9000, Appendix T.

For spills originating on land impacting or threatening to impact navigable water, the determination of the appropriate federal agency (EPA or USCG) for response shall be made by considering the AOR to which the largest impact may occur.

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According to Section 300.140(b) of the NCP, if a discharge or release affects more than one zone (inland/coastal/COTP), determination of the FOSC shall be based on the area vulnerable to the greatest threat. If the area vulnerable to the greatest threat cannot be determined, the Unified Command shall establish an Incident Command System that adequately accounts for effective response in both zones. If transition of FOSC from one agency to another is necessary, the transition shall follow the guidelines outlined in Section 1140 of this chapter.

1210.1 First Federal Official On-Scene

According to Section 300.135(b) of the NCP, the first federal official affiliated with a National Response Team member agency to arrive on scene of a discharge or release should coordinate activities under the NCP and is authorized to initiate, in consultation with the pre-designated FOSC and prior to his/her arrival on scene, any necessary actions normally carried out by the FOSC. Arrival of the first federal official on scene does not affect the designation of the appropriate FOSC.

1210.2 Trans-Boundary Jurisdictions

The following FOSC/COTP Zones border the Morgan City FOSC Zone.

North and East- U.S Coast Guard Sector New Orleans (504) 365-2200

West- U.S. Coast Guard MSU Port Arthur (409) 723-6500

Inland Zone- U.S. Environmental Protection Agency- 1866-EPA-SPILL (372-7745)

1220 State

The state of Louisiana will respond within its jurisdiction and laws within the state's boundaries.

1230 Tribal

The following Federally Recognized Tribes are contained within the geographical area covered under this plan.

Federal Tribal Historic Preservation Officers can be found at:

http://www.nathpo.org/THPO/state_list.htm#Louisiana

Louisiana

Chitimacha Tribe of Louisiana

Kimberly Walden, THPO

PO Box 661

Charenton, LA 70523

Tel: 337.923.9923

Fax: 337.923.6848

Email: kim@chitimacha.gov

Jena Band of Choctaw Indians

Dana Masters, THPO

PO Box 14

Jena, LA 71342

Tel: 318.992.1205

Southeast Louisiana Area Contingency Plan

Chapter 1000 Introduction

Fax: 318.992.8244

Email: danammasters@aol.com

Tunica-Biloxi Tribe of Louisiana

Earl J. Barbry, Jr., THPO

Tunica-Biloxi Tribal Historic Preservation Office

PO Box 1589

Marksville, LA 71351

Tel: 318.253.8174 x 6451

Fax: 318.253.7711

Email: earlii@tunica.org

Website: <http://www.tunica.org>

1240 Local

The following Parishes are contained within the geographical area covered under this plan. Parish agencies will respond within their jurisdiction and laws within the appropriate Parish boundaries.

- Acadia Parish
- Vermilion Parish
- Lafayette Parish
- Iberia Parish
- Saint Martin Parish
- Saint Mary Parish
- Assumption Parish
- Terrebonne Parish
- Lafourche Parish

1250 Memorandums of Understanding/Agreement

All Memorandums of Understanding (MOUs)/Agreement (MOAs) applicable to this plan can be found in Chapter 9000, Appendix T

1300 Area Committee Purpose and Objectives

The Southeast Louisiana Area Committee is a spill preparedness and planning body made up of federal, state, and local agency; industry; and non-governmental organization representation. The Southeast Louisiana Area Contingency Plan under the direction of the COTP/FOSC, is responsible for developing an Area Contingency Plan. The Southeast Louisiana Area Committee is also responsible for working with state and local officials to plan for joint response efforts, including appropriate procedures for mechanical recovery, dispersant use, shoreline cleanup, protection of sensitive environmental areas, and protection, rescue, and rehabilitation of fisheries and wildlife. The Southeast Louisiana Area Committee is also required to work with state and local officials to expedite decisions for the use of dispersants and other mitigating substances and devices.

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The Area Committee's primary objective is to plan for a safe, appropriate, and timely response to all reports of oil or hazardous substance spills.

1310 Area Committee Standing Membership

A list of all Southeast Louisiana Area Committee members and contact information can be found in Chapter 9000, Appendix A.

1320 Incident Specific Objectives

Incident Commanders/Unified Commands are responsible for providing direction and guidance to the Incident Management Team/Responders. The Command must analyze the overall requirements of the incident and determine the most appropriate direction for the Management Team/Responders to follow during an incident. This is in part accomplished by developing response objectives. The following are example objectives applicable to this plan; they can be used as is or modified in response specific risk applications. Also, incident specific objectives may be needed that are not represented in the below examples.

Safety

Provide for the safety and welfare of citizens and response personnel

Provide for the safety and security of responders as well as maximize the protection of the public health and welfare

Identify safety and risk management factors and monitor for compliance for both the public and responders

Implement practices that allow for the safety and welfare of vessel passengers and non-essential crew

Conduct Operational Risk Assessment and ensure controls are in place to protect the responders and the public

Fire/Salvage

Conduct damage/stability assessment; develop and implement a salvage plan

Implement the salvage and tow plan

Waterways Management

Conduct port assessment and establish priorities to facilitate commerce

Develop/implement transit plan to include final destination/berth(s) for vessels

Identify safe refuge/berth for impacted vessels

Reopen impacted waterways as soon as is practicable

Oil/Haz Substance

Control the source and minimize the volume discharges/released

Determine oil/haz substance fate and effect (trajectories)

Identify sensitive areas, develop strategies for protection and conduct pre-impact shoreline debris removal

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Contain and recover spilled product(s)

Conduct an assessment and initiate shoreline cleanup efforts

Remove product from impacted area

Conduct efforts to effectively contain, cleanup, recover, and dispose of spilled product

Environmental

Provide protection of environmental sensitive areas including wildlife and historic properties

Identify and maximize the protection of environmental sensitive areas

Identify threatened species and prepare to recover and rehabilitate injured wildlife

Investigate the potential for an feasible, utilize alternative technologies to support response effort

Management

Manage a coordinated interagency response effort that reflects the makeup of the Unified Command

Establish an appropriate Incident Management Team organization that can effectively meet the initial and long term challenges required to mitigate the incident

Identify all appropriate agency/organization mandates, practices, and protocols for inclusion in the overall response effort

Identify and minimize social, political, and economical adverse effects

Implement a coordinated response with other response agencies

Evaluate all planned actions to determine potential impacts to social, political, and economic entities
Identify competing response activities (SAR and Pollution mitigation) to ensure that they are closely coordinated

Identify and establish incident support facilities to support interagency response efforts

Keep the public, stakeholders, and the media informed of response activities

Ensure appropriate financial accounting practices are established and adhered to

Establish internal/external resource ordering procedures are established and adhered to

Establish an incident document system

Establish an appropriate structure to facilities communications with stakeholders and agency/organization coordination facilities

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1400 National Response System

1410 National Response Structure

The National Response System (NRS) coordinates all government agencies with responsibility for human health and environmental protection in a focused response strategy for the immediate and effective cleanup of an oil or hazardous substance spill. It is a three tiered federal response and preparedness system that supports the pre-designated FOSC and SOSC in coordinating national, regional, state, tribal, and local government agencies, industry, and the responsible party during a response.

The three tiers are the National Response Team, Regional Response Team, and the OSC. The NRS is described in the NCP (40 CFR Part 300). The NRS does not remove the primary responsibility of initiating and completing a proper response by the responsible party. The NRS is used for all spills. When appropriate, the NRS is designed to incorporate a unified command and control support mechanism consisting of the FOSC, the SOSC, and the Responsible Party's Incident Manager and, when appropriate, tribal and local representatives.

1410.1 Incident/Spill of National Significance

A Spill of National Significance (SONS) classification provides additional support at the national level to the FOSC. Per 40 CFR 300.323 the Commandant for the Coast Guard holds the authority for declaring a SONS. Some or all of the conditions below will exist when classifying a spill a SONS:

- A spill of size, magnitude and/or complexity that presents a significant challenge(s) to the Coast Guard FOSC and the RRT.
- Local and regional resource coordination or the Unified Commands incident management capability is exceeded.
 - Unified Command resource coordination capability is exceeded
 - The pre-designated FOSC is requesting regional support from the Coast Guard District
 - The Regional Response Team (RRT) is supporting the pre-designated FOSC in accordance with the Regional Contingency Plan
 - The Coast Guard LANTAREA is coordinating requests for Coast Guard resources and support through Coast Guard PACAREA
 - The Coast Guard Office of Incident Management and Preparedness is coordinating with the National Response Team for interagency and international support.
- Multiple unified incident command posts (ICPs) have been established
- One or more Area Command(s) (UACs) has/have been established
 - Each UAC has established communication with regional level agencies, tribal, and territorial emergency and environmental response management personnel, and regional level non-governmental stakeholders to help establish response priorities

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- The UAC organization will already include the elements of the Coast Guard National Strike Force, RRT Co-Chairs, and the Coast Guard District Response Advisory Teams (DRATs).

The Coast Guard Commandant may choose to and has the authority to name a National Incident Commander (NIC) to assist the FOSC with interagency and governmental/public affairs coordination.

When an oil spill incident is an element of a larger response governed by a Stafford Act Presidential disaster declaration, it is unlikely that a SONS classification would be necessary. The national level response support will be coordinated by the Federal Emergency Support Function (ESF #10) within a Joint Field Office (JFO).

For more information regarding a SONS please refer to Coast Guard COMDTNIST 16465.1A

1410.2 National Response Team

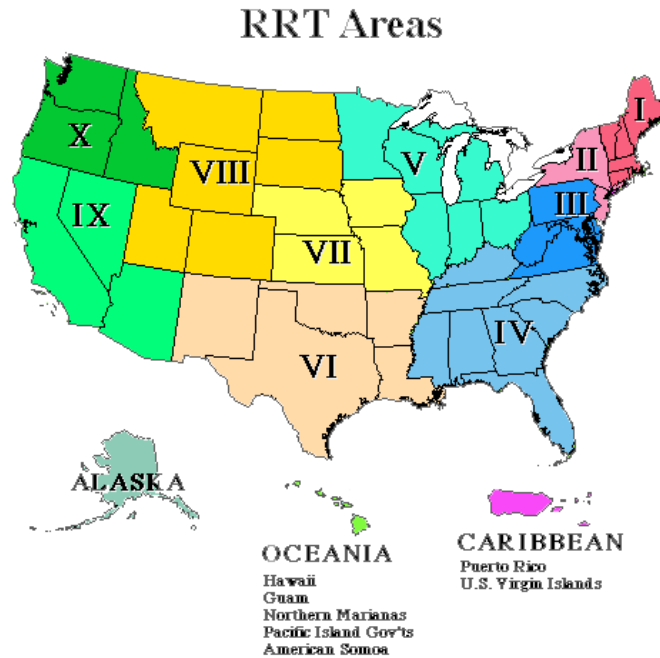
The National Response Team (NRT) consists of 16 federal agencies with responsibilities, interests, and expertise in various aspects of emergency response to pollution incidents. The EPA serves as chair and the Coast Guard as vice-chair of the NRT, except when activated for a specific incident, when the lead agency representative serves as chair. The NRT is primarily a national planning, policy and coordination body and does not respond directly to incidents. The NRT provides policy guidance prior to an incident and assistance usually takes the form of technical advice, access to additional resources/equipment, or coordination with other RRTs.

1420 Regional Response Team

There are 13 Regional Response Teams (RRTs), one for each of the ten federal regions and Alaska, the Caribbean, and the Pacific Basin. Each RRT has federal and state representation. EPA and the Coast Guard co-chair the RRTs. The RRTs are planning, policy, and coordinating bodies, and may be activated during a major incident to assist the FOSC with resources. The RRT also provides guidance support and approval for pursuing certain response strategies.

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RRTs may be activated for specific incidents when requested by the FOSC. If the assistance requested by a FOSC exceeds a RRT's capability, the RRT may request assistance from the National Response Team (NRT). During an incident the RRT may either be alerted by telephone or convened. The applicable RRT will be consulted by the FOSC on the approval/disapproval of the use of alternative response technologies (i.e. in-situ burning, dispersants, bio-remediation, and other chemical counter-measures) when that decision has not been pre-approved. The Southeast Louisiana Area Contingency Plan geographical boundaries fall within the jurisdiction of RRT VI

1430 Area Response Structure

The Southeast Louisiana Area Committee member agencies will manage spill incidents according to the following principles;

- **Incident Command System** The signatory agencies will use the National Incident Management System (NIMS) model Incident Command System (ICS);
- **Unified Incident Command** When more than one of the signatory agencies arrive on-scene to participate in managing a response action, the agencies will utilize a unified command structure to jointly manage the spill incident. In the Unified Incident Command (UC). Whenever possible, decisions with regards to the response will be made by consensus and documented through a single Incident Action Plan (IAP). When a consensus cannot be reached, the FOSC has the ultimate decision-making authority.

Members of the Unified Command shall have jurisdiction over the incident, capability to respond, and on-scene decision making authority.

- **Unified Area Command** For a very large single incident or multiple, simultaneous incidents involving a large number of resources and/or impacting a large geographical area, a

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Unified Command may be established. The Unified Area Command has the responsibility to: set overall incident-related objectives and priorities, allocate critical resources based on those priorities, ensure the incident/incidents are properly managed, and ensure that incident objectives are met and do no conflict with each other. The Unified Area Command has overall responsibility for setting response priorities and objectives, which are then carried out by field ICS/UC organization(s);

- **Tribal and Local Government On Scene Coordinators** The Unified command may incorporate additional tribal or local government on scene coordinator into the command structure as appropriate;
- **Responsible Party Command Structure** The person or persons responsible for a spill incident shall utilize an incident command system, which is capable of rapidly, and readily integrating into the NIMS based ICS/US organization utilized by the Southeast Louisiana Area Contingency Plan signatory agencies; and
- **Response Plan Approval** The National Oil and Hazardous Substance Contingency Plan (NCP, 40 CFR Part 300) requires that vessel, onshore facility, offshore facility, and pipeline response plans be compatible with the applicable Area Plan. Therefore, it is the policy of the Area Committee that vessel and facility contingency plans be consistent with the Southeast Louisiana Area Contingency Plan.

1430.1 Federal On-Scene Coordinator

USCG MSU Morgan City maintains and manages emergency response teams for response to discharges of oil and releases of hazardous substances in the coastal zone. These teams vary in size based on the nature of the incident. In all cases, they are tasked with assessing the discharge to determine response measures, monitor and supervise pollution countermeasures, document all phases of the response, conduct investigations to determine source, determine cause and responsible party, initiate enforcement actions, and act for the FOSC as an on-scene representative or until their arrival. Additional responsibilities include ensuring containment cleanup and disposal are carried out adequately, notification of all Natural Resource Trustees, and coordination of activities with federal, state, tribal, and local agencies.

The EPA Emergency Response Program consists of emergency response FOSCs located in the region office in Dallas, Texas, but they may respond to any location throughout the region, or throughout the country, as needed. The FOSCs are responsible for determining the source, cause, and responsible party, as well as initiating source control and enforcement actions as appropriate. Additional responsibilities include ensuring containment cleanup and disposal are carried out adequately, notification of all Natural Resource Trustees, and coordination of activities with federal, state, tribal, and local agencies. EPA also has access to technical assistance contractors who can provide technical oversight and other resources at spill and uncontrolled hazardous waste sites. In some cases, EPA's technical assistance contractor may arrive on scene prior to the FOSC. Prior to the arrival of the EPA OSC, the EPA contractor will cooperate with on-site agencies but will take direction through the EPA OSC only.

1430.2 Louisiana Response Structure

The Louisiana Oil Spill Prevention and Response Act of 1991 has pre-designated the Louisiana Oil Spill Coordinators Office (LOSCO) of the Governor to act as the lead state agency/ State On-Scene Coordinator (SOSC) for all oil spills or threatened oil spills affecting the land, coastal waters, or any other waters of Louisiana. The coordinator shall provide clear designation of the responsibilities and jurisdictions and avoid unnecessary duplication and expense. A complete list of the responsibilities for each state trustee

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agency as defined in the Louisiana State Oil Spill Contingency Plan can be found at http://www.losco.state.la.us/LOSCUploads/Newsflash/SCP_pub95_update96_02202008_Final.pdf.

For hazardous substance releases, the Louisiana Department of Public Safety serves as the SOSOC.

1430.3 Local Response Structure

The local response structure consists of the agencies below the state level, including Parishes, Cities, etc. When a local jurisdiction holds interest in an incident they may be represented by the Liaison Officer, in the command staff, or may have response personnel integrate into position in the general staff. In larger incidents local jurisdictions may be incorporated as branch directors.

1430.4 Industry Response Plans/Worst Case Discharges

The Oil Pollution Act of 1990 (OPA 90) amended section 311(j) of the Federal Water Pollution Control Act (FWPCA) to require the preparation and submission of oil spill response plans by the owners or operators of certain facilities and vessels. It also requires that the vessel or facility be operated in compliance with its submitted response plan. Failure to have submitted a response plan, and to have received approval of that plan, results in the prohibition of that vessel or facility from the handling, storing, or transporting of oil.

A major feature of the OPA90 spill response plans is the requirement for vessel and facility owners and operators to identify and ensure the availability of, by contract or other approved means, personnel and equipment necessary to remove the “worst case discharge” to the “maximum extent practicable”.

Chapter 9000, Appendix B contains planning scenarios for the Worst Case Discharges within the Southeast Louisiana Area Committee boundaries.

1430.4.1 Off-Shore Facility Oil Spill Response Plan

Owners and/or Operators of an oil handling, storage, or transportation facility, and is located seaward of the coast line, must submit a spill-response plan to BSEE for approval. The spill-response plan must demonstrate that the owner/operator can respond quickly and effectively whenever oil is discharged from their facility. The requirements for Off-shore Oil Spill Response Plans can be found in 30 CFR Part 254.

1430.4.2 On-Shore Facility Response Plans

33 CFR Part 154 requires that the owner or operator of a “substantial harm” or “significant and substantial harm” facility, as defined in 33 CFR Part 155, submit a Facility Response Plan (FRP) to the local Captain of the Port. Section 4202(b)(4)(B) of OPA 90 precludes a facility from handling, storing, or transporting oil unless a FRP has been submitted to the Coast Guard. For all marine transportation-related facilities, reviews and approvals will be done by the local Coast Guard Captain of the Port. Information contained in the FRPs is based upon national planning standards and the response scenarios are intended to be used to develop a planning document and not establish a performance document of standard.

1430.4.3 Vessel Response Plans

Due to the transitory nature of vessel operations, all Vessel Response Plans (VRPs) are reviewed at the national level. Information contained in the VRPs is based upon national planning standards and the response scenarios are intended to be used to develop a planning document and not establish a performance document of standard.

UC/ICs can utilize these plans to assist with a response to a Tank or Non-tank vessel. The following information should be available in a VRP.

- Tank Diagrams

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- Emergency Contacts
- Contracted Response Resources
- Salvage and Marine Firefighting Plan
- Emergency Lightering Procedures

1430.4.4 Tank Vessel Response Plans

Vessel Response Plans (VRPs) are required for all Tank Vessels that are constructed or adapted to carry oil in bulk as cargo or cargo residue except: vessels exempted in 33 CFR Part 155.1015 and fishing and fish tender vessels of not more than 750 gross tons when engaged only in the fishing industry. The requirements for these plans can be found in 33 CFR Part 155 Subpart D

1430.4.5 Non-Tank Vessel Response Plans

On August 9, 2004, the President signed the Coast Guard Maritime Transportation Act of 2004 (CGMTA 2004). Section 701(a) and (b) of the CGMTA amend sections 311(a) and (j) of the FWPCA to require the Coast Guard to issue regulations that require an owner or operator of a non-tank vessel to prepare and submit to the Coast Guard a plan for responding to the maximum extent practicable to a worst case discharge, of oil, and to a substantial threat of such discharge.

NVIC 01-05, Change 1 provides voluntary guidance to owners and operators of non-tank vessels for preparing and submitting plans for responding to a discharge or threat of a discharge of oil from their vessel and for receiving interim operating authorization from the Coast Guard.

1430.4.6 Shipboard Oil Pollution Emergency Plan (SOPEP)

The Act to Prevent Pollution from Ships was amended to incorporate the requirements regarding Shipboard Oil Pollution Emergency Plan (SOPEPs) of Annex I of the International Convention for the Prevention of Pollution from Ships 1973, as modified by the Protocol of 1978, as amended (MARPOL 73/78).

SOPEPs are required to be carried on board all oceangoing oil tankers of 150 gross tons and above and all other vessels of 400 gross tons and above. SOPEPs are required to be reviewed and approved by the vessel's flag state (country) administration. For U.S. flag vessels 33 CFR Part 151.27 requires that the Coast Guard and approve the plan. To provide consistency the review of SOPEPs, all plans will be reviewed nationally by the Coast Guard.

The purpose of a SOPEP is different than that of the vessel and facility response plans mandated by OPA 90. A SOPEP provides guidance to the ship's master and officers with respect to the onboard emergency procedures followed when a pollution incident has occurred or is likely to occur. These plans will often be in a checklist type format.

1430.4.7 Pipeline Response Plans

Owners and/or Operators of an onshore oil pipeline than, because of its location, could reasonably be expected to cause substantial harm to the environment by discharging oil into or on the a navigable waterway of the United States or adjoining shoreline must poses a Oil Spill Response Plan. The requirements for Pipeline Oil Spill Response Plans can be found in 49 CFR Part 194.

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1430.5 National Responsible Party Policy

Under the FWPCA as amended by OPA 90, the responsible party has primary responsibility for cleanup of a discharge. Per FWPCA Section 311 and OPA90 Section 4201, an owner or operator of a tank vessel or facility participating in removal efforts shall act in accordance with the NCP and the applicable response plan. FWPCA Section 311(j)(5)(C) as implemented by OPA90 Section 4202 states that these response plans **SHALL**:

- Be consistent with the requirements of the National Contingency Plan and Area Contingency Plans;
- Identify the qualified individual having full authority to implement removal actions, and require immediate communications between that individual and the appropriate UC official and the persons providing personnel and equipment pursuant to this clause;
- Identify, and ensure by contract or other means approved by the President, the availability of private personnel and equipment necessary to remove to the maximum extent practicable a worst-case discharge (including a discharge resulting from fire or explosion), and to mitigate or prevent a substantial threat of such a discharge;
- Describe the training, equipment testing, periodic unannounced drills, and response actions of persons on the vessel or facility, to be carried out under the plan to ensure the safety of the vessel or facility and to mitigate or prevent a substantial threat of such a discharge;
- Be updated periodically; and
- Be resubmitted for approval of each significant change.

Each owner or operator of a tank vessel or facility required by OPA90 to submit a response plan shall do so in accordance with applicable regulations. Facility and tank vessel response plan regulations, including plan requirements for the Coastal Zone, are located in 33 CFR Parts 154 and 155, respectively; 30 CFR Part 254 for Off-shore facilities, and 49 CFR Part 194 for Pipeline. Facility response plan regulations for the inland zone are located in 40 CFR Part 112.

Each responsible party for a vessel or a facility from which oil is discharged, or which poses a substantial threat of a discharge, into or upon the navigable waters, adjoining shorelines or the Exclusive Economic Zone of the United States, is liable for the removal costs and damages specified in Subsection (b) of Section 1002 of OPA90. Any removal activity undertaken by a responsible party must be consistent with the provisions of the NCP, the Regional Contingency Plan (RCP), the Southeast Louisiana Area Contingency Plan and the applicable response plan required by OPA90. If directed by the Unified Command at any time during removal activities, the responsible party must act accordingly.

1430.5.1 Responsible Party Compliance Guidance

Specific responsibilities of the RP include, but are not limited to:

- Assessment of discharge or release;
- Establishment of a command post, in concurrence with the other On-Scene Coordinators (OSCs)
- Documentation/identification of type and quantity of oil or hazardous substance discharged or released;

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- Containment of the oil or hazardous substance spilled or released and protection of the environment, with a particular emphasis on sensitive areas;
- Provisions of input relative to cleanup priorities (i.e. waste minimization)
- Timely and effective cleanup;
- Disposal of oil, oily waste, and Hazardous substances;
- Restoration of damaged environmental/natural resources;
- Communication with local, state, and federal response agencies and organizations;
- Communication with the media;
- Payment for damages;
- Steps to prevent reoccurrence of discharges or releases; and
- Wildlife collection and care in conjunction with responsible state, local, and federal agencies.

The RP has the opportunity to conduct damage assessments when required by the state/federal agencies and/or when appropriate given the RP's available resources as determined by the UC.

1430.5.2 Responsible Party Conformation with the Southeast Louisiana Area Contingency Plan

The NCP requires that response plan holders "prepare and submit a plan for responding, to the maximum extent practicable, to a worst case discharge, and to a substantial threat of such discharge, of oil or a hazardous substance. These response plans are required to be consistent with the Southeast Louisiana Area Contingency Plan.

The requirement for vessel, on-shore facility, offshore facility, and pipeline response plans to be consistent with the Southeast Louisiana Area Contingency Plan applies to:

- Contingency Plan: content, review, and approval;
- The execution and evaluation of spill drills and exercises; and
- The management of spill response actions.

Failure to adequately conform to the Southeast Louisiana Area Contingency Plan may result in: rejection of a spill contingency/response plan; non-credit for a drill; or federal and/or state agencies assuming direct control of a spill response action. However, it is also the policy of the Southeast Louisiana Area Committee that the unified command will encourage the party responsible for a spill incident, to maintain the primary responsibility for managing the response action so long as they:

- Actively and cooperatively participate in the unified command structure;
- Provide an organization which is compatible with NIMS ICS;

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- Provide regular communication and documentation that assures adequate response resources are brought rapidly mobilized in proportion to the size of the incident as discussed in the following section; and
- Follow their approved spill contingency/response plan (if applicable) unless otherwise directed, or a deviation is agreed to, by the unified command.

1430.5.3 Requirement for a Full and Rapid Response

The Southeast Louisiana Area Committee shall plan for an aggressive, timely, and efficient, early response to an incident to provide adequate equipment and trained personnel to effectively respond to the highest quantity of product that can be released. If it is determined that excessive response resources are ordered or mustered they may be canceled or demobilized to help control the cost of the response action to the responsible party and responding agencies.

In launching an aggressive, timely, and efficient response take the following into account:

- It is often difficult to obtain precise information on the quantity of oil or hazardous material, which has actually been released and is likely to continue to be released until the source is controlled;
- Notification may be delayed;
- There is a tendency of some responsible parties to be very conservative in estimating the quantity of oil spilled due to liability considerations;
- Miscommunication can occur as to the actual extent of personnel and equipment which has been ordered, and as to the time of arrival. Similarly, estimates are sometimes overly optimistic;
- Response contractors may experience difficulty in mobilization in a timely fashion a portion of their response resources for various reasons; and
- In some cases, state and federal on-scene coordinators are cautious in making sure responsible parties do not mobilize unnecessary resources, which would needlessly increase the cost of the response action.

However, adequate response resources must be rapidly mobilized if initial source control, containment, and cleanup efforts are to be successful. Spill response is more cost-effective and far less damaging to natural resources to contain a spill rather than to remove it from the water and beaches.

If the responsible party fails to respond in a manner deemed reasonably consistent with this policy and the Southeast Louisiana Area Contingency Plan, the FOSC or SOSC may assume the lead for a portion or of the entire spill. The agency proposing to assume lead for the cleanup will closely coordinate with other members of the unified command prior to taking such action.

Another reason that rapid response and containment is important is that, there are certain weaknesses in the response community's ability to mount a fully effective response. These weaknesses are:

- **Coastal Response.** During certain times of the year, it is very difficult to mount an effective response action for spills in the outer coastal environment. Once equipment arrives on-

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scene in the coastal environment, sea state and meteorological conditions (such as fog, wind, and rain) may dramatically limit or terminate effective oil booming and on-water recovery efforts;

- **Response in Shallow Marine Embayments.** Diversions and containment booming and intertidal shoreline cleanup is very difficult in many of the Southeast Louisiana ' areas sensitive shallow marine estuaries. Once oil enters these intertidal areas, extensive environmental damage is likely and recovery technology has minimal effectiveness. In these environments, conventional shoreline clean-up activities themselves can cause extensive damage and are therefore seldom used; and
- **Response to Catastrophic Oil Spills** Should a catastrophic oil spill occur, it is likely that there will not be adequate response resources in the Southeast Louisiana area to manage and clean-up the spill. Therefore, the Southeast Louisiana area will rely in part on mutual aid from Gulf Coast States, and other jurisdictions to provide much of the necessary response resources in the event of a catastrophic spill.

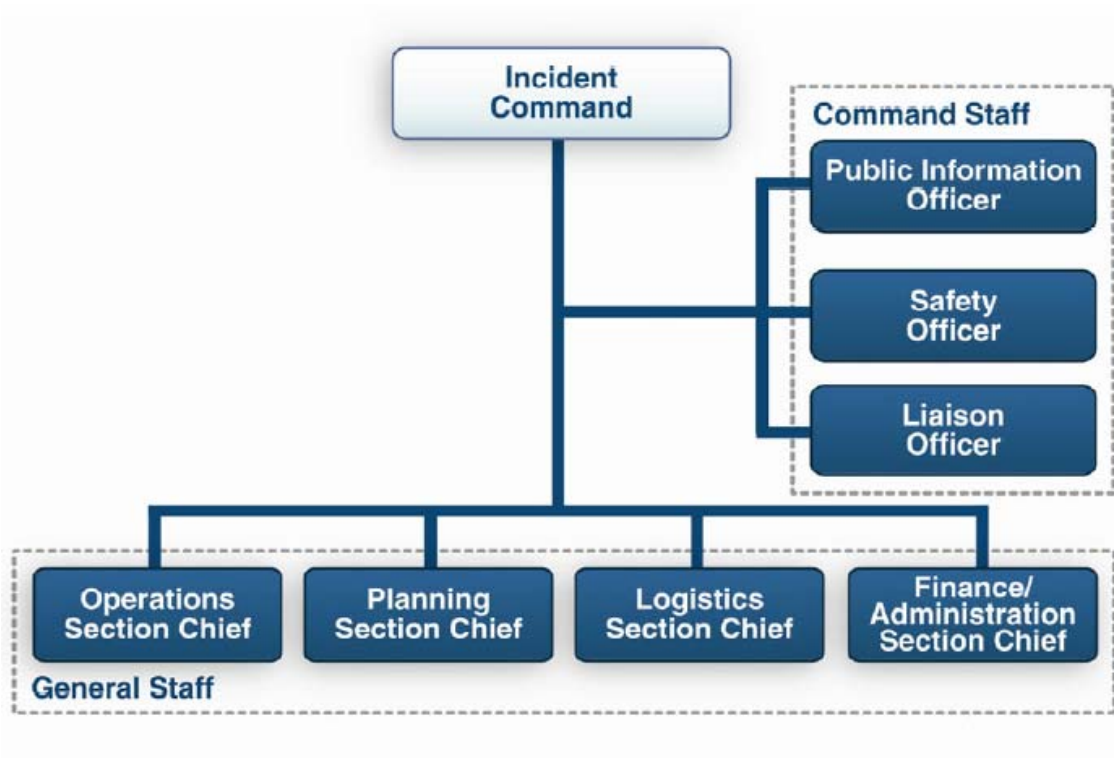
1440 Incident Command System

The unified incident command structure allows for a coordinated response, which takes into account the federal, state, tribal, local and responsible party concerns and interests when implementing the response strategy. The FOSC has the ultimate authority in a response operation and will only exert this authority, consistent with the NCP, if the other members of the unified incident command are not present or are unable to reach consensus quickly.

During responses to oil and hazardous substance spills, local agencies may be involved as part of the incident response, and may provide agency representatives who interface with the command structure thorough the Liaison Officer or the SOSC, or within the incident structure itself. When a UC is used, an Incident Command Post (ICP) and Joint Information Center (JIC) shall be established. The ICP shall be as near as practicable to the spill site. All responders (federal, state, tribal, local, and private) should be incorporated into the response organization at the appropriate level.

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1450 Area Exercise Mechanism

The FOSC shall periodically conduct drills of removal capability, without prior notice, in areas for which ACPs are required. This action will allow effective assessments of such plans and relevant vessel, and facility response plans. These drills may include participation by federal, state, local agencies, owners and operators of vessels and facilities in the area, and private industry. The National Strike Force Coordination Center (NSFCC) will act as a clearinghouse for exercises, participating in the development, execution, and evaluation to the fullest extent practicable, with the cognizant program managers of the USCG and EPA. The NSFCC may, in conjunction with the cognizant program managers of the USCG and EPA, impose unannounced area or multi-area exercises. [NOTE: The NSFCC is responsible for executing the National Preparedness for Response Exercise Program (PREP). All USCG participation in exercises will be coordinated with and/or through the NSFCC.]

1450.1 National Preparedness for Response Exercise Program (NPREP)

The National Preparedness for Response Exercise Program (NPREP) was developed to establish a workable exercise program which meets the intent of Section 4204(a) of OPA 90, amending Section 311 (j) of the FWPCA, by adding a new subsection (6) and a new subsection (7) for spill response preparedness.

The NPREP was developed to provide a mechanism for compliance with the exercise requirements, while being economically feasible for the government and oil industry to adopt and sustain. The NPREP is a unified federal effort and satisfies the exercise requirements of the Coast Guard, the EPA, the Pipeline and Hazardous Materials Safety Administration (PHMSA) Office of Pipeline Safety, and the Bureau of Safety and Environmental Enforcement (BSEE). Completion of the NPREP exercise will satisfy all OPA 90 mandated federal oil pollution response exercise requirements.

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NPREP addresses the exercise requirements for oil pollution response. There are additional industry planning and exercise requirements contained in other federal statutes, which are not address in the NPREP Guidelines. The NPREP represents the minimum guidelines for ensuring adequate response preparedness. If personnel with an organization believe additional exercises or an expansion of the scope of the NPREP exercises are warranted to ensure enhanced preparedness, they are highly encouraged to conduct these exercises.

The NPREP exercise should be viewed as an opportunity for continuous improvement of the contingency/response plans and the response system. Plan holders are responsible for addressing any issue that arise from evaluation of the exercise and for making changes to the contingency/response plans necessary to ensure the highest level of preparedness.

1450.1.2 Participation in NPREP

Industry Plan holders are required to meet the pollution response exercise requirements mandated by the federal agency with regulatory oversight for the specific type of industry involved (e.g., vessel, marine transportation-related facilities, onshore and certain off-shore non transportation-related facilities, pipelines, offshore facilities). The NPREP satisfies these requirements. The NPREP is voluntary program. Plan holders are not required to follow the NPREP guidelines and, if they choose not to, may develop their own exercise program that complies with the regulatory exercise requirements. The NPREP guidelines can be found online at http://www.uscg.mil/hq/nsfweb/download/PRP/PRP_GLNS_Aug_02.pdf

Applicability

The NPREP is applicable to all industry response plan holders who elect to follow these guidelines.

Industry plan holders electing not to adopt the NPREP as their exercise program will be responsible for developing and documenting an exercise program that satisfies the appropriate federal oversight agency. If an industry plan holder has developed one response plan that covers a fleet of vessels or regional operations of offshore platforms, this plan holder would only be required to conduct on “set” of exercises for the plan, with the exception of the Qualified Individual notification exercises and the emergency procedure exercises, which are required for all manned vessels and unmanned barges as specified in 33 CFR Part 155.1060

The Eighth Coast Guard District coordinates the NPREP. For detailed information on the NPREP, the National Preparedness for Response Exercise Program (NPREP) handbook can be found online at: <http://www.uscg.mil/hq/g-m/nmc/response/msprep.pdf>.

A three year NPREP Schedule for both the coastal and inland zones can be found on the National Strike Force Coordination Center (NSFCC) Webpage at: <http://www.uscg.mil/hq/nsfweb/nsfcc/prep/prepexerciseske05.html> .

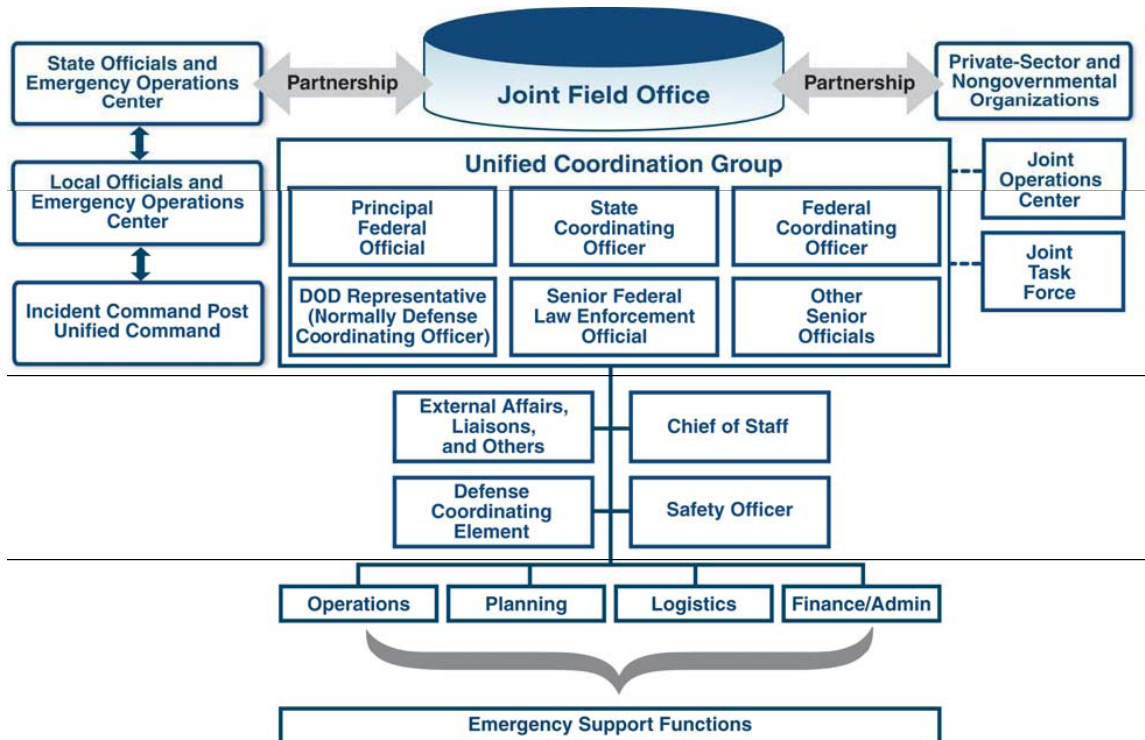
1460 National Response Framework

After close collaboration with state and local government officials and representatives from a wide range of public safety organizations, The U.S. Department of Homeland Security (DHS) issued the National Incident Management System (NIMS) which provides a consistent nationwide approach for Federal, State, local, and local governments and private sector and non-governmental organizations (NGOs) to work effectively and efficiently together to prepare for, prevent, response to, and recover from domestic incidents, regardless of cause, size, or complexity. The incident management system outlined in the Southeast Louisiana Area Contingency Plan is consistent with NIMS.

The National Response Framework and NIMS documents may be accessed at <http://www.fema.gov/emergency/nrf/mainindex.htm>

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Note: Per Notice of Change of the National Response Plan to the National Response Framework the Interagency Incident Management Group is now the Unified Coordination Group and the Homeland Security Operations Center is not the National Operations Center.

Initial response to an act of terrorism from chemical warfare agents or radiological materials may not likely differ greatly from a response to other hazardous material incidents. Terrorism response for biological agents and explosives may differ significantly from typical hazardous materials incidents. It may be unclear at the initial on-set of a response whether the cause was accidental or an act of terrorism. Local responders will be the first to arrive on scene to assess the situation and possibly take initial response measures to contain or stop the release. A terrorist incident will always be treated as a crime scene and preservation of evidence is critical. Coordination is required between law enforcement who view the incident as a crime scene, and other first responders who view the incident as a hazardous materials problem or disaster site. Although protection of life remain paramount, the protection and processing of the crime scene is imperative so that perpetrators may be identified and apprehended.

The responsibilities for response to a WMD incident lie with multiple agencies and the Southeast Louisiana Area Committee should be prepared to provide resources under the National Response Framework (NRF) during a response to a terrorist incident. It is possible that a major public health and environmental incident could be the result, perhaps the intent, of this type of incident. The Southeast Louisiana Area Contingency Plan may be needed to address critical short-term issues while a larger response infrastructure is developed under the full National Response Framework. Parallel response actions by Southeast Louisiana Area Contingency Plan member agencies may be on-going under the NRS prior to and during NRF activation.

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1470 Nuclear/Radiological Incident Annex to the NRF

The Nuclear/Radiological Incident Annex (NRIA) to the NRF describes the policies, situations, concepts of operations, and responsibilities of the Federal departments and agencies governing immediate response and short-term recovery activities for incidents involving release of radioactive materials to address the consequences of the event. These incidents may occur on Federal-owned or –licensed facilities, privately owned property, urban centers, or other areas and may vary in severity from the small to the catastrophic. The incidents may result from inadvertent or deliberate acts. The NRIA applies to incidents where the nature and scope of the incident requires Federal response to supplement the State, Tribal, and/or Local incident response.

1500 Area Response Policy

1510 National Response Policy

The National Response Policy is to ensure that all applicable laws and regulations are carried out. Those laws and regulations are intended to ensure effective and immediate removal of a discharge/release, mitigation or prevention of a substantial threat of a discharge of oil or release of hazardous substances, and overall protection of human health and the environment.

1520 Coast Guard Policy

The Coast Guard will respond consistent with the policy outlined in the NCP and this Area Contingency Plan. The Coast Guard may elect not to dispatch representatives to reported discharges where representatives of another cognizant government agency are responding. However, if Federal removal is indicated within the coastal zone, the Coast Guard will respond. If the responsible party is conducting proper removal, the Coast Guard FOSC will use best judgment in determining the need for the presence of Coast Guard personnel on scene. In the event of a spill where there is no responsible party or their response efforts are inadequate, Coast Guard responsibilities may include assuming the response actions, partial response actions, or assuming a joint leadership in a unified command with state and local responders. General Coast Guard policy for pollution response is provided in Volume VI of the Coast Guard Marine Safety Manual.

1530 Environmental Protection Agency Policy

By statute, the EPA is the FOSC for inland spills of oil or hazardous substances. In most instances, EPA is not the first responder on scene. EPA works in cooperation with other responders, but has not delegated their responsibility as FOSC. In all spill situations, it is EPA's intent to contribute to the response by working with the local, state, tribal authorities, general public and Federal agencies to ensure the information needed to minimize the effectiveness of the response effort is easily accessible. During a response to a release, the potential responsible party (PRP), if known, available, and willing, are generally given the opportunity to adequately respond. The EPA works closely with PRPs when they are known and willing to take action to ensure that the release reaches and adequate and rapid conclusion with a minimum impact on the environment. In the event of a spill where the PRP is not identified, does not respond to contain or clean up the spill, or does an inadequate job responding, EPA responsibilities may include taking over the response or assuming a co-lead role in a unified command with state and local responders.

1540 Bureau of Safety and Environmental Enforcement

The Bureau of Safety and Environmental Enforcement (BSEE) is responsible for ensuring comprehensive oversight, safety, and environmental protection in all offshore energy activities. BSEE handles safety and environmental enforcement functions including, but not limited to, the authority to inspect, investigate, summon witnesses and produce evidence, levy penalties, cancel or suspend activities, and oversee safety, response, and removal preparedness.

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1550 Department of Defense and Department of Energy Policies

In the case of the Departments of Defense (DOD) or Department of Energy (DOE), when a response to a release or threat of release of a hazardous substance, pollutant, or contamination is on DOD or DOE property, or the sole source of the release is from any facility or vessel under the jurisdiction, custody, or control of DOD or DOE, those agencies shall provide FOSCs responsible for taking all response actions. DOD will be the removal response authority with respects to incidents involving DOD military weapons or munitions or weapons and munitions under the jurisdiction, custody, or control of the DOD.

1600 National Policy & Doctrine

1610 National Response Doctrine

The National Incident Management System (NIMS) Incident Command System is the recognized standard with which management systems must demonstrate compatibility and is the measure by which regulatory agency plan reviewers, exercise evaluators, and spill responders will gauge the adequacy of response actions. While this system allows considerable operational flexibility, it included a collaborative planning process that delineates key management position responsibilities, common use of forms, essential Incident Action Plan elements and response personnel and equipment resource tracking methods.

Under the NIMS Guidance, Incident Resource typing, for both equipment and overhead personnel typing protocols will be forthcoming. Resource typing, which is based upon capability, will provide a basis for which resources can be requested to support response to incidents nationwide. For example, the Coast Guard Sector will provide trained and qualified Type III Command and General Staff personnel, with some key Type III Unit Leader Positions within the Sections.

Section 4201 of OPA 90 amended Subsection I of Section 311 of the FWPCA, to require the Federal OSC to “in accordance with the National Contingency Plan and any appropriate Area Contingency Plan, ensure effective and immediate removal of a discharge, and mitigation or prevention of a substantial threat of a discharge, of oil or a hazardous substance – (i) into or on the navigable waters; (ii) on the adjoining shorelines to the navigable waters; (iii) into or on the waters of the exclusive economic zone; or (iv) that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States.” “In carrying out these functions, the OSC may: (i) remove or arrange for the removal of a discharge, and mitigate or prevent a substantial threat of a discharge, at any time; (ii) direct or monitor all Federal, State, and private actions to remove a discharge; and (iii) recommend to the Commandant that a vessel discharging or threatening to discharge, be removed and, if necessary, destroyed.” If the discharge or substantial threat of discharge of oil or hazardous substance is of such size or character as to be a substantial threat to the public health or welfare of the United States (including but not limited to fish, shellfish, wildlife, other natural resources, and the public and private beaches and shorelines of the United States), the OSC shall direct all Federal, State, and private actions to remove the discharge or to mitigate or prevent the threat of the discharge.

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1620 Regional Response Doctrine

The Regional Response Doctrine is comprised of two principle components. These are a standing team which consists of designated representatives from each participating federal agency, state government, and local governments (as agreed upon by the state) of the RRT; and incident specific teams formed from the standing team when the RRT is activated for a response. On incident-specific teams, participation by the RRT Member agencies will relate to the technical nature of the incident and its geographic location.

The [RRT VI Standard Operating Procedures](#) can be found in the [Texas General Land Office's \(TGLO\) Oil Spill Tool Kit](#).

1630 Area Response Doctrine

Pursuant to the National Contingency Plan (NCP; 40 CFR Part 300), area committees have been established for each area of the United States that has been designated by the President. The area committees are comprised of personnel from Federal and state agencies who coordinate response actions with tribal and local governments and with the private sector. Area committees, under the coordinated direction of Federal On-Scene Coordinators (FOSC), are responsible for developing Area Contingency Plans (ACPs). Area committees are also required to work with the response community to develop procedures to expedite decisions for the use of alternative response measures.

This plan serves as the Southeast Louisiana Area Committees Area Contingency Plan, and the Area Response Doctrine in regards to Oil discharges and Hazardous Substance releases.

1640 Public vs. Private Resource Utilization

The Oil Pollution Act of 1990 (OPA 90) reaffirmed the basic principle that the primary source of an oil spill preparedness and response system in the U.S. should be implemented and maintained by the private sector. It is not, nor should it be, the Coast Guard's intent to compete with the commercial oil and hazardous materials pollution response industry. The utilization of government resources in lieu of commercial resources can place the government in a competitive environment. This is not the intent of OPA 90, as it defeats the incentive for commercial enterprise to maintain equipment and trained personnel in a competitive market. The Coast Guard's pre-positioned response equipment, other publicly owned response equipment, and other initiatives under the Coast Guard's oil spill response program are only intended to supplement the oil and clean-up industry's response program or be used if the commercial industry does not have readily available resources, and only until such time that the Federal On-Scene Coordinator (FOSC) or the Unified Command decides to release the resources.

The FOSC has the authority and responsibility in accordance with the National Contingency Plan to contain, control, and carry out response activities for the removal of a discharge where a substantial threat to public health or welfare, or where natural resources are endangered. At the direction and discretion of the FOSC and the Unified Command, when the responsible party executes a suitable response, any government equipment deployed should be withdrawn as commercial equipment becomes available and is placed into service.

The FOSC may consider using Coast Guard/Department of Defense (DOD) or Oil Spill Cooperative resources in such instances when the spill has been federalized and/or private sector resources cannot respond to the incident in a timely manner, or there are certain specific resources not available from the private sector.

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While it is the policy of the Commandant to mount an aggressive, timely, efficient response, the FOSC must be mindful that the use of government-owned equipment and resources is not to compete with the use of commercial resources. Government resource should only be used under specific circumstances:

- For “first aid” spill response until contracted commercial resources arrive on-scene and are operating.
- When commercial resources are not available. This assumes that the RP, Qualified Individual, Incident Commander, or cleanup contractor has sought commercial resources but they are not available.
- Government resources can supplement commercial resources. Government resources are not to be used for the convenience of the responsible party.

1650 Best Response Concept

Best Response depends on the best efforts of the three components of the National Response System.

- Companies – those responsible for producing, handling, storing, and transporting oil and hazardous materials, and for arranging for mitigation of an accidental discharge or release;
- Contractors – those who carry out response and cleanup in the event of a discharge or release; and
- Government – those Federal, state, and local agencies with oversight responsibility for the safe handling of oil and hazardous materials and for ensuring protection of the public and the environment in the event of a discharge or release.

Best Response protects our national interests. Each component must act responsibly, effectively, and cooperatively to accomplish the shared goal of minimizing the consequences of pollution incidents. Finally, Best Response demands that a response community builds a method to measure its own capability to achieve success. To do this kind of self-assessment the community must be able to recognize success. Key Business Drivers are the major categories within a Best Response model of things that have to be done if we are to accomplish the goal of Best Response – minimize the consequence of pollution incidents – and to be perceived as successful. Critical Success Factors are the specific things that a response must accomplish to be considered successful. There are a number of critical success factors for each Key Business Driver. An oil spill response that achieves all or most of these factors will, according to the Best Response precepts, be judged as a success.

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1660 Cleanup Assessment Protocol

When spilled oil contaminates shoreline habitats, responders must survey the affected areas to determine the appropriate response. Although general approvals or decision tools for using shoreline cleanup methods can be developed during planning stages, responders' specific cleanup recommendations must utilize field data on shoreline habitats, type and degree of shoreline contamination, and spill-specific physical processes. Cleanup endpoints must be established early so that appropriate cleanup methods can be selected to meet the cleanup objectives. Shoreline surveys must be conducted systematically because they are crucial components of effective decisions. Also, repeated surveys are needed to monitor the effectiveness and effects of ongoing treatment methods (changes in shoreline oiling conditions, as well as natural recovery), so that the need for changes in methodology, additional treatment, or constraints can be evaluated.

The Shoreline Assessment Manual, August 2000, NOAA/HAZMAT outlines methods for conducting shoreline assessments. Shoreline assessment is a function conducted under the Planning Section of the Incident Command System (ICS).

NOAA's Shoreline Assessment Manual outlines methods that can be used to plan and conduct shoreline assessment after an oil spill; and can then be incorporated into assessment results of the UC's decision-making process for shoreline cleanup. The Shoreline Assessment Job Aid is a supplement to the manual. It contains visual examples of many of the terms you would use during shoreline assessments.

When to terminate specific oil spill cleanup actions can be a difficult decision; When is clean, clean enough? The increasing cost of the cleanup and the damage to the environment caused by cleanup activities must be weighed against the ecological and economic effects of leaving the remaining oil in place. The decision to terminate cleanup operations is site-specific. Cleanup usually cannot be terminated while the one of the following conditions exist:

- Recoverable quantities of oil remain on water or shores.
- Contamination of shore by fresh oil continues.
- Oil remaining on shore is mobile and may be refloated to contaminate adjacent areas and near shore waters.

Cleanup may normally be terminated when the following conditions exist:

- The environmental damage caused by the cleanup efforts is greater than the damage caused by leaving the remaining oil or residue in place.
- The cost of cleanup operations significantly outweighs the environmental or economic benefits of continued cleanup.

FOSC, after consultation with the members of the Unified Command, determines that the cleanup should be terminated.

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1670 Response Technologies

1670.1 Dispersant Use

The dispersant pre-approval is designed to provide for the timely use of dispersants along with mechanical techniques and in-situ burning for offshore oil spill response. No single response method is 100% effective, thereby establishing a need to consider the use of all available methods from the start of the spill response. Initially, the assumption needs to be made that all three methods (mechanical, in-situ burn, and dispersants) may be used and then adjustments are made to that assumption as information concerning the spill is received by the Federal On-Scene Coordinator (FOSC). The objective of the Regional Response Team VI (RRT VI) FOSC Dispersant Pre-approval Guidelines and Checklist is to provide for meaningful, environmentally safe, and effective dispersant operation. The programmed checklist approach allows the FOSC to quickly arrive at a logical "GO/NO GO" decision. This gives the dispersant operation the opportunity to begin in a timely manner that is consistent with attempting to maximize the effectiveness of dispersant use as a countermeasure to reduce the impact of oil spills. In this document the RRT VI Dispersant Pre-approval Overview, the FOSC Dispersant Use Checklist and the FOSC Dispersant Use Flowchart define the dispersant pre-approval requirements. If the dispersant pre-approval requirements are not met, the request for use of dispersant must follow the approval process as specified in the RRT VI Regional Contingency Plan Subpart H Authorization. VI (RRT VI) FOSC Dispersant Pre-approval Guidelines and Checklist is to provide for meaningful, environmentally safe, and effective dispersant operation. The programmed checklist approach allows the FOSC to quickly arrive at a logical "GO/NO GO" decision. This gives the dispersant operation the opportunity to begin in a timely manner that is consistent with attempting to maximize the effectiveness of dispersant use as a countermeasure to reduce the impact of oil spills. In this document the RRT VI Dispersant Pre-approval Overview, the FOSC Dispersant Use Checklist and the FOSC Dispersant Use Flowchart define the dispersant pre-approval requirements. If the dispersant pre-approval requirements are not met, the request for use of dispersant must follow the approval process as specified in the RRT 6 Regional Contingency Plan Subpart H Authorization. The RRT VI FOSC Dispersant Pre-Approval Guidelines and Checklist are found at <http://www.glo.state.tx.us/oilspill/>

Specific information regarding the use of dispersants in the Morgan City COTP Zone can be found in Appendix D of this plan.

1670.2 In-situ Burn Approval/Monitoring/Decision Protocol

RRT VI In-Situ Burn Preapproval Guidelines are only available in hardcopy at this time. A checklist can be found at <http://www.glo.state.tx.us/oilspill/>

Specific information regarding the use of In-Situ Burn can be found in Appendix C.

1670.3 Bioremediation Approval/Monitoring/Decision Protocol

RRT 6 Position Paper on Bioremediation (Adopted January 24-25, 2001) can be found at <http://www.glo.state.tx.us/oilspill/>

Specific information regarding the use of Bioremediation can be found in Chapter 9000, Appendix Z Bioremediation Policy.

1670.4 Special Monitoring of Applied Response Technologies (SMART)

Special Monitoring of Applied Response Technologies (SMART) is a cooperatively designed monitoring program for in situ burning and dispersants. SMART relies on small, highly mobile teams that collect real-time data using portable, rugged, and easy-to-use instruments during dispersant and in situ burning operations. Data are channeled to

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the Unified Command (UC) (representatives of the spiller and the state and federal governments who are in charge of the spill response) to address critical questions:

Are particulates concentration trends at sensitive locations exceeding the level of concern?

Are dispersants effective in dispersing the oil?

Having monitoring data can assist the Unified Command with decision-making for dispersant and in situ burning operations.

The SMART program is a joint project of these agencies:

U.S. Coast Guard

NOAA

U.S. Environmental Protection Agency

Centers for Disease Control and Prevention

Bureau of Safety and Environmental Enforcement

More information regarding SMART may be found in Chapter 9000, Appendix I.

1670.5 Alternative Response Tool Evaluation System (ARTES)

During an oil spill or hazardous substance release, the OSC may consider using non-conventional alternative countermeasures (a method, device, or product that has not been typically used for spill response). To assess whether a proposed countermeasure could be a useful response tool, it is necessary to quickly collect and evaluate the available information about it.

To aid in evaluating non-conventional alternative countermeasures in particular, the Alternative Response Tool Evaluation System (ARTES) was developed. ARTES can also be used to evaluate proposed conventional countermeasures. It is designed to evaluate potential response tools on their technical merits, rather than on economic factors. ARTES is designed to work in concert with the National Contingency Plan Product Schedule and the Selection Guide for Oil Spill Applied Technologies.

For more information regarding ARTES refer to the NOAA Office of Response and Restoration Website.

1680 Statutory Guidance Federal

1680.1 Comprehensive Environmental Response, Compensation and Liability Act, 1980

Enacted by congress in 1980, it is also known as the Hazardous Substance Superfund as defined by 42 U.S.C. 9601 et seq. Its purpose is to provide for liability, compensation, cleanup, and emergency response for hazardous substances, pollutants, or contaminants (as defined by the statute) released into the environment and the cleanup of inactive hazardous waste disposal sites. Emergency and time critical actions for pollutants or contaminants may only be taken when these releases pose an imminent and substantial threat to human health or the environment. The NCP outlines factors which shall be considered in determining the appropriateness of an emergency or time-critical response action. These factors include:

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Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants, or contaminants;

Actual or potential contamination of drinking water supplies or sensitive ecosystems;

Hazardous substance, pollutant, or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release;

High levels of Hazardous substance, pollutant, or contaminants in soils largely at or near the surface, that may pose a threat of release;

Weather conditions that may cause hazardous substance, pollutant, or contaminants to migrate or be released;

Threat of fire or explosion;

The availability of other appropriate federal or state response mechanisms to respond to the release; and

Other situations or factors that may pose threats to public health or welfare of the United States or the environment.

1680.2 Federal Water Pollution Control Act as amended by the Clean Water Act and the Oil Pollution Act of 1990

As listed in 33 U.S.C. 1251 et seq., the objective of the act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. The goals of the Act include:

The elimination of pollutants discharged into navigable waters;

Attain water quality, which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and around those waters;

Prohibits the discharge of toxic pollutants;

Provides Federal financial assistance to construct publicly owned waste treatment works;

Requires States to provide waste treatment management plans;

Conducts research to develop technology in order to eliminate the discharge of pollutants into the navigable waters, waters of the contiguous zone, and oceans; and

Develop national policy for the control of non-point sources of pollution.

1680.3 National Historic Preservation Act

The National Historic Preservation Act of 1966 (Public Law 89-665) requires agencies using federal funds to identify, evaluate, and where significant, protect historic, archaeological, and traditional cultural properties. This Act also authorized the National Register of Historic Places, expanding Federal recognition to historic properties of local and State significance. The National Park Service in the DOI administers both programs. Regulations for these programs are contained in 36 CFR Part 60, National Register of Historic Places, and 36 CFR Part 65, national Historic Landmarks Program. Oil can contaminate archaeological, historic, and culturally sensitive resources. Such contamination can prevent carbon dating, damage the fragile artifacts, and make restoration and preservation

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extremely difficult or impossible. In addition, oil spill response activities (e.g., mechanical cleanup and staging area constriction) can physically disturb or destroy artifacts and sites.

The primary contact for responders seeking information and expertise on local culturally sensitive areas is the State Archeologist in the State Historic Preservation Office for the State or the Tribal Historic Preservation Officer for the affected tribal lands. It is important that responders be aware of the types of archaeological, cultural, or historic materials that they are likely to encounter while responding to an incident and that they will immediately notify the FOSC/UC in the event that these types of materials are discovered.

The Southeast Louisiana Area Committee will regularly review response strategies outlined in the GRPs to identify and revise any strategies that may adversely impact archaeological, cultural, or historic resources. These resources are protected under Federal, Tribal and State laws. In order to avoid inadvertent impacts to cultural and historic resources, the SHPO/THPO should be contacted to ascertain the presence/absence of cultural resources in an impacted area prior to initiation of cleanup activities. The SHPO/THPO can advise on appropriate cleanup strategies to avoid or minimize impacts to cultural resources; archaeological monitors may be required to accompany cleanup crews.

1680.4 Endangered Species Act

Oil spills or hazardous substance release response actions may impact species listed as “endangered” or “threatened” under the Endangered Species Act (ESA), 50 CFR Part 402.02, and in accordance with Section 7 of the ESA, Federal agencies must consult with NOAA’s National Marine Fisheries Service (NOAA Fisheries) and/or the U.S. Fish and Wildlife Service (USFWS) on activities that may affect a listed species. The FOSC is responsible for initiating consultation.

In 2001, the USCG, EPA, DOI’s Office of Environmental Policy and Compliance, USFWS, NOAA Fisheries, and the National Oceans Service (NOS) signed an Interagency Memorandum of Agreement (MOA) (<http://www.nrt.org/Production/NRT/NRTWeb.nsf/PagesByLevelCat/Level2ESAMOU?OpenDocument>) regarding Oil Spill Planning and Response Activities under the Federal Water Pollution Control Act’s National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and the ESA. In the MOA, NOAA Fisheries and USFWS determined that oil spill response activities qualify as an emergency action as defined by regulations implementing the ESA in 50 CFR Part 402.02. NOAA Fisheries and USFWS have developed emergency consultation procedures to allow action agencies to incorporate endangered species concerns into emergency response activities. Emergency consultation is initiated with a telephone call to NOAA Fisheries or USFWS to describe the emergency response and seek recommendations on any measures that could be implemented during the response to reduce or avoid impacts to listed species, the paperwork associated with emergency consultation under the ESA is completed after the removal actions are completed. NOAA Fisheries and USFWS are ready to assist the FOSC comply with section 7 of the ESA, and the NOAA SSC and DOI Regional Environmental Officer can help identify appropriate ESA section 7 consultation contacts for their respective Departments.

For Endangered Species Act Consultation Contacts:

U.S. Department of the Interior
Regional Environmental Officer
Office - (505) 563-3572
Cell - 24/7 (505) 249-2462

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National Oceanic & Atmospheric Administration
Scientific Support Coordinator
24-Hour (206) 526-4911

Please refer to Appendix H for the Southeast Louisiana Area Committee Wildlife Response Plan.

1680.5 Resource Conservation and Recovery Act

Also known as the Solid Waste Disposal Act, it was enacted by congress as 42 U.S.C. 6901 et seq. The Congress declared it to be the national policy of the United States that, whenever feasible, the generation of hazardous waste is to be reduced or eliminated as expeditiously as possible. Waste that is nevertheless generated should be treated, stored, or disposed of as to minimize the present and future threat to human health and the environment.

1680.6 National Environmental Policy Act

As defined in 42 U.S.C. 4321 et seq., the purposes of this act are:

To declare a national policy which will encourage productive and enjoyable harmony between man and his environment;

To promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man;

To enrich the understanding of the ecological systems and natural resources important to the Nation; and

To establish a Council on Environmental Quality.

1690 High-Seas Policy

Application of the Intervention on the High Seas Act (33 USC 1471 et seq.): Under authority of the International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969, governments party to the present convention may take such measures on the high seas as may be necessary to prevent, mitigate, or eliminate grave and imminent danger to their coastline or related interests from oil or hazardous substance pollution or threat of pollution. The pollution or threat of pollution may result from a maritime casualty or acts related to such a casualty, which may reasonable be expected to result in major harmful consequences. In the event of a ship outside U.S. Territorial waters which creates a potential threat of pollution by oil of hazardous substances, all available information shall be relayed to the Coast Guard which will determine whether or not grave and imminent danger to the U.S. coastline or related interests exists. Once that determination is made, the designated FOSC shall take measures to prevent, mitigate, or eliminate the threat.

1700 Reserved

1800 Reserved

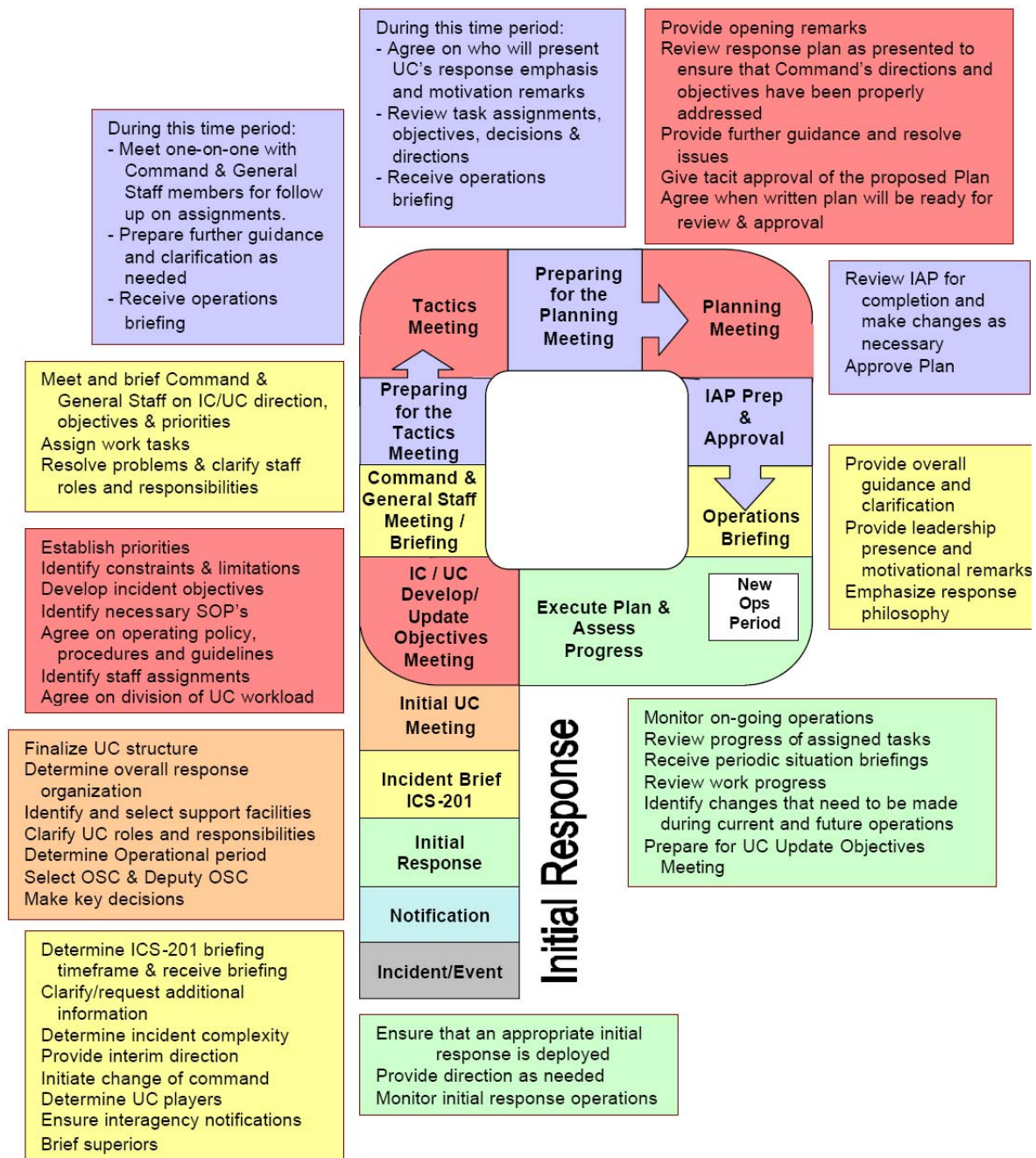
1900 Reserved for Area/District

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Operational Planning “P” For Command Activities



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2100 Unified Command

It is the policy of the Southeast Louisiana Area Committee to plan for spill incidents according to the following principles:

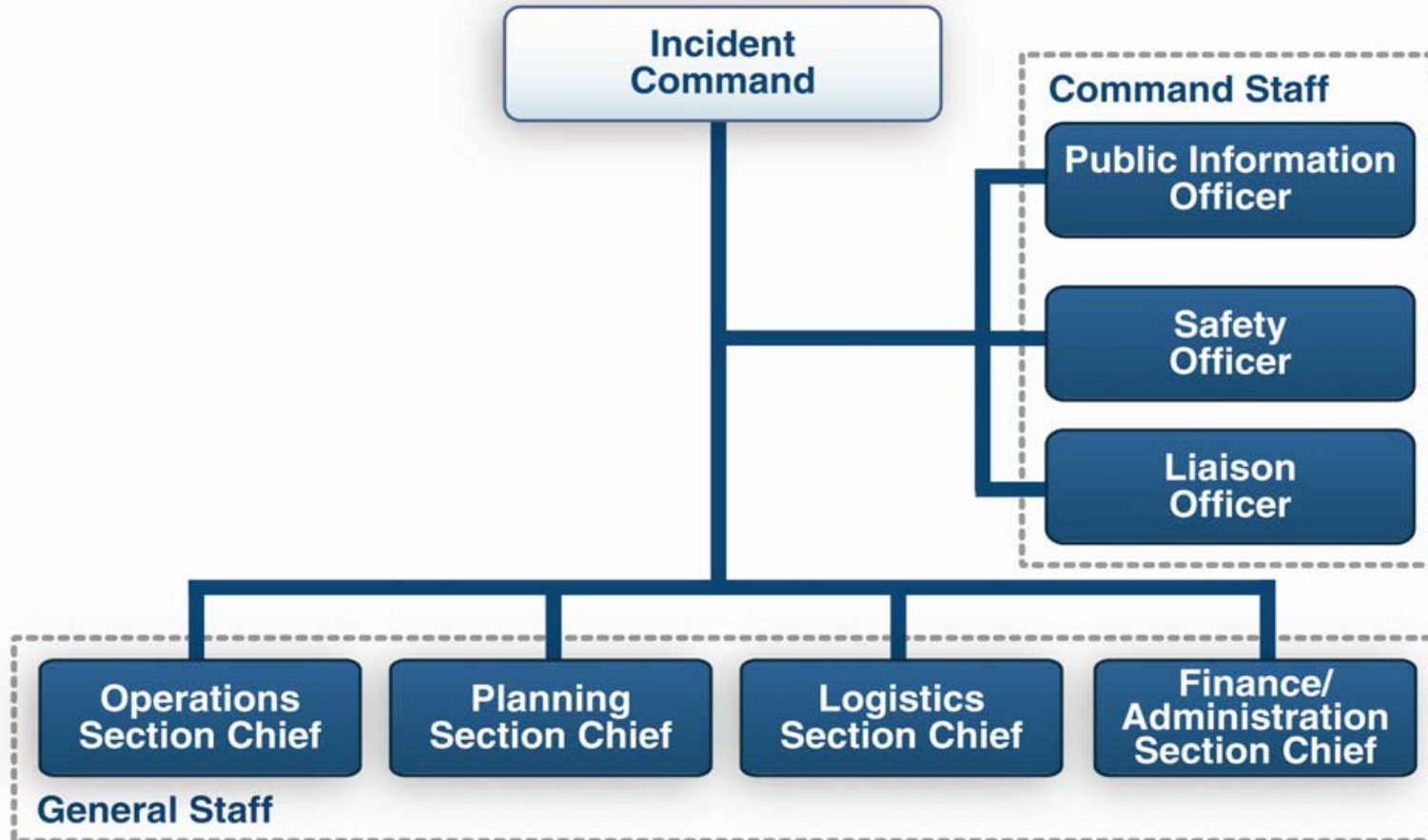
Incident Command System The signatory agencies will use the National Incident Management System (NIMS) model Incident Command System. While Vessel Response Plans, On-shore Facility Response Plans, Pipeline Response Plans, and Off-shore Facility Plans are required to have a management plan compatible with the ACP, there is no requirement for these plans to strictly follow ICS

Unified Command When federal and/or state agencies arrive on-scene to participate in managing a response action, the agencies will utilize a unified command structure to jointly manage the spill incident. In the unified command, decisions with regard to the response will be made by consensus and documented through a single Incident Action Plan (IAP) for each operational period. When a consensus cannot be reached, the FOSC has the ultimate decision-making authority.

Tribal or Local Government On-Scene Coordinators The unified command may incorporate additional tribal or local government on-scene coordinators into the command structure as appropriate.

Organizational charts for the Unified Command Staff and subordinate units are shown in figures below. They serve as examples and are not meant to be all-inclusive. The functions of the Unified Command and Command Staff must be accomplished during an incident; however, they can be performed by one individual or can be expanded, as needed, into additional organizational units with appropriate delegation of authority.

Incident Command System: Command and General Staff



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2110 Incident Commander/Unified Command

The Area Committee has adopted the NIMS based Incident Command System (ICS) as the basic model for managing a coordinated response. Under the Unified Command Structure, the Federal government, state, and responsible party will each provide an On-Scene Coordinator (OSC) or Incident Commander (IC), who will consult each other and share decision-making authority regarding spill response and clean-up management issues depending on the circumstances of the incident, a local or tribal entity may also provide an OSC. Together, these OSCs will jointly serve as the Unified Command.

Incident Commanders for oil discharges and hazardous substance releases will, whenever possible and practical be organized under the Unified Command Structure which includes, but is not limited to:

- The pre-designated Federal On-Scene Coordinator (FOSC);
- The State On-Scene Coordinator (SOSC); and
- The representative of the Responsible Party (RP).

To be considered for inclusion as a UC member, the following criteria must be met:

- The organization must have jurisdictional authority and functional responsibility under a law or ordinance for the incident;
- The organization must be specifically charged by law or ordinance with commanding, coordinating, or managing a major aspect of the incident response;
- The incident or response operations must have an impact on the organization's Area of Responsibility (AOR); and
- The organization should have the resources to support participation in the response organization.

Agencies not meeting the above criteria, but whose geographical boundaries are impacted by an incident and/or response, may provide a representative who will interface with the command structure through the Liaison Officer, the SOSC, or who may be assigned to another position in the response organization.

Actual Unified Command makeup for a specific incident will be determined on a case-by-case basis, taking into account:

- The specifics of the incident;
- Determinations outlined in the four criteria listed above; and
- Decisions reached during the initial meeting of the Unified Command.

The makeup of the Unified Command may change as the incident progresses, in order to account for changes in the situation.

The Unified Command is responsible for the overall management of the incident. The Unified Command directs incident activities including the development and implementation of strategic decisions, approval of the incident

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action plan, and approves the ordering and releasing of resources. It is expected that each Unified Command member will have the authority to make decisions and commit resources on behalf of their organization.

2110.1 Federal On-Scene Coordinator Representative

USCG MSU Morgan City maintains and manages emergency response teams for response to discharges of oil and releases of hazardous substances in the coastal zone. These teams vary in size based on the nature of the incident. In all cases, they are tasked with assessing the discharge to determine response measures, monitor and supervise pollution countermeasures, document all phases of the response, conduct investigations to determine source, cause and responsible party, initiate enforcement actions, and act for the FOSC as an on-scene representative or until their arrival.

The EPA Emergency Response Program consists of emergency response FOSCs located in the region office in Dallas, Texas, but they may respond to any location throughout the region, or throughout the country, as needed. The FOSCs are responsible for determining the source, cause, and responsible party, as well as initiating source control and enforcement actions as appropriate. Additional responsibilities include ensuring containment cleanup and disposal are carried out adequately, notification of all Natural Resource Trustees, and coordination of activities with federal, state, tribal, and local agencies. EPA also has access to technical assistance contractors who can provide technical oversight and other resources at spill and uncontrolled hazardous waste sites. In some cases, EPA's technical assistance contractor may arrive on scene prior to the FOSC. Prior to the arrival of the EPA OSC, the EPA contractor will cooperate with on-site agencies but will take direction through the EPA OSC only.

2110.2 State On-Scene Coordinator

The Louisiana Oil Spill Prevention and Response Act of 1991 has pre-designated the Louisiana Oil Spill Coordinators Office (LOSCO) of the Governor to act as the lead state agency/ State On-Scene Coordinator (SOSC) for all oil spills or threatened oil spills affecting the land, coastal waters, or any other waters of Louisiana.

For hazardous substance releases, the Louisiana Department of Public Safety serves as the SOSC.

2110.3 Local Representation to the Unified Command

When a local jurisdiction holds interest in an incident they will communicate concerns to the Unified Command via the Liaison Officer or the SOSC, or who may be assigned to another position in the response organization.

2110.4 Responsible Party

The Spiller, or responsible party, has the primary responsibility to conduct spill cleanup. This makes them a key member of a Unified Command.

2120 Area ICS Command

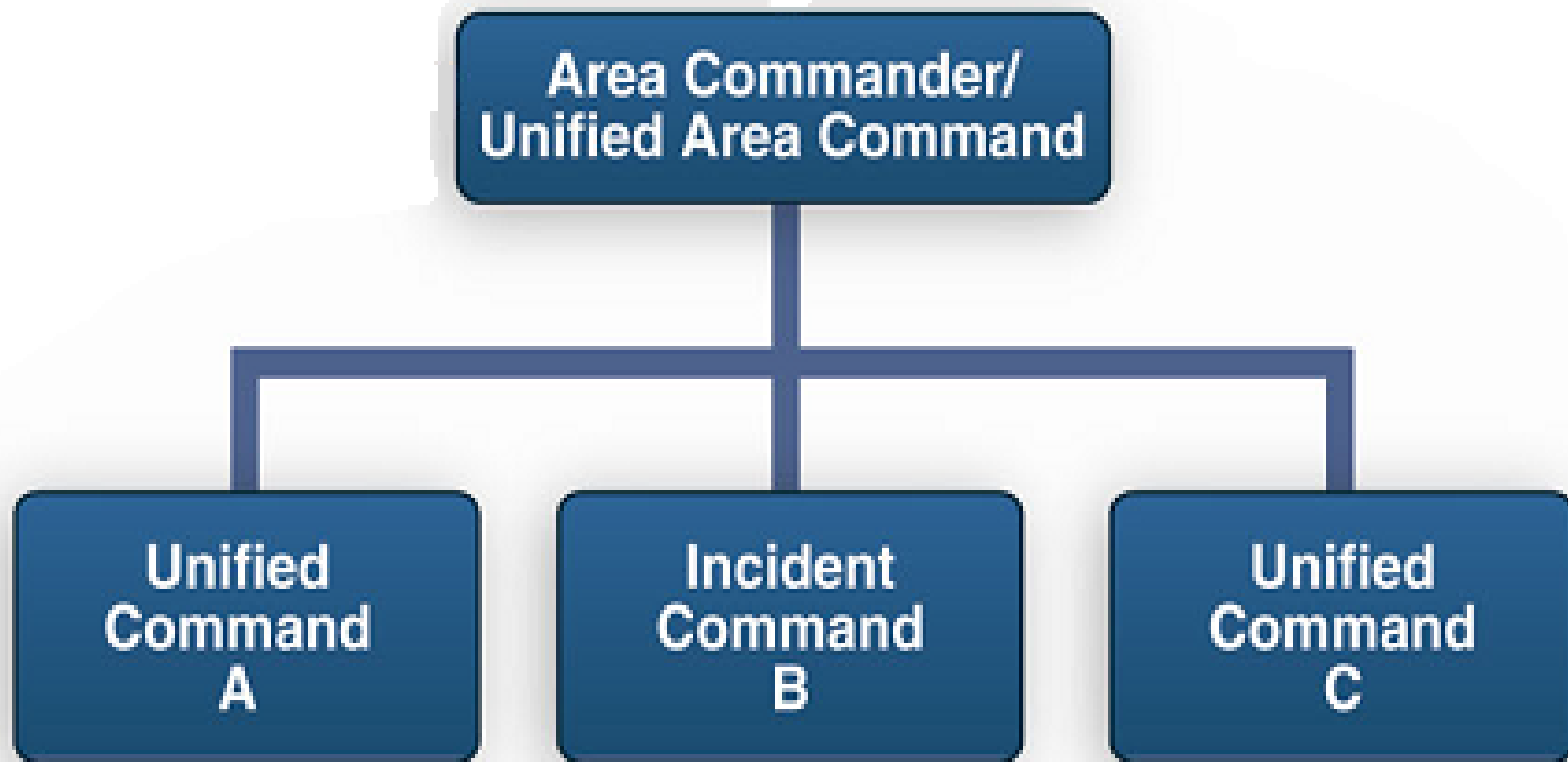
An Area Command is established when the complexity of the incident and incident management span-of-control considerations so dictate. Generally, the administrator(s) of the agency having jurisdictional responsibility for the incident makes the decision to establish an Area Command. The purpose of an Area Command is either to oversee the management of multiple incidents that are each being handled by a separate ICS organization or to oversee the management of a very large or complex incident that has multiple incident management teams engaged. This type of command is generally used when there are a number of incidents in the same area and of the same type, such as two or more oil spills. These are usually the kinds of incidents that may compete for the same resources. When incidents are of different types and/or do not have similar resource demands, they are usually handled as separate incidents or are coordinated through an EOC. If the incidents under the authority of the Area Command span multiple jurisdictions, a Unified Area Command should be established. This allows each jurisdiction involved to have appropriate representation in the Area Command.

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The structure of the Area Command follows standard ICS organization except there is no operations section. An example is provided on the next page.

Area Command



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2130 General Response Priorities

The four general response priorities of the NCP (40 CFR Part 300.317), and this ACP are as follows:

- To give safety and human health top priority during every response action;
- To stabilize the situation in order to prevent the event from worsening;
- To use all necessary containment and removal tactics in a coordinated manner to ensure timely, effective response; and
- To take action to minimize further environmental impact from environmental discharges.

2140 Area Specific Response Objectives

The following are example objectives applicable to this plan; they can be used as is or modified in response specific risk applications. Objectives need to be specific, measurable, achievable, reasonable, and time-specific to be effective. Also, incident specific objectives may be needed that are not represented in the below examples.

Safety

Provide for the safety and welfare of citizens and response personnel

Provide for the safety and security of responders as well as maximize the protection of the public health and welfare

Identify safety and risk management factors and monitor for compliance for both the public and responders

Implement practices that allow for the safety and welfare of vessel passengers and non-essential crew

Conduct Operational Risk Assessment and ensure controls are in place to protect the responders and the public

Fire/Salvage

Assess damage/stability; develop and implement a salvage plan

Implement the salvage and tow plan

Extinguish fire

Stabilize and salvage vessel(s)

Waterways Management

Conduct port assessment and establish priorities to facilitate commerce

Develop/implement transit plan to include final destination/berth(s) for vessels

Identify safe refuge/berth for impacted vessels.

Oil/Haz Substance

Initial action to control the source and minimize the volume discharges/released

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Determine oil/haz substance fate and effect (trajectories)

Identify sensitive areas, develop strategies for protection and conduct pre-impact shoreline debris removal

Conduct an assessment and initiate shoreline cleanup efforts

Remove product from impacted area

Contain, cleanup, recover, and dispose of spilled product(s)

Environmental

Protect environmentally sensitive areas including wildlife and non-environmental properties

Identify threatened species and recover and rehabilitate injured wildlife

Examine efficacy and, if appropriate, utilize alternative technologies to support response effort

Management

Manage a coordinated interagency response effort

Establish an appropriate Incident Management Team organization that can effectively meet the initial and long term challenges required to mitigate the incident

Identify all appropriate agency/organization mandates, practices, and protocols for inclusion in the overall response effort

Identify and minimize social, political, and economical adverse effects

Implement a coordinated response with other response agencies

Evaluate all planned actions to determine potential impacts to social, political, and economic entities

Identify competing response activities (SAR and Pollution mitigation) to ensure that they are closely coordinated

Identify and establish incident support facilities to support interagency response efforts

Keep the public, stakeholders, and the media informed of response activities

Ensure appropriate financial accounting practices are established and adhered to

Establish internal/external resource ordering procedures are established and adhered to

Establish an incident document system

Establish an appropriate structure to facilities communications with stakeholders and agency/organization coordination facilities

2150 ICS Position Specific Job Aids

Available ICS position specific job aids can be found in Chapter 9000, Appendix V.

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2200 Safety Officer

All spill response activities pose varying dangers to responders. The priority of any response activity is to protect the health and safety of the responders and the public. To do this, the chemical and physical hazards associated with each operation must be assessed, and methods implemented to eliminate or reduce those hazards. The Safety Officer (SOFR) function is to develop and recommend measures for assuring personnel safety and to assess and/or anticipate hazardous and unsafe situations from compounding the incident.

Chapter 9000 Appendix K contains the Southeast Louisiana Area Committee Health and Safety Policy.

Information regarding Incident Volunteers and minimum OSHA training can be found in Chapter 9000, Appendix L Southeast Louisiana Area Committee Volunteer Plan.

The SOFR may have assistants, as necessary, and the assistants may also represent assisting agencies or jurisdictions. Safety assistants may have specific responsibilities, such as air operations, hazardous materials, etc.

2300 Information Officer

The Information Officer (PIO) is responsible for developing and releasing information, with Unified Command's approval, about the incident to the news media, to incident personnel, and to other appropriate agencies and organizations in as timely a manner as possible. The PIO will obtain information from technical experts to provide to the press and other interested parties. The PIO is also responsible for controlling direct media access to staff within the Unified Command structure.

Chapter 9000, Appendix M contains the Southeast Louisiana Area Committee Joint Information Center Manual, including a list and contact information for area media outlets.

Keeping the public and other interested parties informed is always a primary incident objective. Staff members responsible for meeting this objective ensure the community is well informed of the status of the incident, the decisions made and actions taken by the Unified Command. The ultimate purpose of public information efforts conducted during an environmental emergency is to ensure the public is well informed by issuing timely, credible, and coordinated releases of accurate information to the news media, government officials, and the public. Information may come from flyover or other video coverage, phone calls, on-site interviews, web site posting, public meetings, or other methods.

The Southeast Louisiana Area Committee prefers that the spiller not fill the PIO position. This applies to both government agency and private industry spillers. However, the Southeast Louisiana Area Committee recognizes that a Unified Command holds the discretion to fill the position with whomever it chooses. The Unified Command should consider credibility with the media and public, as well as previous experience in drills or spill, familiarity with the Southeast Louisiana plan tools and policies with emergency support functions (ESF) #15. Upon concurrence of the Unified Command, the spiller may fill the PIO position. The Southeast Louisiana Area Committee also encourage responsible parties to designate an Assistant Information Officer, who will participate in all the meetings attended by and briefings made by the PIO.

2310 Pre-JIC Initial Public Information Officer

When an incident occurs, there is a high demand for information. Public perception is often shaped by impressions formed in the first few hours of a response. It is critical that timely, accurate information be disseminated to media in a coordinated fashion.

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When a state environmental or emergency management agency, the Coast Guard, or other applicable agency first learns about a spill, the respective public information officer should quickly contact one another to share information in an effort to release a joint statement to the media. Initial media releases should be approved by the FOSC or his/her designated representative and the SOSC prior to release.

Until a Joint Information Center (JIC) is established, communication with the media and other key audiences is carried out by a lead agency's information office, either remotely or on-site. This Initial PIO carries out activities with or without assistance. The time needed to travel to the command post and have basic JIC operations in place will affect decisions about how and by whom communications are conducted. For example, issuing the initial press release within a couple of hours of notification may require the facts be provided over the phone or electronically to an agency PIO operating from the office or a remote location.

The initial PIO is concerned with both communications (who to communicate with, both media and public, and logistics (how to communicate), if operating from the command post or remote locations. Initial media releases should be approved by the FOSC and SOSC or their delegates prior to release. This may entail sending the text by email, fax or by reading the text over the phone.

In order to build trust with the public and among agencies that are responding to the incident, every press release should include a "cooperative response statement". This statement should include, by name, all the primary participating agencies who are responding to the spill.

The volume of material spilled is an important piece of information that the public and media are generally interested in during the early hours of an incident. Unless responding agencies have accurate information regarding the volume spilled, (and this is rarely the case during initial response) that has been approved through the Unified Command for release, initial press releases should not release a spill volume estimate and should instead state that this information is yet to be determined. If the Unified Command agrees, the worst case discharge scenario for the spill (total tank capacity, worst case discharge flow rates, etc.) may be released with an explanation of how this was calculated. The following are U.S. Coast Guard Public Information Officers available in the Southeast Louisiana area.

- MSU Morgan City Duty PIO (985) 380-5342
- District 8 External Affairs (504) 671-2020
- Public Information Assist Team (252) 331-6000

U. S. Coast Guard PIOs shall always refer to the most recent District 8 Public Affairs Guidance for release authorities and information.

2400 Liaison Officer

Incidents that are multi-jurisdiction, or have several agencies involved, may require the establishment of the Liaison Officer (LNO) position on the Command Staff. The LNO may have assistants as necessary.

Keeping the public and other interested parties informed is a primary incident objective. Staff members responsible for meeting this objective ensure that elected officials and stakeholders are well informed of the status of the incident, the decisions made and actions taken by the Unified Command. The ultimate purpose of public information efforts conducted during an environmental emergency is to ensure the public is well

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informed by issuing timely, credible, and coordinated releases of accurate information to the news media, government officials, and the public.

The Southeast Louisiana Area Committee recognizes there is a shared responsibility among the Unified Command representatives to ensure accurate and credible information is made available. It is also the shared role of the Unified Command representatives to ensure appropriate staffing in all positions within the Incident Management System. This position is particularly important within the Southeast Louisiana Area Committee response AOR given the public safety authority of the Parishes and the multijurisdictional nature of river and coastal spills in Louisiana. Given the importance of the Liaison Officer duties, and to ensure public confidence and trust, it is the policy of the Southeast Louisiana Area Committee for the LNO position to be filled by a qualified representative of a federal, state, tribal, or local agency, if available. If no such agency representative is initially available, qualified, or willing to be the LNO, a responsible party representative may, upon the Unified Command's concurrence, fill the role.

Furthermore, a transition to a responsible party designated LNO may occur with the concurrence of the Unified Command. The Southeast Louisiana Area Committee also encourage responsible parties to designate an Assistant LNO, who will participate in all the meetings attended by and briefings made by the LNO.

A list of contacts for Federal, State, and Local Trustees can be found in Chapter 9000.

A list of areas of interest can be found in Chapter 9000, Appendix Y Sensitive Site Index.

2410 Natural Resource Damage Assessment

Natural Resource Damage Assessment (NRDA) is outside the sphere of most emergency spill response actions. NRDA activities generally do not occur within the structure, processes, and control of the Incident Command System. However, particularly in the early phase of a spill response, many NRDA activities overlap with environmental assessments performed for the sake of spill response. Because spill response and NRDA activities might be performed in the same location, NRDA staff should remain coordinated with the spill response organization, and need to work with the LNO to coordinate with the Unified Command, Environmental Unit, Wildlife Rescue/Rehabilitation Branch, and the Scientific Support Coordinator to resolve any problems or address areas of overlap. While NRDA resource requirements and cost fall outside the responsibility of the Logistics and Finance sections, coordination is again important.

2420 Incident Investigation

Investigators from Federal and state agencies will not normally be a part of the Unified Command. While personnel may report to individuals that are part of the Unified Command in their day-to-day chain of command, the investigators should be separate so as not to introduce polarized forces into the Unified Command system. Coordination with Unified Command may be done through the Liaison Officer.

2430 Multiagency Coordination System

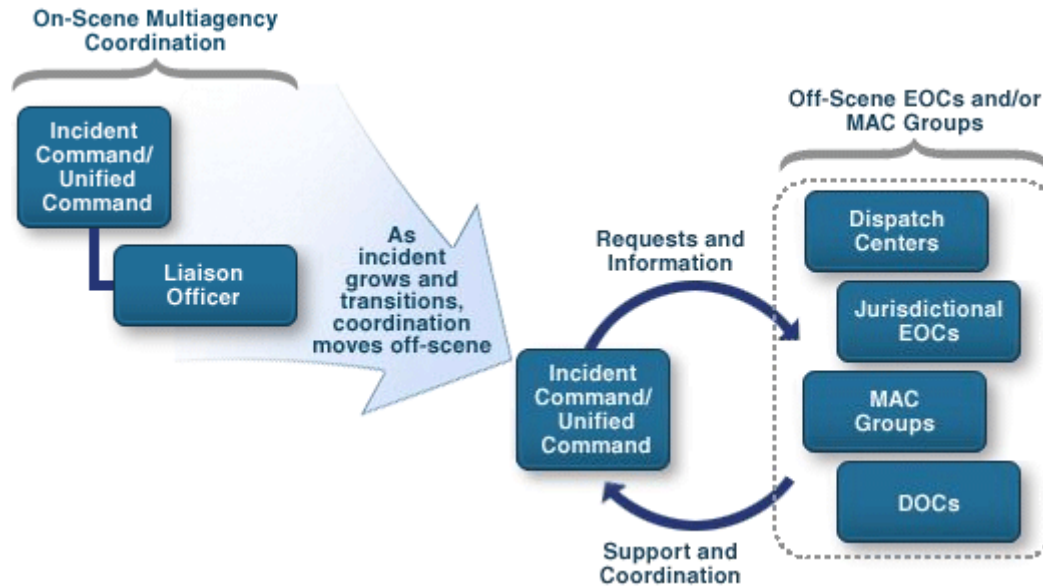
Multiagency coordination is a *process* that allows all levels of government and all disciplines to work together more efficiently and effectively. Multiagency coordination occurs across the different disciplines involved in incident management, across jurisdictional lines, or across levels of government. Multiagency coordination can and does occur on a regular basis whenever personnel from different agencies interact in such activities as preparedness, prevention, response, recovery, and mitigation.

Often, cooperating agencies develop a Multiagency Coordination System (MACS) to better define how they will work together and to work together more efficiently; however, multiagency coordination can take place without established protocols. MACS may be put in motion regardless of the location, personnel titles, or organizational structure.

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Initially the Incident Command/Unified Command and the Liaison Officer may be able to provide all needed multiagency coordination at the scene. However, as the incident grows in size and complexity, off-site support and coordination may be required.



Integral elements of MACS are dispatch procedures and protocols, the incident command structure, and the coordination and support activities taking place within an activated Emergency Operations Center. Fundamentally, MACS provide support, coordination, and assistance with policy-level decisions to the ICS structure managing an incident.

More information on [MACS](#) can be found on the FEMA NIMS website.

2500 Federal Agencies and Teams

2510 EPA Environmental Response Team

The EPA has three Environmental Response Teams stationed around the country (Edison, NJ, Cincinnati, OH, and Las Vegas, NV) which provide EPA regional and Headquarters Offices, the U.S. Coast Guard, other local, State, and Federal agencies, and foreign governments with technical assistance in responding to environmental emergencies such as spills of oil and hazardous substances and in assessing and cleaning up hazardous waste sites. The ERT, mandated as one of the Special Teams under the NCP, functions in an advisory capacity to OSCs and other Federal, State, and local officials concerned with spills and hazardous waste sites.

The ERT is also utilized in recommending remedial actions for immediate and long-term activities at oil spill sites and for designing and implementing plans for monitoring air, water, and sensitive habitats. The ERT maintains an around-the-clock emergency response activation system for responding to environmental emergencies and uncontrolled oil and hazardous waste sites, consulting on water and air quality criteria, health and safety protocols, ecological risk assessment, interpretation and evaluation of analytical data, and engineering and scientific studies, and developing and implementing site specific safety programs.

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The ERT also provides specialized equipment to meet specific site requirements for monitoring, analytical support, waste treatment, and containment and control, and develops technical manuals, policies and Standard Operating Procedures (SOPs) for specialized equipment, computer systems, and analytical process. The ERT assists in the development of innovative technologies for use at environmental emergencies and uncontrolled hazardous waste sites, and trains Federal, State, and local government officials and private industry representatives in the latest oil and hazardous substance response technology.

For more information visit: <http://www.ert.org/>

2510.1 EPA Radiological Emergency Response Teams

The EPA has two Radiological Emergency Response Teams (RERT); one based in Las Vegas, NV and one in Montgomery, AL. The RERT responds to emergencies involving releases of radioactive materials. Working closely with EPA's Superfund program as well as federal, state, and local agencies, the RERT responds to emergencies that can range from accidents at nuclear power plants, to transportation accidents involving shipments of radioactive materials, to deliberate acts of nuclear terrorism.

For more information visit: <http://www.epa.gov/radiation/rert/rert/html>.

2520 U.S. Department of Health and Human Services

The U.S. Department of Health and Human Services (HHS), through the Agency for Toxic Substance and Disease Registry (ATSDR), serves the public by using the best science, taking responsive public health actions, and providing trusted health information to prevent harmful exposures and disease related to toxic substances. The ATSDR is directed by congressional mandate to perform specific functions concerning the effects on public health of hazardous substances in the environment. These functions include public health assessments waste sites, health consultations concerning specific hazardous substances, health surveillance and registries, response to emergency release of hazardous substances, applied research in support of public health assessments, information development and dissemination, and education and training concerning hazardous substances.

For more information visit: <http://www.atsdr.cdc.gov/atsdrhome.html>

2530 The National Institute for Occupational Safety and Health (NIOSH)

NIOSH provides national and world leadership to prevent work-related illness, injury, disability, and death by gathering information, conducting scientific research, and translating the knowledge gained into products and services, including scientific information products, training videos, and recommendations for improving safety and health in the workplace.

In response to requests from workers (or their representatives), employers, and other government agencies, NIOSH Health Hazard Evaluation scientists conduct workplace assessments to determine if workers are exposed to hazardous materials or harmful conditions and whether these exposures are affecting worker health. NIOSH evaluates the workplace environment and health of employees by reviewing records and conduction on-site environmental sampling, epidemiologic surveys, and medical testing.

2540 U.S. Department of Agriculture

The U.S Department of Agriculture (USDA) has scientific and technical capability to measure, evaluate, and monitor, either on the ground or by use of aircraft, situations where natural resources including soil, water, wildlife, and vegetation have been impacted by hazardous substances and other natural or man-made emergencies. The USDA may be contacted through the U.S. Forest Service emergency staff officers who

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are the designated members of the RRT. Other Agencies within the USDA that have relevant capabilities and expertise are:

The U.S. Forest Service;

The Agriculture Research Service (ARS);

The Animal and Plant Health Inspection Service (APHIS); and

The Food Safety and Inspection Service (FSIS).

Details on the capabilities and expertise for the above agencies are outlined in the NCP (40 CFR Part 300.175(b)(6)).

2550 U.S. Department of Commerce

The U.S. Department of Commerce (DOC), through the National Oceanic and Atmospheric Administration (NOAA) provides scientific support for response and contingency planning in coastal and marine areas, including assessments of the hazards that may be involved, predictions of movement and dispersion of oil and hazardous substances through trajectory modeling, and information on the sensitivity of coastal environments to oil and hazardous substances. In addition, NOAA provides expertise on living marine resources and their habitats, including endangered species, marine mammals, and National Marine Sanctuaries.

2560 U.S. Department of Defense

The U.S. Department of Defense (DOD) has responsibility to take all action necessary with respect to releases where either the release is on, or the sole source of the release is from, a facility or vessel under DOD jurisdiction, custody, or control. The DOD may also provide, consistent with its operational requirements and upon request of the OSC, locally deployed Navy oil spill equipment and assistance to other federal agencies.

2560.1 U.S. Navy/ SUPSALV

The U.S. Navy (USN) provides expertise in ship salvage, shipboard damage control and diving. The USN has an array of specialized equipment and personnel that can be used for collection, containment, and removal of oil and hazardous substances. Mandated as one of the special teams under the NCP, the U.S. Navy Supervisor of Salvage (SUPSALV) provides an extensive salvage/search and recovery equipment inventory as well as specialized containment, collection, and removal equipment specifically designed for salvage related and open-sea pollution incidents, with the requisite knowledge and expertise to support such operations.

2560.2 U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (USACE) provides expertise in specialized equipment and personnel for managing navigation channels, removing navigation obstructions, and maintaining hydroelectric facilities. USACE oversees the permitting of moorage sites for response vessels. USACE can also provide design services, perform construction, and provide contract writing and contract administration services for other federal agencies.

2570 U.S. Department of Energy

The U.S. Department of Energy (DOE) has responsibility to take all action necessary with respect to releases where either the release is on, or the sole source of the release is from any facility or vessel under DOE jurisdiction. DOE also provides advice and assistance to other OSCs for emergency actions essential

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for the control of immediate radiological hazards. Incidents that qualify for DOE radiological advice are those believed to involve source, by-products, or specialized nuclear material or other ionizing radiation sources, including radium, and other naturally occurring radionuclides, as well as particle accelerators. Assistance is available through direct contact with the DOE Radiological Assistance Program regional office.

2580 U.S. Department of Homeland Security

2580.1 Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) provides advice and assistance to the OSC on coordinating civil emergency planning and mitigation efforts to other federal agencies, state, and local governments, and the private sector. FEMA's Mobile Emergency Response System (MERS) also provides extensive rapid deployment mobile communications capabilities for use in oil/ hazardous substance response on a no-to-interfere basis with other emergent situations. An MOU is being developed with FEMA's MERS to specify the level and type of support available in a response. In the event of a major disaster declaration or emergency determination by the President, FEMA will coordinate all federal disaster or emergency action with the FOSC.

2580.2 U.S. Coast Guard

The U. S. Coast Guard (USCG) is a military, multi-mission, maritime services and one of the nation's five Armed Services. As such, the Coast Guard protects vital interests of the United States, the personal safety and security of our population; our natural and economic resources; and the territorial integrity of our nation from both internal and external threats, natural and man-made. The USCG protects these interests in America's ports and inland waterways, along the coasts, on international waters, or in any other maritime region where U.S. interests may be at risk.

In partnership with other federal agencies, state and local governments, marine industries, and individual mariners, the USCG preserves safety at sea through a focused program of prevention, preparedness, and response. The USCG actively protects sensitive marine habitats, marine mammals, and endangered marine species, and enforces laws protecting U.S. waters from the discharge of oil and other hazardous substances. It conducts a wide range of activities, education and preventions, enforcement, response and containment, and recovery in support of our primary environmental protection mission areas: maritime pollution enforcement, offshore lightering zone enforcement, domestic fisheries enforcement, and foreign vessel inspection. The USCG also provides mission critical command and control support and usually is the first responding forces to environmental disasters in the coastal maritime area. In addition the USCG is typically the lead agency for any maritime response effort. Under the NCP the USCG Captains of the Port (COTP) are the pre-designated Federal On-Scene Coordinator (FOSC) for the Coastal Zone. USCG Eight District Officer is the RRT Co-Chair for Regions IV and VI.

2580.2.1 USCG National Strike Force

The National Strike Force's (NSF) mission is to provide highly trained, experienced personnel and specialized equipment to Coast Guard and other federal agencies to facilitate preparedness and response to oil and hazardous substance pollution incidents in order to protect public health and the environment. The NSF's area of responsibility covers all Coast Guard Districts and Federal Response Regions.

The National Strike Force totals over 200 active duty, civilian, reserve and auxiliary personnel and included the Nation Strike Force Coordination Center (NSFCC); the Atlantic Strike Team, Fort Dix, NJ; the Gulf Strike Team, Mobile, AL; the Pacific Strike Team, Novato, Ca; and the Public Information Assist Team (PIAT) located at the NSFCC. The NSF is one of the available Special Teams mandated under the NCP to provide assistance to OCSs.

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2580.2.2 USCG Incident Management Assist Teams

The Incident Management Assist Teams (IMAT) were developed by the USCG to supply a ready-made team of Incident Command System, highly trained individuals to assist the local Incident Commander in dealing with a major incident. There are four IMATs, two on the east coast and two on the west coast accessed through the two USCG Areas. They are trained for initial quick response to a regional or nationally significant event. The team consists of ICS process experts that can quickly set up and develop the incident from the initial response to the ICS proactive operational planning process. Each IMAT has a limited amount of equipment that they can bring with them to set up the initial ICS process at the Incident Command Post (ICP).

2590 U.S. Department of Interior

The U.S. Department of Interior (DOI) has jurisdiction over the National Park System, National Wildlife Refuges, fish hatcheries, and public lands. The Regional Environmental Officer (REO) manages the department's response programs for oil and hazardous materials spills and oversees the department's responsibilities as a trustee for natural resources. Trustee responsibilities include devising and carrying a plan for restoration, rehabilitation, or acquisition of equivalent natural resources and to carry out damage assessments. The DOI may become involved in spill response once contacted through the REOs who are designated members of the RRT. In addition, bureaus and offices of the DOI that possess relevant capabilities and/or expertise are:

United States Fish and Wildlife Service (USFWS)

United States Geological Survey (USGS)

Bureau of Land Management (BLM)

Bureau of Safety and Environmental Enforcement (BSEE)

National Park Service

Bureau of Reclamation

Office of Surface Mining, Reclamation and Enforcement

Bureau of Ocean Energy Management

Bureau of Indian Affairs

Details on the capabilities and expertise for the above agencies are outlined in the NCP (40 CFR Part 300.175).

2590 U.S. Department of Justice

The U.S. Department of Justice (DOJ) can provide expert legal advice on complicated legal questions arising from discharges or releases and federal agency responses. The DOJ represents the federal government, including its agencies, in litigation relating to discharges.

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25100 U.S. Department of Labor

The U.S. Department of Labor, through the Occupational Safety and Health Administration (OSHA) provides advice and assistance to National Response Team (NRT)/RRT agencies as well as to the OSC regarding hazards to person engaged in response activities. Technical assistance may include review of safety plans and work practices, and help with other compliance questions. OSHA may also take any other action necessary to ensure that employees are properly protected at response activities. Questions about occupational safety and health at these sites should be referred to the appropriate OSHA regional office.

25200 U.S. Department of Transportation

The U.S. Department of Transportation (DOT) provides response expertise pertaining to transportation of oil of hazardous substances by all modes of transport.

25300 State Resources/Agencies

The following information regarding the resources/agencies of the state of Louisiana has been taken from the Louisiana Oil Spill Contingency Plan. The responsibilities of the listed agencies are as stated in that plan.

25300.1 The Louisiana Oil Spill Coordinator

The Louisiana Oil Spill Coordinator (LOSC) Office of the Governor, in consultation with the Louisiana Department of Environmental Quality (LDEQ), is authorized to administer the Louisiana Oil Spill Prevention and Response Act and direct all state discharge response and cleanup operations resulting from unauthorized or threatened discharges of oil, affecting or potentially affecting the land, coastal waters, or any other waters of Louisiana, as directed by the Governor or upon a declaration of emergency as declared by the Governor.

It is the responsibility of the LOSC to ensure that all Louisiana state agencies are carrying out their legislated mandates in a coordinated fashion without duplication. It is the LOSC's responsibility to see that all agencies, local, state, and parish as well as interested parties, e.g. the responsible parties have a single point of reference with respect to the state's response efforts. The LOSC may appoint a state designated on-scene coordinator to act in their absence.

25300.2 Louisiana Department of Environmental Quality

The LDEQ, under the direction of the LOSC, is the lead technical agency of the state of Louisiana for response to actual or threatened discharges of oil and for cleanup of pollution from unauthorized discharges of oil. The LDEQ is the primary state agency in regards to environmental policies and regulations. The LDEQ responds to all reported unauthorized discharges, emissions, or other releases to the water, air, and soil with the intent of providing protection of these natural resources to maintain a healthful environment for the citizens of the State. Specific response activities of the LDEQ relative to the Louisiana OSPRA may vary according to the size, extent, and composition of a spill, and the degree of involvement of responsible party, local, state, and federal agencies. The LDEQ has trained all response personnel to the 40-hour Hazardous Waste Operations and Management level for activities relative to oil and hazardous substance releases. In addition to spill response duties, the LDEQ personnel review industry spill prevention and control plans, assist in oil and hazardous substance spill drills, and inspect permitted facilities for compliance with applicable rules and regulations pursuant to the Louisiana Environmental Quality Act. The following are LDEQ duties relative to this plan:

Maintain a notification system for receipt of information on anticipated and actual unauthorized discharges;

Activate spill response procedures as necessary, including secondary notification;

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Act as the Louisiana State On-Scene Coordinator in lieu of the LOSC;

Determine the nature, extent, and location of the spill;

Seek to locate the source and cause of the spill and to identify the responsible party;

Track and predict spill movement;

Evaluate the environmental implications of the spill and identify priority areas for protection and cleanup in consultation with other State, Federal, and local agencies;

Provide technical assistance to local emergency responders and advise on necessary protective actions;

Provide logistical support to other State, Federal and local agencies to the extent that resources allow;

Advise industry to ensure the cleanup is conducted appropriately;

Collect and analyze air, water, soil, vegetation and/or tissue samples for assessing environmental damage and pursuing enforcement actions;

Monitor adequacy of response;

Document aspects of the incident and subsequent response activities of involved parties;

Act as a State Natural Resource Trustee for the protection of the designated resources of surface waters, ground waters, air, and soil within the jurisdictional boundaries of Louisiana;

Provide liaison with Federal, State, and local agencies, adjacent countries, the private sector, and the public as appropriate;

Participate in the formulation of contingency plans for the preparedness of given local, State, or Federal agencies or regulated entity to abate impacts due to a spill; and

Participate in spill drills for the purpose of assisting in the evaluation of adequacy of a given contingency plan.

25300.3 Louisiana Department of Wildlife and Fisheries

The Louisiana Department of Wildlife and Fisheries (LDWF) is responsible for the control, supervision, management, protection, and conservation of wildlife of the state, including all aquatic life; control over the beds and bottoms of certain water bodies; and control, protection, management of certain land owned or managed by LDFW. The following are LDFW duties relative to this plan:

Serve as joint public trustee, designated by the Governor, for natural resources under the Oil Pollution Act of 1990;

Assess damages to natural resources under LDWF's trusteeship following an oil spill;

Work with the SOSOC in response to unauthorized or threatened discharge of oil affecting or potentially affecting the land, coastal waters, or any other waters of Louisiana;

Serve on the interagency council chaired by the LOSC;

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Recommend provisions of the state oil spill contingency plan relative to the protection, rescue, and rehabilitation of aquatic life and wildlife and appropriate habitats on which they depend;

Cooperate with the LOSC in establishing procedures for the oil spill contingency plan for the assessment of natural resource damages and plans for mitigation of damage to and restoration, protection, rehabilitation, or replacement of damaged natural resources;

Prohibit, through commission action, the discharge of petroleum wastes into any waters off the coastline of Louisiana and extending there from three miles or more into the Gulf of Mexico to prevent damage to the aquatic life in the waters of the state;

Maintain general, overall control, supervision, conservation, protection, and management authority over wildlife of the state, including all aquatic life;

Participate in wetland conservation and coastal area management, restoration, and protection;

Manage and protect public wildlife lands and natural areas and habitats, including water bottoms and river basins;

Manage, regulate, and enforce the taking of wildlife resources;

Conduct research and permit the conduct of research regarding fishery and wildlife resources;

Advise/regulate water pollution and habitat destruction;

Participate in the development of the State's natural resources, including operating fish hatcheries;

Monitor collisions, accidents, or other casualties involving vessels;

Conserve resident, threatened, and endangered species of wildlife, and prohibit the taking of any threatened or endangered species in the state; and

Review and comment to the LDEQ regarding environmental impact statements relative to fish and wildlife resources or their habitat.

25300.4 Louisiana Department of Natural Resources, Office of Coastal Restoration and Management

The Louisiana Department of Natural Resources/Office of Coastal Restoration and Management (LDNR/OCR&M) is the agency responsible for the implementation of the Coastal Vegetated Wetlands Conservation and Restoration Plan for the State of Louisiana. The OCR&M is mandated to develop and implement policies, plans, and programs to encourage multiple uses of the Louisiana coastal area and to achieve a proper balance between development and conservation, restoration, creation, and nourishment of renewable coastal resources. The LDNR/OCR&M has the primary authority over those activities occurring on and uses of lands and waters within the boundaries of the state of Louisiana. The LDNR/OCR&M also has the authority to review, for consistency with the Louisiana Coastal Resource Program, those direct and indirect federal actions, and those actions licensed and/or permitted by federal agencies, both outside and within the Coastal Zone, which may significantly affect coastal resources/waters within the Coastal Zone.

The Coastal Management Division of the OCR&M is mandated to protect, develop, and where feasible, restore or enhance the resources of the state's coastal area; to develop and implement a coastal resources

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management program which is based on considerations of resources, the environment, the needs of the residents of the state, the nation, and of state and local government; and to enhance opportunities for the use and enjoyment of the recreational values of the coastal area.

The Coastal Restoration Division of the OCR&M is mandated to establish and monitor projects within the coastal area boundary that conserve, enhance, restore, and create coastal vegetated wetlands in accordance with the Coastal Vegetated Wetlands Conservation and Restoration Plan.

The following are LDNR/OCR&M duties relative to this plan:

Act, in cooperation with the LOSC, as the lead state agency within LDNR in recommending provisions of the State Oil Spill Contingency Plan providing for protection and rehabilitation of appropriate resources under its jurisdiction;

Participate in the State's Interagency Council established by the OSPRA;

Cooperate in the establishment of procedures for assessment of natural resource damages and plans for mitigation of damage to and restoration, protection, rehabilitation, or replacement of damaged natural resources;

Assist other responding agencies by providing expertise, knowledge, and information about critical areas; resources, and best alternative cleanup methods;

Provide logistical assistance of equipment and personnel to support the response, damage assessment, and restoration operation and ensure the protection of resources;

Issue and enforce state permits in the coastal area in accordance with established guidelines in connection with:

Levee construction,

Linear facilities,

Dredged spoil deposition,

Shoreline modification,

Surface alterations,

Hydrological and sediment transport modifications,

Disposal of waste,

Alterations of waters draining into coastal waters,

Oil, gas, and other mineral activities, and

Avoiding adverse impacts to the coastal area for any activity.

Require effective environmental protection and emergency or contingency plans be developed and complied with for all mineral operations;

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Require that the use of dispersants, emulsifiers, and other similar chemical agents on oil spill be prohibited without prior approval of the FOSC;

Provide consistency reviews for any direct federal actions or permitted licensed, or funded federal actions carried out by other persons;

Ensure that any governmental body undertaking, conducting, to supporting activities directly affecting the Louisiana coastal area shall make certain that such activities shall be consistent with the Louisiana Coastal Management Program and any affected approved local coastal management program having geographical jurisdiction over the action;

Notify the appropriate representative of any parish that has an authorized local program in the event of an emergency brought about by natural or man-made causes that would result in hazard to life, loss of property, or damage to the environment if immediate actions were not taken;

Issue emergency authorization for uses necessary to correct emergency situations brought about by natural or man-made causes that would result in hazard to life, loss of property, or damage to the environment if immediate actions were not taken;

Receive all monies appropriated from the Wetlands Conservation and Restoration Fund and shall implement all programs and projects in the Coastal Vegetated Wetlands Conservation and Restoration Plan;

Develop procedures to evaluate new and improved coastal restoration and preservation technologies; and

Operate and maintain structural projects.

25300.5 Louisiana Department of Health and Hospitals

The Department of Health and Hospitals (LDHH) directs and coordinates the state's emergency medical and health services. The authority of LDHH is found in the Sanitary Code of the state of Louisiana. The following are LDHH duties relative to this plan:

Evaluate incident implication for public health;

Recommend public health protection methods;

Determine status of medical services;

Determine availability and condition of health facilities;

Coordinate public health information;

Issues public health news releases and advisories;

Advise on response activities as they relate to public health;

Collect and analyzes samples to identify human health problems in coordination with LDEQ, LDWF, LDAF, as well as other State and Federal agencies;

Assess damages to human health;

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Respond to disease and sanitation problems caused by overcrowding and stress on facilities and systems;
and

Provide disaster mental health systems.

25300.6 Louisiana Department of Public Safety and Corrections, Hazardous Material and Explosives Control Unit

The Hazardous Material and Explosives Control Unit has the responsibility for response and investigation of all chemical emergencies occurring within the State of Louisiana. The Hazardous Material and Explosives Control Unit is the SOSC for all Hazardous Substance releases.

25300.7 Louisiana Department of Agriculture and Forestry

The Louisiana Department of Agriculture and Forestry is responsible for administering many of the programs and enforcing the regulations that impact every aspect of Louisiana's agriculture and forestry. At the farm and forest levels, these industries contribute \$10 Billion annually to the state's economy. When the many support industries are added in, agriculture and forestry touch the lives of everyone in Louisiana, making them critical to the economic growth and prosperity of the state.

25300.8 Louisiana Coastal Protection and Restoration Authority

Because of the devastation of hurricanes Katrina and Rita, the Louisiana Legislature restructured the State's Wetland Conservation and Restoration Authority to form the Louisiana Coastal Protection and Restoration Authority (CPRA).

The CPRA's mandate is to develop, implement, and enforce a comprehensive coastal protection and restoration master plan. Member agencies include Louisiana's Department of Natural Resources, Department of Transportation and Development, and other state agencies. Working with federal, state, and local subdivisions, including levee districts, the CPRA works to establish a safe and sustainable coast.

The Louisiana 2012 Coastal Master Plan can be accessed at:

<http://www.coastalmasterplan.louisiana.gov/2012-master-plan/draft-2012-master-plan/>.

25300.9 Louisiana Division of Archaeology

The Louisiana Division of Archaeology is responsible for the supervision, management, conservation and protection of prehistoric and historic archaeological properties on state lands, including submerged resources on state rivers, water bodies and territorial waters. The Division also has responsibility for all unmarked and abandoned cemeteries in Louisiana that might be impacted by a spill or response activities.

Duties relative to this plan include:

Assisting other responding agencies by providing expertise, knowledge, and information about culturally sensitive areas, cultural resources, cemeteries, and

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appropriate strategies during cleanup to avoid or minimize adverse impacts as well as permitting all activities at unmarked or abandoned cemeteries on state, private or other non-federal lands.

25300.10 State Historic Preservation Office

The State Historic Preservation Office, under the National Historic Preservation Act (1966, as amended, et seq) and 36CFR800, consults with federal agencies concerning any direct federal action, or any federally funded, permitted or licensed activity undertaken by other agencies or organizations that may affect cultural resources during the spill or response activities.

25300.11 Louisiana State Emergency Management

25300.12 Louisiana Governor's Office of Homeland Security and Emergency Preparedness

The Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) operated the state's Emergency Operations Center. The GOHSEP coordinates and provides logistic support during disaster emergencies, including communications, air, ground, and water transportation support, equipment and supplies, facilities, fuel, food, and assists with these functions for smaller spills at the request of the SOS. The following are GOHSEP duties relative to this plan:

GOHSEP maintains and staffs emergency depots, including the establishment and training of a volunteer corps;

Maintain the Louisiana Emergency Operations Plan;

Participate and oversee the development of local and inter-jurisdictional disaster plans;

Maintain a roster of trained personnel, skilled in disaster prevention, preparedness, response, and recovery;

Provide direct emergency support to local communities in declared emergencies including spills; and

Provide emergency notification and conference call capability with local Parish Emergency Operations Centers.

25300.13 Louisiana State Military Department/ National Guard

25300.13.1 62nd Civil Support Team

The 62nd Civil Support Team (CST) is a federally funded Louisiana National Guard unit established under Presidential Directive 39. This full time unit is comprised of active duty Army and Air Force personnel.

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The CST organization was designed to augment local and regional terrorism response capabilities in events known or suspected to involve WMDs. WMD events are incidents involving hostile use of chemical, biological, or radiological agents. The team can be en-route within one to two hours to support civil authorities in the event of suspicion of a WMD attack. Specifically the CST is designed to deploy to an area of operations to:

Assess a suspected nuclear, biological, chemical, or radiological event in support of an Incident Commander

Advise responders regarding appropriate response actions; and

Facilitate requests for assistance to expedite arrival of additional state and federal assets to help save lives, prevent human suffering, and mitigate great property damage.

The CST provides rapid confirmatory analysis of chemical or radiological hazards, and presumptive identification of biological agents at a WMD incident. The team uses special military and commercial detection and communications equipment and is trained for WMD response. The CST can also provide the Incident Command/Unified Command with advice on event mitigation, medical treatment, follow-on resources, and other response concerns.

For more information visit the 62nd CST website at <http://www.la.ngb.army.mil/62nd/cst.htm>

25400 Tribes

Spills may affect tribes by either occurring on or near a reservation, or by threatening treaty reserved resources (including habitat) or cultural areas. There are 09 federally recognized Indian Tribes in the Southeast Louisiana Area Contingency Plan geographical boundary. There are additional state recognized tribes. The federally recognized tribes are listed below with their applicable areas of interest.

Chitimacha Tribe of Louisiana

All Parishes

Coushatta Tribe of Louisiana

All Parishes

Jena Band of Choctaw Indians

All Parishes

Tunica-Biloxi Indian Tribe of Louisiana

All Parishes

Alabama-Coushatta Tribe of Texas

All Parishes

Choctaw Nation of Oklahoma

All Parishes

Mississippi Band of Choctaw Indians

All Parishes

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25500 Local Resources/Agencies

The following responsibilities are typically shared among local fire, law enforcement, emergency medical, public works, health departments, etc., for incidents involving oil or hazardous substances:

Notification;

Initial hazard determination and containment;

Communications;

Search and rescue (SAR);

Liaison with other local officials; and

Provide evacuation, shelter, and mutual aid.

A list of local response resources can be found in The Area Resource Response Resource Inventory, Chapter 9000, and Appendix R.

25500.1 Emergency Management Agencies

Local Emergency Management Agencies may be involved with planning, training, and assisting with interagency coordination. During incidents, may activate the community Emergency Operations Center (EOC) to support on-scene operations and requests for resources assistance. Local emergency management agencies may support each other under mutual aid to augment staff or provide liaison. They also may be involved with the Local Emergency Planning Committee under Title III or SARA.

The responsibilities of local government EMDs may include:

Acting as the coordinator for the various local emergency organizations and as the local liaison to Louisiana Office of Emergency Preparedness when that agency is involved;

Contacting local landowners (may also be performed by local Health Department);

Establishing a Joint Information Center (JIC);

Coordinating and maintaining liaison with local government units (fire, medical, public works, sheriff-law enforcement); and

Providing communications with local government and industry.

Most jurisdictions have identified an EOC from which local operations are coordinated and supported. Some are fixed facilities and are managed by the local EMD. Field Command Posts are established by Incident Command Agencies to direct operations from the field.

The size of the local government, its resources, and available personnel will greatly influence the existence and scope of local plans. Local Emergency Management Directors and staff may assist each other under mutual aid to augment local responses staff and to provide liaison with other response agencies.

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25500.2 Fire Departments

Generally, a primary local response agency may have designated them the “Incident Command Agency”. As capabilities differ, this may range from fully equipped teams which do most response actions to just fire command personnel providing incident management.

25500.3 HAZMAT Response Teams

Federal, State, local, and private Response Teams provide specialized technical support to the UC. Contact each team to determine its capability and qualifications.

Under the direction of the UC these teams may verify or help establish the following:

Spill contamination;

Hazard determination;

Measurements of concentrations of materials;

Contamination Control;

Control of exposure for emergency workers and the public;

On-scene liaison;

Initial decontamination (if necessary);

Environmental protection measures; and

Support to hospital emergency room (if possible and necessary) for contamination control.

See additional HAZMAT information in section 7000. A list of area HAZMAT Response Teams can be found in The Area Response Resource Inventory Chapter 9000, Appendix R.

2600 Reserved

2700 Reserved

2800 Reserved

2009 Reserved for Area/District

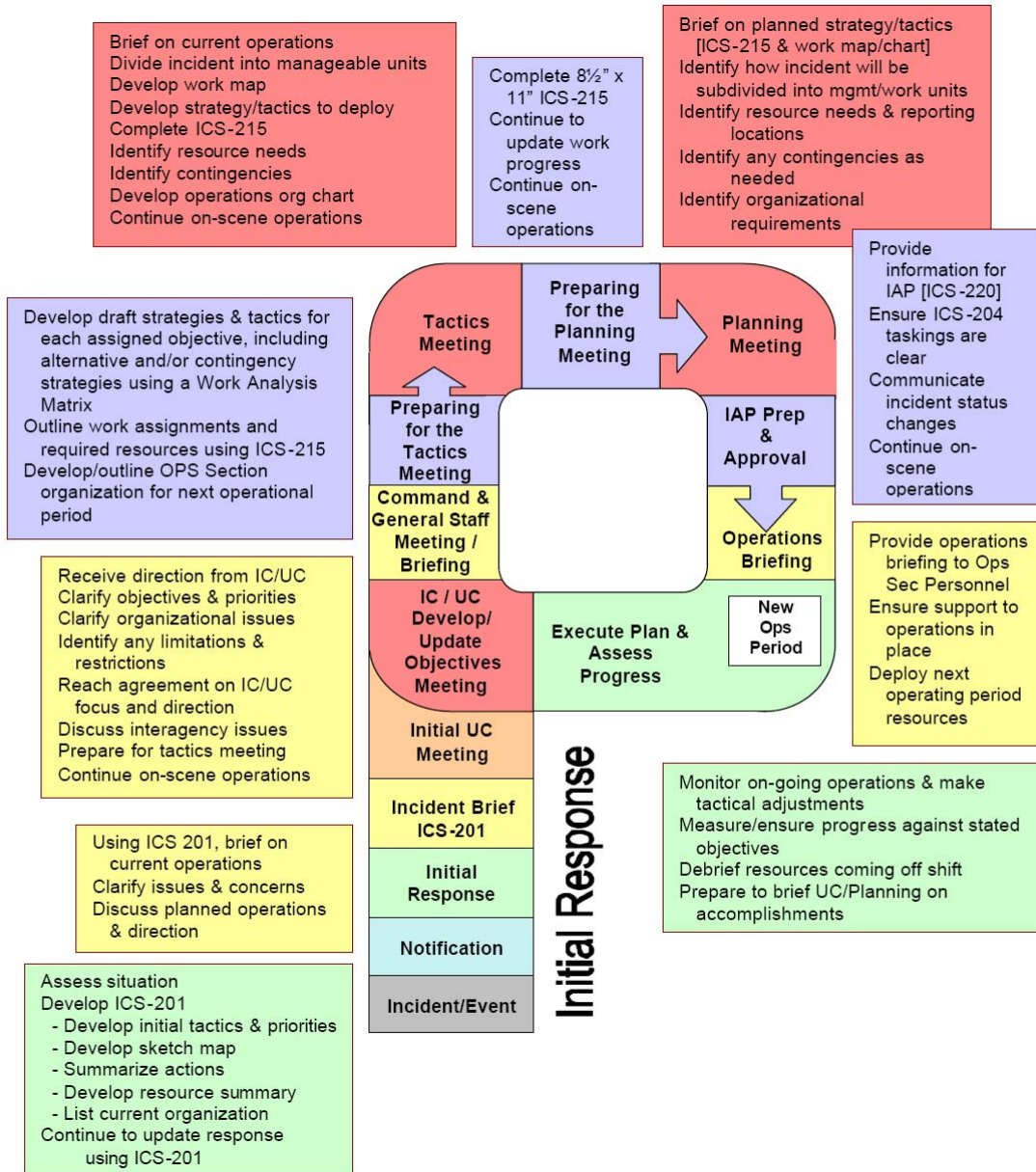
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Operational Planning "P" For Operations Section Activities



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3000 Operations

All incidents begin with operations. The Operations Section Chief (OSC) must be both tactically competent in responding to the incident and possess a thorough understanding of the Incident Command System (ICS). Some of the primary responsibilities of the OSC include:

- Manage tactical operations,
- Ensure tactical operations are conducted safely,
- Maintain close communications with the Incident Commander/Unified Command,
- Identify required tactical resources to accomplish response objectives,
- Identify staging areas,
- Assemble & disassemble strike teams and task forces, and
- Assist in the development of the Incident Action Plan (IAP).

This section of the ACP provides guidance on Operations that can apply to any type of incident. It addresses Operations from the actions of initial responders up to the activities required in supporting the ICS planning process.

The guidance in this section includes:

- The Operations Section Organization
- Considerations for building the Operations Section
 - Deputies
 - Divisions
 - Groups
 - Branches

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- Staging Areas

3100 Operations Section Organization

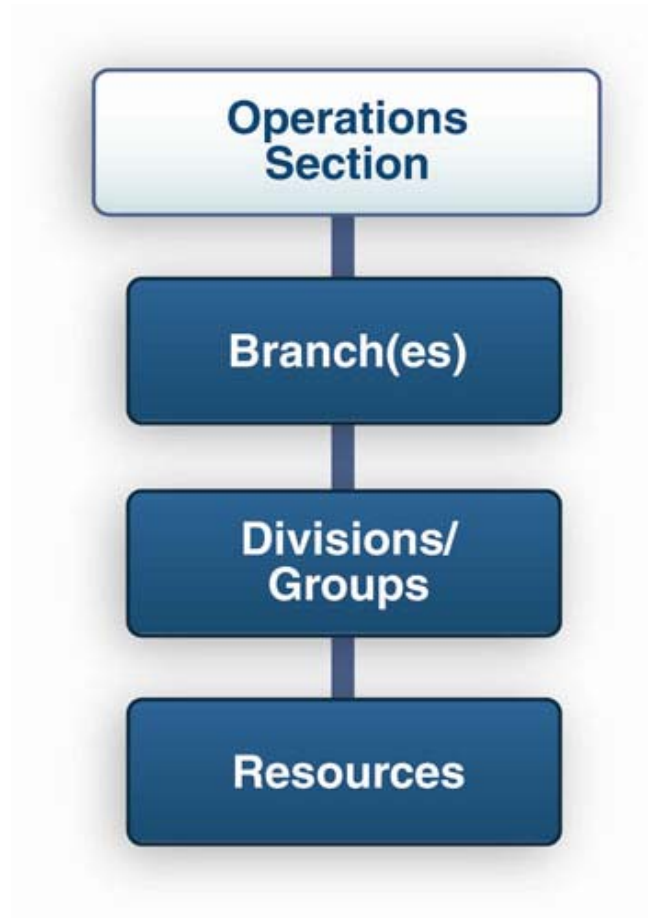
The operations organization is designed to be highly flexible as that it can be used during any type of emergency. Unlike other sections of ICS organization, Operations builds from the bottom up, only adding layers of management to maintain span of control when the size of the Operations Sections requires more focused oversight.

The below figure is a general organization chart of the Operations Section and its subordinate units. Operations Section organization information regarding the Operations Section and staff positions with the commands can be found in the National Incident Management System (NIMS) guidance and the National Response Framework. The pattern for response will follow the NIMS Incident Command System (ICS) process and position descriptions. Where NIMS ICS does not describe a process or organizational requirement the incident specific need will be addressed.

Organizational Elements of the Operations Section

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3110 ICS Position Specific Job Aids

Available ICS position specific job aids can be found in Chapter 9000, Appendix V.

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3120 Considerations for Building the Operations Section

To effectively manage an incident, the OSC must divide the incident into manageable work units. Some things to consider when dividing the incident are:

- Incident priorities,
- Size of the affected area,
- Complexity of the incident and number of tasks,
- Amount of work to be accomplished,
- Span of control,
- Open water versus shoreline activities,
- Topography of the affected area,
- Logistics requirements,
- Kind of functions to be accomplished,
- Contingencies,
- Need for staging areas, and
- Jurisdiction.

Deputies

When an incident is particularly large and complex, deputies should be employed to ensure effective operations. Deputies can be assigned to augment operations in several ways:

Provide more focused oversight of a particular aspect of operations,

Provided relief during the evening shift,

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Provide support during the critical planning process, and

Perform specific tasks that require their level of knowledge and expertise.

Divisions

Divisions are used to divide an incident geographically. Some considerations for creating divisions are:

Determine the geographical area each Division will cover,

Designate the Division(s) using letters (ex. Division A),

Every Division must have a supervisor, and

In river environments, use a different letter to designate each side of the water body in order to avoid confusion.

Groups

Groups are used to divide an incident along functional lines. Operations are often divided functionally in the beginning of an incident. Some considerations for creating groups are:

Determine the functions that will be conducted during the response (ex. Fire-fighting, on-water recovery),

Designate each Group by their functional assignment (ex. Triage group), and

Every Group must have a supervisor.

Branches

Branches are primarily used for span of control. Branches can designate an incident geographically or functionally. Some considerations for creating Branches are:

If designating a Branch for geographic area, designate each Branch by Roman numerals for geographic area (ex. Branch III), or if the branch corresponds to a political jurisdiction (e.g. parish), then use the name of the jurisdiction.

If designating a Branch for function, designate each Branch by the function that will be conducted during the response (ex. Search & Rescue Branch).

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Every Branch must have a Branch Director.

The responsibilities of a Division/Group Supervisor and Branch Director can be found in U.S. Coast Guard Incident Management Handbook, COMDTPUB P3120.17A.

Strike Teams/Task Forces

Strike Teams are specified combinations of the same kind and type of resource with common communications and a leader. Task Forces are a group of resources with common communications and a leader assembled for a specific mission. The responsibilities of a Strike Team/Task Force Leader can be found in U.S. Coast Guard Incident Management Handbook, COMDTPUB P3120.17A.

Staging Areas

Staging Areas are temporary locations to hold tactical resources for immediate deployment. Some considerations for creating a Staging Area are:

Determine most feasible locations to establish a Staging Area,

Designate Staging Areas by their physical location (ex. Basin Ave. Staging), and

Every Staging Area must have a manager.

3130 Operations Section Chief

The OSC, a member of the General Staff, is responsible for the management of all tactical operations directly applicable to the primary mission of the Incident/Unified Command. The OSC will normally be selected from the Responsible Party or the agency with the most jurisdictional responsibility for the incident.

The OSC activates and supervises organization elements in accordance with the IAP, and directs its execution. The OSC also directs the preparation of operational plans; requests or releases resources, monitors operational progress, and makes expedient changes to the IAP, as necessary, and reports to the Incident/Unified Command. Specific duties of the OSC can be found in the U.S. Coast Guard Incident Management Handbook, COMDTPUB P3120.17A

3140 Expectations of Division and Group Supervisors

Personnel assigned as a Division or Group Supervisor must carry out the tactical assignments outlined in the IAP. To be successful they must possess both the leadership qualities and expertise to ensure the operations under their control are conducted safely and efficiently. There are certain expectations that the OSC should have for Division and Group Supervisors such as providing information on work accomplished, remaining work to be done, recommendations for the next operational period, estimated completion time for primary objectives and any unusual logistical support needs.

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3200 Recovery and Protection Branch

The Recovery and Protection Branch Director and the Protection Group Supervisor are responsible for the deployment of containment, diversion, collection, protection and absorbing boom in designated locations. Depending on the size of the incident, the Protection group may be further divided into teams, task forces, and single resources.

The goal of most of containment and recovery strategies is to collect the spilled oil from the water and prevent it from reaching sensitive resources. Frequently, this is not possible and sensitive resources are oiled in spite of response efforts, especially during large oil spills. Often the goal will be to minimize environmental impact using a variety of booming, containment, and recovery techniques. These techniques are discussed in Chapter 9000, Appendix F Oil Spill Best Management Practices.

Sensitive Sites in the Southeast Louisiana Area Contingency Plan area of responsibility are organized by parish in Chapter 9000, Appendix the Sensitive Site Index.

3210 General Hierarchy of Response Priorities

In general, Federal law establishes three priority levels for dedication of emergency oil spill response resources.

- First Priority- Protection of human health and safety,
- Second Priority- Protection of environmental resources, and
- Third- Protection of economic resources.

Examples of resources that will receive a first priority response (human health and safety) include:

- Drinking water intakes- other health/safety intakes,
- Power plant intakes- desalinization plants, and
- Critical public use areas at risk (e.g. hazardous vapors).

The second priority group is thoroughly identified in the area Geographic Response Plans (GRPs) and the applicable Environmental Sensitivity Index.

The IC/UC should utilize the predetermined response strategies outlined in the applicable GRP. However, the UC/IC and responders should remain flexible and be receptive to additional information when implementing the booming plan or other countermeasures. Factors such as unusually high winds, strong tidal

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currents, equipment limitations, bottom conditions, and the type of oil can have a significant effect on the proposed strategy. Modifications to the preplanned strategies should be expected.

In addition to the seasonal variances, the protection priority of an entire area could change. For example, if the Scientific Support Coordinator (SSC) or a U.S. Fish and Wildlife Service (USFWS) biologist determined that a certain section of marshland or coastline previously categorized as a lower priority is currently a breeding ground for an endangered species, then protection of that site may be afforded the utmost priority. Sensitive locales which may be already impacted or inevitably impacted may be used to collect or retain oil so that other nearby sites can be protected.

3210.1 Response Prioritization

The initial response is focused on minimizing impacts through the strategic objectives of:

- Stopping the Source,
- Containment,
- Recovery, and
- Protection of Sensitive Areas.

In a spill event, sensitive area protection prioritization should be determined by three considerations: which sites are at risk (how soon the oil product will get to each sensitive site?), the predefined hierarchy of protection priorities, and the time and response resources available to implement protection. Responders should not assume that sensitive locales equidistant from the source of a spill are at equal risk from the oil. For the purpose of prioritization, “risk” is defined as “the probability of spilled oil reaching the vicinity of a sensitive site of concern”. This means that the urgency to protect key resource is first determined by the likelihood that it will be impacted in the near future and mobilization time for requisite response staff and equipment (can the sites at risk be protected by available resources before oil arrives?). If the sites are too numerous to protect with the response resources available within projected times of impact, then triage of protection follows as the prescribed general hierarchy below or those identified for a specific area in the GRP.

During an actual incident, the relative likelihood of a site coming into contact with the oil is a function of the proximity of the spill to the site and whether prevailing conditions (wind, current, and tides) at the time of the incident will move the oil toward or away from it. At a minimum, first responders to a spill in the marine environment should obtain an initial forecast of oil movement speed and direction from a reliable source such as the NOAA SSC, or forecast it based on present and impinging tides, currents, winds, and rainfall runoff conditions. This requires responders to use best information (optimally, real time information) about the local weather, tides, and currents to make the best prediction possible about the movement of the oil from the discharge location. This information can be used to model the probable trajectory.

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3220 Tactical Response Options

The Operations Section in coordination with the Planning Section develops the specific tactics for response strategy implementation.

Proposed containment and protection strategies are organized by parish in Chapter 9000, Appendix S, Geographic Response Plans (Under Development, ETA 2013).

3220.1 Situation Assessment

Note: At any release where the lead agency determines that there is a threat to the public health or welfare or the environment, the lead agency may take appropriate removal actions to abate, prevent, minimize, stabilize, mitigate, or eliminate the discharge/release, or the threat resulting from that discharge/release (NCP, 40 CFR Part 300.415(b)(1)). At discharges/releases determined to pose a substantial threat to the public health or welfare, the FOSC must direct a response to the incident.

The following checklist is intended to be used as a guideline of considerations to be referred to when developing tactical response options/strategies. This list is NOT in order of importance and may not apply to every situation. The Checklist does not limit the Operations Section from choosing response options/strategies that are not listed.

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Situations Assessment Checklist

Evaluate if special circumstances exist requiring section action

Health and safety issues

Fire and/or explosions (see Gasoline Response Policy Chapter 4000, Section 4650)

Requirements for access limitations (barricades, security fences, etc.)

Vessel collision

Vessel grounding

Lightering operations

Salvage operations

Vessel traffic blockages

Sample collection and analysis for evaluation or source determination

Implement support infrastructure

Determine response structure consistent with the Incident Command System principles that will be used, and from there determine level of support needed to fill positions in the structure which include Finance/Admin, Logistics, Operations, and Planning.

Implement Geographical Response Plan for location based on real time information and protection strategy effectiveness. (See Section 3250 of this Chapter and Chapter 9000, Appendix S)

Determine and mobilize personnel necessary for initial response efforts

Mobilize equipment

Coordinate Volunteers (See Chapter 9000 Section Appendix L)

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Identify initial resources at risk using GRPs or any other source information available

Natural resources- fish, wildlife, habitats, and Endangered Species Act (ESA) issues (See Chapter 4000, Section 4820)

Cultural resources- Initiate contact with a State Historic Preservation Officer (See Chapter 4000, Section 4313), NHPA: <http://www.achp.gov/overview.html#top>

Federal Tribal Historic Preservation Officers can be found at: http://www.nathpo.org/THPO/state_list.htm#Louisiana

Louisiana

Chitimacha Tribe of Louisiana

Kimberly Walden, THPO

PO Box 661

Charenton, LA 70523

Tel: 337.923.9923

Fax: 337.923.6848

Email: kim@chitimacha.gov

Jena Band of Choctaw Indians

Dana Masters, THPO

PO Box 14

Jena, LA 71342

Tel: 318.992.1205

Fax: 318.992.8244

Email: danammasters@aol.com

Tunica-Biloxi Tribe of Louisiana

Earl J. Barbry, Jr., THPO

Tunica-Biloxi Tribal Historic Preservation Office

PO Box 1589

Marksville, LA 71351

Tel: 318.253.8174 x 6451

Fax: 318.253.7711

Email: earlii@tunica.org

Website: <http://www.tunica.org>

Socio-economic resources:

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Critical Infrastructure

Drinking water

Energy/power generation intakes, Lock and Dams

Federal/State irrigation agricultural channels and water projects

Water dependent commercial areas

Industrial intakes

Agricultural irrigation intakes

Aquaculture

Marinas

Commercial fishing and shellfish harvest areas

Federal/State and private fish hatcheries

Specially designed residential, commercial, and industrial areas (ex. Floating homes and love aboard marinas)

Water dependent recreational areas

Boating

Public recreational areas

Sport fishing

National/State/local parks and beaches

National seashore recreational areas

National river reach designated as recreational

Notify and coordinate with Natural Resource Trustees (See notification section for contact information)

Coordinate with Federal, State Natural Resource Damage Assessment (NRDA) personnel (see notification section for contact information.)

3220.2 Containment and Cleanup

The priority for all countermeasures is safety of personnel and protection of the environment. A number of cleanup techniques are available for response to a pollution incident. Single or multiple techniques may be utilized in abating a spill. The determining factors in method selection usually depend on the type of product spilled, current state of product, size of the incident, location, weather, and site impact.

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Some volatile materials may create hazards if a containment boom is utilized (See Gasoline Policy Section 4650). Other defensive countermeasures may be more appropriate as conditions warrant. Each spill of a volatile product should be assessed individually and due consideration given to the most suitable actions for a given situation.

Weather and other circumstances permitting, every effort should be made to collect oil as close as possible to the source of the incident (e.g. in the case of a grounded tanker, lighter the vessel). Even as oil spreads across a water surface, collection on this medium is preferable to beach cleanup. If the weather conditions at the beginning of an incident response are unfavorable for certain operations, these solutions may become feasible at a later time in the response.

The following is a list intended to be used as a guideline of considerations to be referred to when developing tactical response options/strategies. This list is NOT in order of importance and may not apply to every situation. The list does not limit the Operations Section from choosing response options/strategies that are not listed.

Refer to “Characteristic Coastal Habitats: Choosing Spill Response Alternatives”, equivalent NOAA Inland waters job aids, and Chapter 9000 Appendix F Oil Spill Best Management Practices for detailed information on listed options/strategies.

- Natural recovery (which may include setting aside areas for research purposes and countermeasures effectiveness determination. Recognize that identifying set-aside sites involves a complex matrix of scientific, logistical, legal, and public relations issues.);
- Booming and containment (see Gasoline Policy Section 3720.4);
- Skimming (See Gasoline Policy Section 3720.4);
- Barriers and berms;
- Physical herding;
- Manual oil removal/cleanup;
- Mechanical oil removal;
- Sorbents;
- Vacuuming;
- Debris removal;

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- Sediment reworking/tilling;
- Vegetation cutting/removal;
- Flood/deluge;
- Dispersants (Chapter 3270.1 , Chapter 9000 Appendix D Dispersant Policy, and http://response.restoration.noaa.gov/disp_aid/disp_aid.html);
- In-Situ Burning (3270.2 and Chapter 9000 [Appendix C In-Situ Burn Policy](#));
- Decanting (Chapter 9000 Appendix E);
- Sub-sea containment strategies (Section 3220.4.1; Chapter 9000, Appendix U, “Spills of Nonfloating Oils: Risk and Response”); and
- NMFS Biological Opinion for oil response.

A critical element to containment and cleanup is to monitor the strategies/tactics that have been implemented for effectiveness and efficiency. It is also important to discuss and develop criteria/guidance for terminating the cleanup (e.g., how clean is clean?).

3220.3 Protection

The goal of most oil containment and recovery strategies is to collect the spilled oil from the water and prevent it from reaching sensitive resources. Frequently, this is not possible and sensitive resources are oiled in spite of response efforts, especially during large oil spills. Often the goal will be to minimize environmental impact using a variety of booming, containment, and recovery techniques.

The following are techniques that can be implemented by the Operations Section to contain spilled oil on the water or as a means to direct it away from sensitive natural resources or cultural amenities. Shoreline cleanup and treatment methods are discussed in more detail later in this Chapter. For swift current environments, the USCG publication, “Oil Spill Response in Fast Currents- A Field Guide” (Hansen & Coe, 2001) provides an excellent summary of techniques and equipment which have success in such challenging environments.

3220.3.1 Containment and Protection Options

As oil escapes containment it becomes increasingly difficult to recover. Inevitably oil does escape containment, and additional measures must be included to deal with the escaping oil. This is particularly necessary where oil booming is subjected to winds, waves, and strong currents; oil entrains or is splashed over boom. To counter oil escapement, deployments should include preplanning to anticipate and control escapement.

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Before spilled oil can be effectively recovered, the spreading of the oil must be controlled and the oil contained in an area accessible to oil recovery devices. Generally, spilled oil is contained using oil containment boom. Typical boom has a floatation section that provides a barrier on and above the water surface and a skirt section that provides a barrier below the surface. The physical dimensions of the boom to be used for a particular spill will be dependent on local conditions. In the open water it may be necessary to use a boom that is several feet tall. In a protected marsh, a boom that is only a few inches tall may be appropriate.

There are limitations on the effectiveness of any boom. Oil will be lost if the conditions are such that there is splash-over from breaking waves. Oil will also be carried under the boom skirt if it deployed in such a way that currents cause the oil to impact the boom with a velocity perpendicular to the boom of greater than 0.7 knots. Once a boom has been deployed, it may be necessary to reposition it due to changing tides and currents. It is desirable to have personnel available to readjust the boom as required. In all cases of boom deployment, consideration must be given to protecting the safety of those involved in the activity.

Hard/Containment booming is used to prevent spreading and to concentrate the oil so it can be skimmed or vacuumed. Factors that need to be considered are: type and size of boom required for weather, winds, tides, and currents in the vicinity of potential spill areas; the type of deployment vessel needed; the amount of boom needed for effective containment and available skimming capabilities. Fixed or natural anchor points should be selected.

Sorbent booming is useful when the amount of oil is minimal, when tides and currents are light, or when shorelines require protection. Heavier oil can be recovered using absorbent (oil “sticks” to the boom) and lighter fuels generally are recovered using adsorbents (sausage, sweep, or diapers). Sorbent booming can also be used as a backup for other types of booming to recover product that may have entrained past the primary barrier.

3220.3.2 Shoreline Protection Options

Southeastern Louisiana is home to a large expanse of mud flat and marsh systems. These areas are particularly difficult to protectively boom and every effort should be made to contain and recover the oil before it approaches any of these areas. If the on-water recovery operations are not entirely effective and oil still threatens the marsh areas, intertidal barrier boom may be used to protect the mud flats.

A recommended deployment strategy is as follows: Place intertidal boom along the entire front of the mud flat, with the boom being anchored just off shore of the low –low tide line. In areas where wave entrainment of the boom at high tide is considered to be a problem, place a line of boom across the upper mud flat near enough to the marsh to be away from the threat of wave entrainment. The boom positioned on the mud flat would rest on the flat at low tide and be of the type of construction that would prohibit oil from passing under it on the rising tide. The boom would eventually lift up off the tidal flat surface as the tide continues to rise.

Deployment of this type of boom and its supporting arrangement is extremely manpower intensive. It should only be implemented if there is a high probability that oil will reach the marsh areas. It is envisioned that these resources would not be available until equipment began to cascade into the area sometime after the initial response. Other factors to consider in this type of booming are:

- Water body type,

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- Water current velocity,
- Water depth,
- Wave height, and
- Shore type.

Generally, sediment berms, dikes and dams will most often be used to protect small coastal inlets or perhaps tidal channels serving wetlands and marshes when these channels are accessible. The object of berms, dikes and dams is to keep oil outside an inlet because there are often abundant natural resources and economically significant areas that use the sheltered waters within.

Occasionally, dikes and dams have been used across a channel to contain the oil within a portion of marsh in order to prevent widespread contamination of other resources.

Dikes and Dams are not practical when currents are great, waters are deep, and waves are large. Also, beaches with abundant sand are generally the most suitable for building dikes and dams. Berms can be built above the active beach face to prevent oil contamination of high beach during spring tides. Alternative strategies should be prepared and the necessary supplies and equipment in place should a berm, dike, or dam fail.

3220.4 On-Water Recovery

Oil removal/recovery in open water is accomplished through the use of skimming devices once the oil has been contained. Skimmers can be freestanding in which the skimmer is a separate piece of equipment which pumps the oil-water mixture from the contained surface into tanks on a vessel. These skimmers are usually driven by hydraulic units on board a vessel. Self-propelled skimmers have a skimmer as an integral part of the vessel. The skimming vessel positions itself at the head of a concentrated or contained pool of oil and recovers the oil into tanks on board the vessel. There is also a type of skimmer in which the weir or collection zone of the skimmer is an integral part of the boom which is close to the skimmer.

Vessels of Opportunity (VOO), such as fishing vessels, may be used to deploy or tow boom and, depending on the size of the vessel, be equipped with skimming equipment. They need to have adequate deck space and lifting cranes to carry the necessary equipment. The Coast Guard's Vessel of Opportunity Skimming System (VOSS) can be deployed on a variety of vessels. Locations of VOSS can be found in Chapter 9000, Appendix R, and Area Response Resource Inventory.

In the Southeast Louisiana area FOSC zone it is not uncommon to encounter currents in excess of three miles per hour. With appropriate skimmer operations, it is possible to recover spilled oil in these high current areas. Standard skimming techniques must be modified somewhat to optimize oil recovery.

High Current Environments

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To be successful, most containment and skimming systems must encounter oil at speeds of less than one knot. Typically skimmers are operated in conjunction with containment boom. If oil encounters the boom/skimming system with a perpendicular velocity greater than 0.7 knots, the oil will carry under the boom and be lost. Therefore, the most important consideration for skimming in high currents is to keep the speed of the skimming system below one knot relative to the water's surface. As a basic example: A skimmer pointed upstream in a 5 knot current would actually be proceeding downstream or backwards at four knots to keep its velocity relative to the water's surface at one knot. Gauging a skimmers velocity relative to the water's surface can be somewhat difficult. Often the most reliable method is for the skimmer operator to closely monitor the skimming system. They should look for signs of oil entrainment as well as ensuring the integrity of the containment system. As current speeds change so must the speed of the skimmer. The skimmer monitoring can be aided by using a helicopter observer. The Observer can tell is oil is being lost by the skimmer as well as direct the skimmer to the best skimming location.

Boom is often deployed in front of the skimmers forming a V thus directing oil into the skimmer. The practice increases the area being covered by the skimmer. Ideally this V should be as wide as possible. In high currents, as the V width is increased the speed of the oil encountering the boom perpendicularly is increased.

Oil will spread more quickly in the direction of the current flow; skimmers should operate in an up and down stream orientation. The oil slick will be elongated in the direction of the currents. Skimmers will encounter the most oil as they proceed up and down stream within the slick. Operating back and forth across stream and across the slick will result in sub-optimal recovery efficiency.

Near-Shore/Shallow Water

Oil recovery techniques and equipment are different in near-shore/shallow water locations than open water. Shallow draft vessels and smaller boom and skimmers are used in these situations. These vessels can maneuver into tight places behind and under wharfs or in sloughs and can actually skim next to shore in many near-shore locations.

Strategies for near-shore cleanup can differ depending on the depth of the water and the location. Near-shore operations, within a bay or inlet, will also require shallow draft vessels, workboats, and skimmers. However, the vessels may only be operable at high tide. At or near low tide, the operation may evolve into a shoreline cleanup operation. Any boom towing boats or skimmers must be able to withstand going aground without sustaining major damage.

Coastal shallow water or near-shore strategies will differ in certain respects. In addition to the need for small, shallow draft vessels and/or specialized vessels may also be needed. The safety of personnel involved in these operations is the IC/UC's paramount concern.

3220.4.1 Non-floating Oils Recovery and Protection

Non-floating oil that is spilled and transported subsurface either remains suspended in the water column or is deposited on the seabed, usually after interaction with suspended sediments or sand. Different strategies for containing these oils can depend on the location of the oil.

The recovery of sunken oil has proven to be very difficult and expensive because the oil is usually widely dispersed. Several of the most widely used recovery methods are manual removal, pump and vacuum systems, nets and trawls, dredging, and onshore recovery.

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For specific containment and recovery methods refer to Chapter 3 of the National Academy of Sciences (NAS) “Spills of Nonfloating Oils: Risk and Response” contained in Chapter 9000 Appendix U.

3220.4.2 Shore-Side Recovery

There are predictable locales where recover efforts can be optimized at shorelines. There are two situations where oil collection should be vigorously attempted at the shoreline:

Places where oil naturally collects at the shoreline because of winds and currents

Diversion and capture of oil as it flows past or along the shoreline and points with low environmental sensitivity

Oil is a substance that spreads primarily in two dimensions on the water surface while water moves in three dimensions; oil will spread thin, but it will also accumulate at predictable locales; it will accumulate wherever water has downward currents: such as tide rips along mud flats, and at windward coves.

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3220.4.2.2 Diversion to Shore

Diversions to shores with low environmental sensitivities are a desirable alternative to the unmitigated spread of oil. As described above, oil spreads rapidly on open water and effectual on-water skimming is difficult in a high current environment. Diversion can shunt oil out of high current and into quiet water capture point at shore. It can be an effective addition to on-water skimming recovery.

The following are the operational considerations when establishing a shoreline collection site when oil is moving along or near shore. Boom should be positioned at an acute angle to the current to move oil toward the shore collection. Cascading boom arrangements may be necessary. Once oil is at the shoreline, it may be necessary to deploy additional boom to trap the accumulated oil at the shore collection site when the tide reverses. Good land accessibility is an important part of selecting capture sites since it permits site support and easy removal of collected oil. Though some natural collection sites may have poor land access, they may be important accumulation points which can be exploited effectively via water.

Deployments of this type should only be made with the recommendation of a Resource at Risk Specialist and the direction of the IC/UC.

3220.4.2.3 Pre-Beach Cleanup

While it is generally not possible to avoid the generation of oily debris resulting from the contact of floating oil with waterborne solids, it is possible to avoid the generation of oily debris in the coastal intertidal zone if the anticipated area of oil impact can be cleaned prior to stranding of the spilled oil. Personnel can be deployed to remove debris from beach intertidal areas to above the high tide line in order to prevent oiling of stranded debris/trash. It is important to note that such crews are not likely to be certified as required for oiled debris recovery under OSHA, 29 CFR Part 1910.120 and can only perform this task prior to the stranding of spilled oil. A safety/industrial hygiene specialist should be consulted regarding limitations of these crews and the effective establishment of exclusion zones in the area of beach impact.

3230 Monitoring Oil Movement/ Forecasting Oil Trajectories

Oil trajectories may be effectively forecast by several means and should always be done by skilled staff. Usually trajectories are created and assessed by the Environmental Unit (See Chapter 4000 Section 4600). Each method can be limited by conditions or unforeseen patterns, and no method is guaranteed to accurately predict the future distribution of oil. Because success or failure of response to near-shore spills is usually determined by actions in the early timeframes, the IC/UC and on-scene responders must take immediate action using simple predictive methods rather than delaying action until more precise information becomes available. *Spill responders must act on the best information available at the moment.* If time and resources permit, as many means as possible should be engaged to maximize the probability of accurately identifying slick movement and likely impacts, but this should never slow response. Regardless of the trajectory method used, it should always be recognized that such trajectories are helpful guidance but do not substitute for using on-scene information about currents and winds which determine slick movement.

If the Environmental Unit or other skilled trajectory analysis is not available, initial response may need to proceed based on simple mathematical calculations of oil movement commonly called “back-of-the-envelope” or “envelope” trajectories. “Envelope” trajectories provide a quick yet fairly accurate estimate of the trajectory using best available information (which may not be accurate enough for more sophisticated modeling). It can quickly be recalculated using improved information. (After initial response, trajectories will be developed by the Planning Section/Environmental Unit as part of the IAP.)

Envelope Trajectories

Envelope Trajectories are simple pencil and paper computations based on currents, tides, and winds. Although an envelope trajectory is only gross approximation which does not take into consideration spreading or local turbulence, it will often be used as the first estimate of oil trajectory until better information is available from computer modeling or aerial perspective. This method is quick as well as effective and is not restricted by visibility. It has wide effectiveness and provides gross projections. This

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method is based on the premise that oil moves at 100% of current velocity and 3% of wind velocity. In areas with strong tidal currents the location of the leading edge of the oil slick can be quite accurately predicted using current estimates or information available in many tide books. If real time measurements of currents and winds are available from internet sources, then such real time wind and current information can be used to significantly improve the predicted oil distribution. However, in bays and estuaries time is critical and an initial trajectory estimate should not be delayed to perfect winds and currents. There are several methods of estimating trajectories; the following is one method used to execute envelope trajectory calculations:

Determine as nearly as possible the time and location of the incident

Get best available prevailing tides and currents at the location from tide & current tables. (in bays and rivers, data may be affected by high runoff or rainy seasons.)

Calculate the movement of oil. Movement of oil = max current velocity X time from spill to next slack water. Using *max current* provided a projections of *least regret* since it will maximize the oil trajectory.

Using a nautical chart or similarly geographically accurate map, draw a vector on the map from the point of origin for the distance that the current moves for the elapsed time. This may be subdivided by hours to estimate the hourly incremental advance of the oil.

Winds influence oil movement slightly: wind movement = 0.03 X wind velocity. So, in open ocean and at slack tides estuaries, wind adjustments become important (although some along coast currents can reach 2 knots.) From the end point of an interval of interest, draw a vector expressing the computer value in the direction of the wind.

The resulting location is an approximation of the leading edge of the slick.

Sites of concern which are proximal to (in or near) the projected slick should be added to the list of sites to be protected. This method can be used to forecast the time by which a site is likely to be threatened and draft a timetable for protection of sites at risk.

When the tide phase shifts, this process is best started again from the point of origin, based on the presumption that oil is still discharging or escaping containment at that location, but remember that there is now an elongated smear of oil from the slick's initial path which must also be accounted for.

Once a trajectory has been developed, the threat to significant resources must be assessed. The trajectory should be used to determine the probable sequence of impacts to shorelines and probable times of impacts. These calculations can be computed even if the person if not on-scene and information can be transmitted by email, fax, or phone to the command post. This would best be done by the SSC. If not available, responders should refer to the applicable GRP(s) for the projected impacted area.

3240 Remote Sensing During Oil Spill Response

To be most effective, oil spill recovery equipment must be directed to the location of the thickest oil accumulation. Observers on vessels at water level are unable to see a vast area and are unable to recognize the most optimum skimming locations. Skimming activities are best directed by trained observers aloft in helicopters. One observer may be able to direct several skimming units to optimum skimming locations. During hours of darkness or poor visibility, tracking devices that emit a radio location signal can be placed in the spilled oil to trace the oil movement. Remote sensing systems have been developed which can track oil movement even in darkness and poor visibility.

Many factors must be considered when contemplating the use of remote-sensing technology during an oil spill response. There are three basic arenas in which the sensors can operate.

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Terrestrial platforms (land or water-based)

These platforms can support observers using visual means of detection, cameras (single frame, television, infrared, etc.), and/or radar.

Aircraft (manned helicopters, manned fixed wing, or drones)

These platforms can support visual observers, cameras (same as terrestrial), radar (of various types), infrared, lasers (of various types), microwave, and/or ultraviolet.

Satellites

These platforms typically use electronic detection means, mostly types of radar.

All sensor/platform packages provide different spatial resolutions, dwell times, on scene (“*delivery*”) times, planning requirements for use, swath widths, detection thresholds, analysis times and difficulty of data interpretation, false detection rates, weather limitations, and cost. Additionally, there are dramatic differences in each sensor’s capabilities to accomplish specific tasks. Of interest to the response effort are such things as plume size, description, and movement; relative oil thickness; location of the thickest oil; type of oil being observed; etc. Also, various environmental conditions have a bearing on the sensor. For example, darkness, fog, rain/snow, sun location, and cloud coverage, etc., are important considerations.

The geometry of the situation also plays an important role. A sensor at high altitude is able to “see” a larger area, but typically at a lower resolution than would be obtainable by a platform operating at a lower altitude. Also, many sensors, including visual, lose detection capability at certain acute angles.

In general, increased capability comes with increased cost. At the high end, these costs can be extraordinary. Also, no single sensor package will give all the information desired at a given spill under all conditions. At the high end, the very sophisticated laser based sensor packages MAY be able to give more information; however, most of the information is merely “nice to know” and is of little value to the actual response. For instance, absolute oil thickness is of little value added if a much less expensive sensor will provide a sufficiently reliable estimate of relative thickness for the purpose of guiding response actions. Also, classification of the oil type and characteristics would likely be of little value when such information can be easily obtained from the spiller or from the first responders on scene.

The Southeast Louisiana Area currently has access to the following remote sensing tools:

Terrestrial

In addition to visual observation (mostly from a vessel), USCG MSU Morgan City has the capability to view various camera feeds in limited areas throughout the marine waters applicable to this plan.

Aircraft

Resources available for visual observation from helicopters and fixed wing aircraft, including drones are listed in the Area Response Resource Inventory Chapter 9000, Appendix R.

Satellite

Both commercial and military platforms exist.

A literature search reveals the following sensor technologies, each with its own set of capabilities and limitations that could potentially be useful for oil spill response. These sensors will be studied in greater depth for inclusion in future updates to the Southeast Louisiana Area Committee Plan.

Next generation infrared,

Ultraviolet,

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Microwave,

Laser,

Laser-acoustic, and

Various satellite platforms.

3250 Geographic Response Plans

Geographic Response Plans (GRPs) are an annex to the Southeast Louisiana Area Committee and a key element of both facility and vessel contingency plans. GRPs have two main functions:

From a planning perspective, the GRPs provide a description of sensitive biological, cultural, and economic resources that must be addressed to be in compliance with:

The National Oil and Hazardous Substance Pollution Contingency Plan (NCP, 40 CFR Part 300.210(3)(i)). Area Contingency Plans are required to describe areas of special economic and environmental importance that could be impacted during an oil spill.

The National Historic Preservation Act of 1966 contains applicable, relevant and appropriate requirements. The GRPs also address sensitive historic and prehistoric resources

From an operational perspective, the GRPs guide responders in the first 24-48 hours of an oil spill by:

Providing a prioritized list of tactical response strategies to be implemented during the early hours of an oil spill (usually before the formation of the Unified Command);

Providing detailed information for booming strategies that could be utilized to minimize impacts to predetermined sensitive resources.

Once the Unified Command is formed, additional operational strategies and tactics will be relayed to the field in the form of the ICS-204 work assignment sheets.

Because the GRPs are the primary tool used during an initial phase of the response and fairly broad in their scope, they are not intended to minimize impacts to all possible sensitive areas that could be affected by an oil spill. Likewise, the GRPs are not intended to be an exhaustive list of all the tactical strategies that could, or should, be implemented during a spill.

3250.1 Guiding Principles for GRPs

Safety and health of the responders always takes precedence over the protection of sensitive environmental resources.

Source control and containment are always a **HIGHER** priority over GRP strategy deployments.

The protection strategies in the GRPs have been designed for the use with persistent oils and may not be suitable for other petroleum or hazardous substances. (See Section 3270.4 for Gasoline Policy).

Environmental conditions (winds, currents, and tides), together with the physical limitations of existing spill response technology, may preclude the effective protection of some areas.

Once a coordinated response has been established during an oil spill incident, booming strategy selection and prioritization are refined and supplemented based on real-time assessments. The UC has the authority to supersede the strategies proposed in the GRPs.

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Response personnel may find it necessary to deviate from the exact details provided for deploying a particular strategy. An onsite evaluation of actual conditions is often needed to determine whether a strategy is safe to deploy, whether it will be effective under existing environmental conditions, or effective for the particular type of oil involved. Therefore, field personnel should use their best judgment to modify existing strategies based on real-time conditions and notify command accordingly. Field personnel are also encouraged to notify the command post regarding opportunities for deployment additional strategies that might be used to take advantage of incident-specific conditions.

The GRPs Include the Following Types of Response Strategies

Collection Booming with On-Water Recovery: Deploying various types of boom to collect oil for mechanical removal using sorbent materials, vacuum trucks, or near shore skimming devices;

Exclusion Booming: Deploying various types of boom to reduce oiling in sensitive areas;

Deflection Booming: Deploying various types of boom to divert oil away from a sensitive area and/or divert oil toward a collection point.

GRPs Do Not Include

In-Situ Burning: Burning oil on the water; usually requires containment by fire-resistant boom. Chapter 9000, Appendix C for additional Southeast Louisiana Area Committee policy on in-situ burning use;

Dispersants: Applying chemical agents, usually by aircraft, to aid in breaking up surface slicks and dispersing oil within the water column. See Chapter 9000, Appendix D for Southeast Louisiana Area Committee policy on dispersant use;

Shoreline Cleanup: Physical removal or chemical treatment of stranded oil. See Chapter 9000, Appendix G for the NOAA Shoreline Countermeasure Manual for Tropical Coastal Environments and Appendix F Oil Spill Best Management Practices for guidance on shoreline cleanup;

Open-Water Mechanical Recovery: Physical removal of oil using boats and/or vessels specifically outfitted with collection and separation equipment.

No Action: Appropriate when weather, sea, or other conditions make deployments unsafe and/or infeasible and when response actions or site access will cause further environmental damage (e.g., wetlands);

3250.1.1 Sensitive Resources Addressed by GRPs

The NCP, 40 CFR Part 300.120(3)(i) requires that Area Committees identify and prioritize sensitive areas requiring protection. In the Southeast Louisiana Area Committee Plan, sensitive areas are broken into three main categories described below.

Environmentally Sensitive Resources

Key natural resource areas are identified using a wide of range data provided by resource trustees, tribes, plan holders, spill response organizations, contingency plan holders, and other interested stakeholders during the process of GRP development and review. The Environmental Sensitivity Index (ESI) maps developed by NOAA are one example of the type of natural resource information available (<http://response.restoration.noaa.gov>). When appropriate, tactical response strategies are designed for implementation during the early hours of an oil spill to reduce impacts to those areas, and trajectory models or other assessment techniques are used to establish initial response priorities.

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Historically or Culturally Sensitive Resources

Information on sensitive historic and cultural sites is coordinated through contact with the various tribal governments, State Historic Preservation Office (SHPO), and the United States Department of the Interior may assist as needed. Due to the sensitive nature of this information, the specifics regarding the location and nature of such sites are not included in the GRP documents. However, in order to ensure that tactical response strategies do not inadvertently harm historical and culturally sensitive sites, historic preservation specialists are consulted to review the GRP documents prior to finalization. The Louisiana SHPO can be contacted at:

Physical Address: State Historic Preservation Office

Division of Archaeology
Capital Annex Building
1051 North Third Street
Baton Rouge, Louisiana 70802

Mailing Address: P.O. Box 44247
Baton Rouge LA, 70804

Phone: 225-342-8160 (general office)
225-219-4598 (Division of Archaeology office)

Fax: (225) 219-9772

Federal Tribal Historic Preservation Officers can be found at:

http://www.nathpo.org/THPO/state_list.htm#Louisiana

Louisiana

Chitimacha Tribe of Louisiana

Kimberly Walden, THPO

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Tunica-Biloxi Tribe of Louisiana

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Website: <http://www.tunica.org>

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Socio-Economically Sensitive Resources

Economically sensitive areas are facilities or locations that rely on a body of water to be economically viable and that could be severely impacted by an oil spill. Economically sensitive areas are broken down into three separate categories: Critical infrastructure, water dependent commercial and recreational areas. Information on economic resources will be gathered for inclusion as an appendix to the GRPs.

3250.1.2 Geographic Scope of the GRPs

GRPs are currently under development for all coastal waters within the Morgan City Captain of the Port Zone, including the Mississippi River. The GRPs are divided by Parish. See Chapter 9000, Appendix S for Completed GRPs.

3250.2 Evaluation Criteria for Geographic Response Plans

Specific strategies for response to spills in the sensitive areas are detailed in the GRPs. Below is a list of some of the biological, cultural, and booming criteria used to determine whether it is appropriate to develop and maintain GRP strategies at specific locations. These criteria are not intended to be exhaustive, or ranked in order of priority, they are meant to help frame the evaluation of GRP strategies.

Key Criteria for Biological Sites, Species, and Habitats of Concern

Temporal considerations-

What is the expected recovery time for habitats or fish and wildlife resources?

What is the residence time of the oil?

Substrate-

What is the exposure risk? What is the likelihood that a habitat or species will be exposed to direct contact with surface oil or to dispersed/dissolved oil in the water column?

Given the substrate, is clean-up feasible?

Habitat quantity, quality, and pattern-

Is the impacted habitat considered scarce at local, regional, or statewide scales?

Is the size of the impacted habitat significant compared to other sites in the region?

Is the species diversity or endemism high? Is this true year-round or is it seasonal?

Is abundance of fish and/or wildlife high? Is this true year-round or is it seasonal?

What life stages of organisms are present?

Is the habitat important to threatened or endangered species?

What is the status of the habitat's integrity (i.e., is the area undeveloped or highly altered?)

Does the habitat have a special designation or status (i.e., Marine Protected Area, biological research area, restoration site, etc.)?

Are the habitat and/or its associated fish and wildlife resources especially susceptible to injury by oil?

Key Criteria for Archeological and Cultural Sites of Concern

Deployment- Does the act of deploying the GRP strategy threaten the archeological site (anchoring the boom, parking vehicles, etc.)

Purpose- Will implementing the GRP strategy type (collection, diversion, deflection) negatively impacts the site?

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Review- If either of the above is possible, then a review of the site records is necessary to determine the exact location and sensitivity of the site. If the site records are old or insufficient, then a field visit is necessary.

Significant developments- Are there significant developments that may make any concern about the impacts irrelevant (housing developments etc.)?

Additional criteria for archaeological sites without existing GRP strategies-

Impacts- Does the site extend below the high tide line?

Vulnerability- Will it be damaged or destroyed if oil were to hit the area (or by the placement of response equipment in the area, e.g., vacuum trucks, etc.)?

Integrity- Has the site be disturbed yet, or is it still intact?

Historic Importance- Is the site nominated for, or already on, the National Register of Historic Places or the State equivalent?

Tribal Importance- Does the site hold special tribal importance?

Parish Importance- Does the site hold special Parish importance?

Feasibility- Is booming the site feasible?

Key Criteria for Socio-Economic Sites of Concern

Strictly economic resources are designated as the third priority for dedication of oil spill response resources, following human health and safety and environmental resources. The designation of economic resources is highly dependent upon the priorities of the local government. Each GRP contains detailed information of economic sites in each Parish or Geographical Response Area. This information includes geographic locations of resources, a brief description of the resource at risk, contact names and numbers, and the priority response ranking.

Key Criteria for the Use of Boom

Effectiveness- Is booming the most effective strategy for reducing oil spill impacts? Would other alternatives such as a phone call to an operator, shutting off a water intake, or closing a tidal gate be as effective?

Safety- Determine if safety of human responder will be put at risk for limited likelihood of strategy success.

Strategy- Determine what type of booming strategy would be the most effective at reducing oil impacts to the resource under prevailing conditions (collection, deflection, or exclusion).

Evaluation- Evaluate the site for advantageous characteristics based on:

Anchoring substrate. Does the substrate allow responders to easily anchor the boom?

Accessibility. Can the site be easily accessed by vessel or vehicles?

Time to arrive on scene. How long will it take to get to the site?

Potential for oiling. Is the site located near shipping activity or fueling operations?

Beach substrate. Used Environmental Sensitivity Index (ESI) or Shore-Zone classification to determine vulnerability to oiling and likely oil longevity based on the shoreline type.

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Type and quantity of boom. How many sections of boom and what size anchors will be required for deployment? What is the anchoring depth? What type of boom tending will be required? Will this tending be complicated by the amount of time it takes to arrive at the site or the difficulty of access? Is the amount of boom required reasonable (< 1000 ft)?

Prevailing weather- especially wind and waves. Is a booming strategy realistic for prevailing conditions?

Tidal influence. At extreme lows will there be nothing but mud flats (very difficult to tend boom when it is stuck in the mud) or at extreme highs will the entire face of a coastal marsh be underwater (thus exposing the entire perimeter to oil)?

Influence of currents. What velocities can be expected?

Feasibility. Depends on: Boom size, boom length, the number and size of anchors, the capability of the recruited workboats (to tow boom, set and recover anchors, shelter boat crews, carry boom and associated equipment), the experience of the boat crew, and the effectiveness of the anchoring system (both on shore and in water).

3250.3 Sensitive Area Prioritization

The following prioritization should guide initial response efforts during the first 24-48 hours of an incident. Considerations include human health and safety, environmental sensitivity and economic and cultural importance. The Area Committee works with federal, state and local agencies and stakeholders to ensure that sensitive areas receive appropriate prioritization.

3250.3.1 Prioritization

Through the evaluation process, an area is broken down by type (human health and safety, environmental, economic and cultural) and sensitivity (high, medium, low). This evaluation process focuses on the sensitivities of areas and not jurisdictional boundaries. Once all areas have been evaluated and broken down, three levels of priority are generally all that is needed for pre-spill planning:

A – Protect First

B – Protect After A Areas

C – Protect After B Areas

These levels of priority can be applied to an area to determine the protection strategy during the initial response effort.

3250.3.2 Questions for Evaluating an Area

The following questions have been collected to help Area Committee and stakeholders evaluate the priority of an area.

Is the area protectable?

Are clean-up efforts for this area feasible?

How persistent would oil be in this area or on this substrate?

How vulnerable are the individual species in this area?

What is the expected recovery time for habitats, fish or wildlife in this area?

How would the oiling of this area affect human health and safety?

Are there seasonal considerations (i.e. nesting, spawning, hibernation, etc.)?

What parts of a protected areas are the most important to preserve?

The following prioritizations were determined by the Geographic Response Plan subcommittee:

PRIORITY A

Public drinking water intakes;

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Industrial water intakes with public health and safety impacts (e.g. public utility intake, supported by state managed early warning network on MISS RIVER);

Tidal Inlets – Primary Tidal Inlets that are protectable

Secondary inlets inside bays that connect to extensive sensitive areas,

Breaches, wash-overs, and other low areas where oil can enter sensitive habitats;

Exceptional/Highly sensitive wetlands with high biodiversity site (e.g. NWR, State refuges); and

Important Bird Areas,

Bird nesting islands (e.g. Raccoon Island, Queen Bess Island, Brush Island),

Other bird nesting concentrations including T&E species, and

Seasonal bird concentration areas onshore (e.g. South Pass).

Freshwater Diversion (Manmade and Natural)

PRIORITY B

Exceptional Oyster beds in the intertidal;

Seagrass Beds in less than 1m H2O;

High use recreational sites;

Important Industrial Areas (e.g. fishing ports, marinas, industrial corridors);

Other water intakes not specified in Priority A; and

Cultural/Historical sites of concern (e.g. contact SHPO/Tribes).

PRIORITY C

Small tidal channels and canal openings;

Sheltered tidal flats;

Seagrass beds in greater than 1m water;

Aquaculture sites and oyster lease areas;

Wetland restoration areas;

Other industrial areas; and

Areas identified by local authorities not previously noted in Priority A or B.

The following areas were not included due to the initial protection difficulty:

Open gulf beaches

Exposed wetland shorelines (exposed to waves and currents) (as described in Appendix G), and

Exposed rip-rap.

3260 Decontamination/Disposal

3261 Decontamination Group

Personnel, vehicles, vessels, etc. responding to hazardous substance incidents may become contaminated in a number of ways, including contacting vapors, gases, or particulates in the air; being splashed by materials while sampling, walking through puddles of liquid or contaminated soil; or through using/handling contaminated equipment. Decontamination consists of physically removing contaminants or changing their chemical nature to innocuous substances. How extensive decontamination must be depends on a number of factors, the most important being the type of contaminated involved.

The Decontamination Group is responsible for decontamination of personnel and equipment. Contaminated personnel entering contaminated areas shall be decontaminated in accordance with the Site Safety Plan.

The following “minimum” actions shall be performed:

Direct and coordinate decontamination activities,

Determine resource needs, and

Brief SOFR on conditions.

A personnel decontamination plan should be developed as part of the Site Safety Plan. The initial decontamination plan is based on a worst-case situation or assumes no information is available about this incident. Specific conditions (e.g., type of contaminate, amount of contamination, levels of protection

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required, type of protective clothing worn) are then evaluated, and the initial decontamination plan is modified to adapt as new information about site conditions becomes available. All materials and equipment used for decontamination must be disposed of properly (i.e., as waste).

In addition to routine decontamination procedures, emergency decontamination procedures must be established. In an emergency, the primary concern is to prevent loss of life and severe injury to site personnel. If immediate medical treatment is required to save a life, decontamination should be delayed until the victim is stabilized. If decontamination can be performed without interfering with essential life-saving techniques or first aid, or if a worker has been contaminated with an extremely toxic or corrosive material that could cause severe injury or loss of life, decontamination must be performed immediately. During an emergency, provisions must also be made for protecting medical personnel and disposing of contaminated clothing and equipment.

Refer to Form G of the Site Safety Plan in Chapter 9000 Appendix K, Safety and Health Policy for personnel decontamination.

A sample decontamination plan for commercial vessels that may have been affected and/or transited through oil slicks follows.

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Sample Commercial Deep Draft Vessel Evaluation and Cleaning Plan

Purpose

This plan serves to identify general guidance procedures to be followed by commercial vessels that may have transited through oil slicks en route to MSU Morgan City, LA. It will be used for all commercial vessels, either contaminated or suspected of being contaminated with oil, to confirm they are non-oiled or return them to a non-oiled state.

Concept Overview

In view of the potential for vessels to be affected by oil from this incident, the Unified Command has approved a procedure for the pollution evaluation of deep draft commercial vessels and a method for decontamination. The Unified Command has established the Fairway Anchorage centered at location **XX-XX.XN XXX-XX.XW** as the decontamination site for any oiled vessels requesting entry into the Mississippi River.

The primary focus of the decontamination operation will be to expedite the cleanup of contaminated commercial vessels in a safe, organized, and efficient manner which will minimize environmental impact, damage and waste generation. Team leaders on scene conducting decontamination operations will be responsible for the coordination of operations with the Incident Command Post. Vessels are required to undergo decontamination if sheen emanates from the hull or if oil is visibly attached.

Safety

All required Personal Protective Equipment (PPE) shall be utilized at all times during decontamination operations. In addition to the normal safe work practices used on scene, when using water jet washing systems, full face shields and eye protection should be used. HAZCOM procedures will be followed while handling any chemicals per the MSDS. The Unified Command's Safety Officer will ensure that all site safety instructions are followed.

The Unified Command's on-scene representative (a qualified USCG member with input from the Site Safety Officer) will make a final "go / no-go" decision to include but not limited to safety of the personnel on-scene, weather concerns, sea state (generally operations will not take place in seas greater than 3 feet) and effects on wildlife (dolphins, whales, birds, etc).

Vessel Safety Concerns

In the event the vessel being decontaminated is not able to anchor and machinery is running the decontamination team leader shall use their discretion concerning the distance from the stern the crews can safely operate. The team leader shall contact the operations section chief to receive further guidance on a case by case basis.

Monitoring, Documentation, and Reporting

The Unified Command's on-scene representative should monitor for efficacy of cleaning, presence of marine species and/or birds in the operation area, and operational success of containment and recovery. The results of all monitoring elements should be documented by report using the Monitoring, Documentation, and Reporting Form. That report and photos, if appropriate, should be submitted from the FOSC to the RRT-VI Co-Chairs upon conclusion of the cleaning activities within three working days.

Procedures

Prior to entering port, Deep Draft Commercial Vessels will undergo necessary decontamination screening procedures.

1. Deep Draft Commercial Vessels departing from any port from Houston, TX to Panama City, FL, should submit a self-evaluation form to the MSU Morgan City Notice of Arrivals Desk (504-365-2361/2362) no less than 24 hours prior to entering the Morgan City COTP Zone. Vessels that do not may encounter administrative delays in the processing of their Notice of Arrival.

2. Following the self inspection, the vessel master or agent will determine if the designated "clean" standard (vessel not/no longer sheening) established by the Unified Command is met.

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3. If the vessel completes the self-examination and deems itself “clean”, further verification will be made by the Louisiana River Pilots’ Association. Pilots will conduct a brief sweep around the vessel to ensure the vessel does not pose a pollution risk.

4. If the vessel is deemed unclean by either the self-assessment or the pilot inspection an attempt will be made to decontaminate the vessel utilizing high volume saltwater from an offshore vessel platform fire monitor system. If unsuccessful a second method using a lift and float type product (XXXX) will be mixed on-scene and used via the same method. A boom will be used along with absorbent pads to capture, to the maximum extent possible, all products of the decontamination process when feasible given weather, sea conditions, and safety factors.

5. Once a vessel is deemed “unclean”, either by the master or pilot, a report will be made to Morgan City’s VTS and Sector Morgan City’s Command Center. The Command Center will pass the information to the Ops Section Chief who will notify XXXXXXXX, the contracted Oil Spill Response Organization (OSRO).

6. XXXX will dispatch the necessary assets, along with a USCG representative to conduct the cleaning. The USCG representative on scene will determine when the vessel is “clean” and clear entry.

7. Upon completion of decontamination, XXXX’s team will allow final inspection by vessel representatives and the on-site verifying USCG representative. This does not preclude representatives from monitoring the cleaning of the vessel as it occurs.

8. A fixed or portable fire monitor will systematically clean contaminated surfaces of the vessel using water and dispersant.

9. Any solid oil on the hull will be pressure washed and recovered by response personnel using sorbent material and nets.

10. Where permissible, decontamination will be completed on all solid surfaces by jet washing. Non permissible areas are locations where safety could potentially be endangered, such as the stern of the vessel while engaged, or if environmental conditions exist that do not allow for safe operations.

11. Decon team leaders, safety observer, the USCG verifying representative, or any other involved parties are required to report any of the above conditions, or others, that do not allow for safe operations. Once unsafe operations are reported to a Site Safety Officer, cleaning operations shall be suspended until conditions change, or if alternate operations are approved by the Unified Command.

Surface Washing Agents

The only surface washing agent approved for vessel decontamination per this plan will be the lift and float agent XXXX. It, along with water, will be the only washing agents used during offshore decontamination operations.

Vessel Decontamination Equipment

The following identifies the minimum necessary equipment to be used while conducting hull decontamination of marine vessels.

Decontamination Task Forces are to be utilized with additional systems as needed. Each task force will consist of the following:

- Work boat(s)

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- Fixed or portable fire monitor
- XXXX
- Cleaning personnel
- Sorbent Boom and pads
- Sorbent nets
- Site Safety Officer
- USCG representative who will determine when the vessel is clean and cleared for entry.

SAMPLE

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Vessel Assessment Reporting Form

Date and Time of Report: _____

Name of vessel: _____

IMO or Official No. : _____

Type of vessel: _____

Cargo: _____

Tonnage: _____

Draft: _____

Origin: _____

Destination (Facility): _____

Vessel contact number (If available): _____

Agent contact number: _____

Was any oil or sheen sighted during the vessel's transit into port? _____

If so, where did your vessel sight this oil slick, sheen, or residue?

Did your vessel transit through any of the slick or sheen at any time?

Was there or is there now any evidence of oil on your vessel's hull/structure? ____

Estimate how much and what percentage of the vessel's hull/structure is oiled? __

Estimate distance from hull that silver sheen extends?

Less or greater than 5 meters out? Less or greater than 15 meters aft? If so, estimate how much and what percentage of the vessel's hull is covered by oil? ____

What procedure was taken to determine if oil was present on your vessel's hull? _

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Monitoring, Documentation, Reporting Form

For use of surface washing agents offshore COTP Morgan City COTP Zone for DECON of vessels.

Date: _____ Time: Start: _____ Finish: _____

Vessel Name: _____ Vessel Length: _____

Total area to be cleaned (square feet): _____

Surface Washing Agent: _____

LAT/LONG of cleaning location: _____

On-scene weather and seas: _____

Lift & Float product? ☐ Yes ☐ No

If "NO", reason(s) for selection of a dispersing product:

Presence/description of any observed wildlife in operating area: (Note: Operations not to affect species of birds, marine mammals, or sea turtles. Operations should cease, and presence of species in the area should be reported to the Wildlife Group of the Operations Section at phone: _____)

Cleaning:

☐ Effective

☐ Partially Effective

☐ Not Effective

Estimated Percent Effectiveness: _____ %

Containment & Recovery:

☐ Effective

☐ Partially Effective

☐ Not Effective

Estimated Percent Effectiveness: _____ %

Estimated amount of oil and rinse water recovered: _____ gallons

Photos taken?

☐ Yes

☐ No

Comments: _____

Wildlife affected?

☐ Yes

☐ No

Comments: _____

Sheen or oil visible after operations complete?

☐ Yes

☐ No

Comments: _____

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Additional Comments/Observations:

SAMPLE

3262 Disposal Guidelines

It is critical for the OSC in a immediate removal operation to recognize that contaminated soils, dredge spoils, drums, tanks, refuse, water or other associated materials are to be considered hazardous wastes and must be disposed of as such in accordance with the Resource Conservation and Recovery Act (RCRA), as well as local and state regulations controlling the disposal of hazardous wastes. Many of the removal actions employed by the OSC will in fact create a situation in which the OSC has assumed the responsibility as a generator of hazardous wastes. These wastes then become subject to the “cradle to grave” manifesting procedures currently in effect under the governing RCRA regulations.

Recovered petroleum products that are not accepted by a refinery or that cannot be recycled must be managed as a waste. Waste classified as hazardous under either the Resource Conservation Recovery Act (RCRA) or state regulations must be transported to a permitted or interim status hazardous waste facility. Hauling of the waste must be done by a state hazardous materials hauler. The licensed hauler must have a U.S. EPA I.D. number. Prior to removal of the hazardous waste from on-site/temporary storage, a uniform hazardous waste manifest (DHS- 8022A) must be prepared by the generator (e.g. RP) for recovered petroleum and other contaminated materials.

The OSC must ensure that the hazardous wastes generated from his/her removal actions are transported by an approved hazardous waste hauler to an approved hazardous waste facility. All materials shipped off-site must be transported in compliance with applicable regulations. These include RCRA, 40 CFR Part 262-

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263, DOT Hazardous Materials Regulations, 49 CFR Part 171-178, and any applicable state regulations. The OSC should consider the possibility of employing on-site treatment (e.g. incineration, biological treatments, chemical treatments, waste stream treatment methods, etc.). Approved and effective on-site treatment will often eliminate the dilemma affiliated with hauling hazardous waste to a hazardous waste facility- the dilemma of simply relocating your problem to some other geographic area where it may eventually develop into someone else's problem.

Depending upon climatic conditions and material compatibilities of personal protective equipment (PPE), waste can be minimized through the selection of reusable equipment, when possible. For instance, heavy gloves and boots which can be effectively decontaminated and reused can minimize the generation of oil-contaminated disposable gloves and boots as long as such equipment use is approved by the SOFR. Reusable rain gear may also be used instead of disposable suits, if approved. Such decisions should be made early in the response process in order to minimize generating containerized, contaminated, PPE.

Both oil and oily water recovered from skimmer operations should be offloaded to facilities where it can be effectively recycled/managed with established process and treatment streams. Such facilities would include terminals, refineries, and commercial re-refiners/re-claimers/recyclers. These facilities can often provide temporary tank storage, when necessary. Oil debris which is recovered with skimmed oil should be maintained in secure, temporary storage until it is sufficiently characterized for disposal (also see Decanting Policy Chapter 9000, Appendix E.)

Synthetic sorbents (i.e. pads, sweeps, and booms) have become standard response materials in the mechanical recovery of spilled oil. Their oleophilic, hydrophobic character makes them efficient at separating oil and water and they are routinely used to recover oil from solid surfaces as well (e.g.; rubble, cobble and boulder shorelines; equipment/gear, vessels' etc.) Since oiled sorbent material often constitutes a substantial percentage of the oily solid waste generated during spill response and cleanup, opportunities for minimizing this waste volume should be considered.

Some sorbents are designed to be reusable (i.e., mechanized rope-mop skimmers) or can be recycled onsite with inexpensive gear (e.g., appropriate barrel-mounted wringers). Sorbent manufacturers' instructions should be followed regarding the limits of effective reuse for their individual products. It is also possible to replace sorbent sweep and booms with recyclable boom and other appropriate gear in circumstances where floating oil can be efficiently recovered without generating oiled sorbents. For example, in good-access, low energy shoreline areas, it may be possible to use containment boom and recover the trapped oil with vacuum trucks instead of contaminating large volumes of sorbent.

Louisiana State Disposal Guidelines can be found in Chapter 9000, Appendix P.

Disposal practices shall be in accordance with state disposal guidelines.

3270 Response Technologies for Oil Spills

Though mechanical cleanup and recovery is always the initial and primary response tool, other response technologies are considered by the Southeast Louisiana Area Committee to be integral components of effective spill response that should be available for use, as appropriate, in a timely and efficient manner. The use of response technologies such as in-situ burning, dispersants, and other oil spill cleanup agents should be considered when the environmental benefit of their use is expected to outweigh adverse effects.

It is imperative that all response technologies are employed as soon as practicable following an oil spill. However, it is particularly important that materials are strategically stockpiled and decisions regarding the use of dispersants and in-situ burning be made as quickly as possible to increase their effectiveness on marine oil spills. Accordingly, Region VI RRT and the Southeast Louisiana Area Committee have established pre-approval zones, case-by-case zones, and no use zones for the use of dispersants. A policy has also been established to define the conditions under which in-situ burning may be conducted on a pre-approved or case-by-case basis and conditions under which burning will not be allowed. The FOOSC, with

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the assistance of the UC, will determine if use of these response technologies meet the pre-approval criteria established by the Region VI RRT for the Southeast Louisiana Area Committee area of responsibility.

Our understanding of dispersant and in-situ burning efficacy and toxicity are evolving and the appropriateness of their application is subject to change based on field and laboratory testing. As new information becomes available, these policies will be revisited, modified, and enhanced as appropriate.

The NCP, 40 CFR Part 300.910 (Subpart J) outlines the circumstances under which chemical agents or other additives may be used to remove or control oil discharges. Part 300.910(a) allows RRTs and Area Committees, as part of their planning process, to address procedures for the use of these agents. This may include preauthorization plans. This gives the Natural Resource Trustees representatives to the RRT the ability to approve, disapprove, or approve with modifications and preauthorize plans developed by the RRTs and Area Committees for the use of chemicals and additives to remove and control oil discharges. Part 300.910(b) authorizes the FOSC, with the concurrence of the Unified Command and the RRT, to authorize the use of dispersing, surface-washing, surface-collection, bioremediation, or burning agents on a case-by-case basis.

It is the policy of the Southeast Louisiana Area Committee to also consult appropriate tribal governments with off reservation treaty rights in navigable waters threatened by a discharge of oil, when practicable. Part 300.910(d) further authorizes the FOSC to use any agent listed above without requesting permission if its use is necessary to prevent or substantially reduce a hazard to human life.

The Commandant of the USCG has pre-designated the USCG Captain of the Port under his/her jurisdiction as FOSC for oil spills, and has delegated authority and responsibility for compliance with Section 311 of the Federal Water Pollution Control Act (Clean Water Act) to them. The Administrator of the EPA has designated EPA On-Scene Coordinators as FOSCs for the inland zone and has delegated authority and responsibility for compliance with Section 311 of the Federal Water Pollution Control Act (Clean Water Act) to them.

As required by the NCP, 40 CFR Part 300.905, in order for a FOSC to authorize the use of a dispersing, surface washing, surface collection, or bioremediation agent, it must be listed on the NCP Product Schedule. Burning agents are not listed on the NCP Product Schedule. The U.S. EPA maintains the NCP Product Schedule and it can be found at <http://www.epa.gov/OEM/content/ncp>. The Product Schedule does not authorize or pre-approve use of any of the listed products. However, the FOSC may not authorize use of a product that is not listed on the Product Schedule unless its use, in the judgment of the FOSC, is necessary to prevent or substantially reduce a hazard to human life.

3270.1 Dispersant Use

Areas within the Southeast Louisiana Area Committee area of responsibility fall into three different zones with respect to dispersant use: a pre-approval zone, case-by-case approval zones, or no dispersant use zones. The FOSC will determine whether to authorize the use of dispersants through the information gathering and decision-making process outlined in the Southeast Louisiana Area Committee Dispersant Use Policy found in Chapter 9000, Appendix D.

3270.2 In-Situ Burning

In-situ is the Latin term for “in-place”. In-situ burning as it relates to oil spills is the controlled burning of oil on water at the spill site. While the focus of the policy is on open-water areas in the marine environment, it also applies to in-situ burning in inland areas. The Southeast Louisiana Area Committee In-Situ Burning Policy is found in Chapter 9000, Appendix C.

3270.3 Bioremediation

Bioremediation is a treatment technology that enhances existing biological processes to accelerate the decomposition of petroleum hydrocarbons and some hazardous wastes. Bioremediation has been used extensively in waste water treatment of spilled oil. The most extensive field research efforts have been the shoreline treatment studies in Alaska following the Exxon Valdez incident. This research suggested that shoreline treatment by nutrient enhancement significantly increased degradation rates of oil when

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compared to untreated shoreline areas. The benefits of bioremediation, however, have not been adequately demonstrated through field applications. Consequently, this technology should be considered more experimental than an accepted standard for clean-up of oil spills. The Southeast Louisiana Area Committee Bioremediation Policy is found in Chapter 9000, Appendix Z, and Bioremediation Policy.

3270.4 Surface Washing Agents

Surface washing agents may be considered when conventional flushing techniques are inadequate in removing oil residues to the required cleanup standard or when cleanup times can be reduced such that a significant positive impact on overall cleanup goal is achieved. The RRT VI Surface Washing Pre-Approval Guidelines can be found at:

http://www.epaossc.org/sites/5083/files/rrt6_surface_washing_preapproval_2003.pdf. The Southeast Louisiana Area Committee Surface Washing Policy is currently under development (ETA 2013).

3270.5 Surface Collection Equipment

Collection and containment equipment/tactics can be found in Chapter 9000, Appendix F, and Best Management Practices.

3270.6 Special Monitoring of Applied Response Technologies (SMART)

Special Monitoring of Applied Response Technologies (SMART) is a cooperatively designed monitoring program for in situ burning and dispersants. SMART relies on small, highly mobile teams that collect real-time data using portable, rugged, and easy-to-use instruments during dispersant and in situ burning operations. Data are channeled to the Unified Command (UC) (representatives of the spiller and the state and federal governments who are in charge of the spill response) to address critical questions:

Are particulates concentration trends at sensitive locations exceeding the level of concern?

Are dispersants effective in dispersing the oil?

Having monitoring data can assist the Unified Command with decision-making for dispersant and in situ burning operations.

The SMART program is a joint project of these agencies:

U.S. Coast Guard

NOAA

U.S. Environmental Protection Agency

Centers for Disease Control and Prevention

Bureau of Safety and Environmental Enforcement

More information regarding SMART may be found in Chapter 9000, Appendix I.

3270.7 Gasoline and Other Flammable Liquids Response

Spills of gasoline and other flammable liquids, including many crude oils, pose significant response challenges as well as serious health and safety concerns for responders and communities downstream and downwind from the discharge/release. Gasoline range products are finished gasolines and volatile hydrocarbon fractions used for blending into finished gasoline, including straight-run naphtha, alkylate, reformate, benzene, toluene, xylene, and other refined petroleum products with a flash point below 100 degrees F (37.8 deg. C). When these types of products are spilled into the environment, it is imperative to take immediate steps to control the source of the release (where safe), to eliminate all possible ignition sources, to quickly establish isolation distances, to notify regulatory and local response agencies, and to initiate a preliminary site safety plan prior to any response activities. However, it is essential that no

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personnel enter a potentially unsafe environment prior to an initial safety assessment, including vapor monitoring for flammable, reduced oxygen, and toxic levels.

In many cases, highly flammable liquids should not be contained during spill response. Containing gasoline and other highly flammable liquids increases the risk of fire by delaying dispersion of vapors into the atmosphere. The risks posed by response techniques such as booming and applying foam to spilled gasoline and other flammable liquids are warranted only under very limited circumstances. However, in some cases and as judged by the FOSC, Incident Command, or Unified Command, containment and the use of foam may be appropriate and necessary in response to an imminent threat to the public health and safety, and the environment. Deflection and protection booming can be used to move flammable liquids away from sensitive areas but must be conducted in a safe manner, within safe atmospheric levels. In unaffected downstream or down current areas at risk, boom should be deployed prior to arrival of the product. Though mechanical recovery of flammable liquids on water can be an effective practice under some circumstances, often the more prudent response option is to allow flammable liquids to evaporate and dissipate.

Given the inherent danger of booming flammable liquids on water, as well as the products' rapid rates of evaporation and dissipation, the Southeast Louisiana Area Committee adopts the following guidelines for responding to gasoline and other flammable liquid discharge/releases on water. *Note that these are only guidelines. Each release must be evaluated based on its particular circumstances. Safe work practices and professional judgment should always prevail:*

Control the source of flammable liquids as quickly as possible, when safe to do so;

Ensure that proper safety precautions are taken to prevent accidental ignition and risk to responding personnel and the general public. An evacuation may be warranted under some circumstances. In many cases, the best response option may be to allow the spilled product to spread and evaporate;

Notify emergency and regulatory response agencies. Involve local fire jurisdictions *immediately*;

Ensure proper site hazard analysis and risk assessment are conducted to determine the scope of the discharge/release and initiate the development of a Site Safety Plan;

Establish control zones as soon as possible. Track and predict movements of both liquid and vapors and re-establish control zones as appropriate;

Eliminate all potential ignition sources within appropriate control zones;

Prevent entry of the spilled product into waterways, sewers, or confined areas;

Conduct air monitoring throughout the response;

Note: Air monitoring must be conducted with the greatest of care. Air monitoring both increases the exposure danger to responders and introduces possible accidental ignition sources. Nearby population centers should be monitored, as should the leading edge of the vapor cloud. However, in open water areas it MAY make more sense for responders to stay away from the concentrated area around the spilled material. In any area that is being monitored, the monitoring should be conducted continuously, if possible. Also, only direct reading, intrinsically-safe, continuously monitoring instruments should be used. Lower Explosive Limits (LEL), oxygen, H₂S, and benzene levels should all be monitored. In addition, readings should be captured for record keeping in a database such as the EPA's Scribe program.

Coordinate response efforts with all agencies- work within a Unified Command;

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Identify and prioritize environmental concerns. Conduct exclusion, deflection, and protective booming downstream or down current as appropriate, outside of hazardous atmospheres and prior to the arrival of the released product;

Workers should avoid touching, walking, or boating through the spilled product;

Avoid prolonged inhalation exposure to fumes. Consult appropriate reference guides for exposure limits;

Allow the product to evaporate and dissipate unless there is an imminent threat to public health and safety;

When appropriate, use fire monitors/water fog spray to move product out from under docks and other collection areas where the product concentrates;

Stage firefighting foam (appropriate to the type of flammable liquid discharged/released) and application equipment, if appropriate; and

All equipment used when handling the product must be grounded.

3280 Decanting

When oil is spilled on the water, mechanical recovery of the oil is the principle approved method of responding. However, the mechanical recovery process and associated systems necessarily involve placing vessels and machinery in a floating oil environment. Incidental returns of oil into the response area, such as oil that falls back into the recovery area from vessels and machinery that are immersed and working in the oil, is an inevitable part of the mechanical recovery process. Similarly, separation or “decanting” of water from recovered oil and return of excess water into the response area can be vital to the efficient mechanical recovery of spilled oil because it allows maximum use of limited storage capacity, thereby increasing recovery operations.

This practice is currently recognized as a necessary and routine part of response operations. In addition, some activities, such as those associated with oil recovery vessels, small boats, and equipment cleaning operations may result in incidental discharges. These activities may be necessary to facilitate response operations on a continuing basis, and all of these activities are considered to be “incidental discharges”. The Southeast Louisiana Area Committee Decanting Policy is found in Chapter 9000, Appendix E.

3290 Natural Resource Damage Assessment

Natural Resource Damage Assessment (NRDA) are outside the sphere of most emergency spill response actions, NRDA, activities generally do not occur within the structure, processes, and control of the Incident Command System. However, particularly in the early phase of a spill response, many NRDA activities overlap with environmental assessments performed for the sake of spill response. Because NRDA is carried out by natural resource trustee agencies and/or their contractors, personnel limitations may require staff to perform NRDA and response activities simultaneously. Therefore, NRDA staff should remain coordinate with the spill response organization, and need to work with the LNO to coordinate with the Unified Command, Environmental Unit, Wildlife Rescue/Rehabilitation Branch, and the Scientific Support Coordinator to resolve any problems or address areas of overlap. While NRDA resource requirements and cost may fall outside the responsibility of the Logistics and Finance sections, coordination is again important.

3290.1 Natural Resource Trustee Notification Guidelines

Response agencies shall also ensure that all appropriate notifications are made. The OSC shall promptly notify Natural Resource Trustees of discharges or release according to the following Notification Guidelines under their jurisdiction. The OCSs shall coordinate all response activities with the Natural Resource Trustees.

Trustees are defined in the National Contingency Plan as Federal, State, or tribal officials who are to act on behalf of the public to manage and control natural resources. In addition to the operational notifications

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described above, trustees must be notified of oil spills and hazardous substance incidents that may impact or threaten natural resources under their care. When it is unclear if an incident meets a given trustee's notification threshold, the trustee should be notified.

3290.2 Tribes

Tribes with reservations and/or usual and accustomed hunting or fishing grounds within the state of Louisiana applicable to this plan, must be notified by the Federal On-Scene Coordinator in the event a spill may impact or threaten to impact any of their resources. Since boundaries for usual and accustomed hunting and fishing grounds may be complicated, it is recommended that the Department of the Interior and/or the Bureau of Indian Affairs (BIA) be consulted to ensure proper notifications are made. Tribes must also be notified if there may be potential impact from a spill or spill response operations to any tribal cultural resources. Again, DOI and BIA may assist in identification of tribes for notification; however, it remains the FOSC's responsibility to make all proper notifications to tribes.

For Tribal Lands/Usual and Accustomed Areas in Louisiana, the protocol is to first contact the Louisiana State Historic Preservation Office (SHPO). The SHPO will then provide a list of contacts for Tribes to be contacted based upon the geographic area of response activities. Thereafter, direct contact will be made with involved Tribes.

The following is a list of Tribes with areas of interest within the scope of this plan.

Federal Tribal Historic Preservation Officers can be found at:

http://www.nathpo.org/THPO/state_list.htm#Louisiana

Louisiana

Chitimacha Tribe of Louisiana

Kimberly Walden, THPO

PO Box 661

Charenton, LA 70523

Tel: 337.923.9923

Fax: 337.923.6848

Email: kim@chitimacha.gov

Jena Band of Choctaw Indians

Dana Masters, THPO

PO Box 14

Jena, LA 71342

Tel: 318.992.1205

Fax: 318.992.8244

Email: danammasters@aol.com

Tunica-Biloxi Tribe of Louisiana

Earl J. Barbry, Jr., THPO

Tunica-Biloxi Tribal Historic Preservation Office

PO Box 1589

Marksville, LA 71351

Tel: 318.253.8174 x 6451

Fax: 318.253.7711

Email: earlii@tunica.org

Website: <http://www.tunica.org>

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3300 Emergency Response

3310 Salvage

Before, during and/or after an incident, or potential incident, salvage assistance may be required. A salvage plan may be developed within the response organization for, but not limited to, vessel stranding, vessel sinking, and rescues (towing). The IC/UC will review and approve or disapprove the salvage plan based on the resulting risk to human life, port security, and the environment. Area specific information regarding salvage is located in Chapter 8000.

Initial rescue efforts will have priority over pollution response efforts, to the extent that they may interfere. Subsequent to any rescue efforts, the pollution response effort and salvage efforts may be conducted concurrently. The OSC will prioritize actions when conflict between salvage and pollution response efforts cannot be eliminated.

The MSU Morgan City COTP has jurisdiction over vessel salvage; this does not preclude the involvement of any other agencies with respect to spill prevention or response.

For general guidelines to follow in responding to an incident that requires salvage operations refer to US Navy Salvage Manual Volume 1 – 6
http://www.supsalv.org/00c2_publications.asp?destPage=00c2&pageId=2.6 and Chapter 8000, Salvage and Marine Firefighting Plan.

There are several salvers in the Morgan City area. For more information regarding local salvers see Chapter 8000, Salvage and Marine Firefighting Plan.

Contacts for Salvage References and Support:

- U.S. Coast Guard Marine Safety Center Salvage Engineering Response Team (SERT)
 - During business hours: (202) 327-3985
 - Duty email: SERT.Duty@uscg.mil
 - After hours contact the USCG Headquarter Command Center: (202) 267-2100

The Marine Safety Center Salvage Engineering Response Team (SERT) is comprised of 8-10 staff engineers who are on call 24 hours a day, 7 days a week to provide immediate salvage engineering support to the Coast Guard Captains of the Port (COTP) and Federal On-Scene Coordinators (FOSC) in response to a variety of vessel casualties. Specifically, SERT can assist the COTP and FOSC manage and minimize the risk to people, the environment, and property when responding to vessels that have experienced a grounding, allision, collision, capsizing, or structural damage. SERT provides this assistance by performing numerous technical evaluations including: assessment and analysis of intact and damaged stability, hull stress and strength, grounding and freeing forces, prediction of oil/hazardous substance outflow, and expertise on passenger vessel construction, fire protection, and safety.

- Navy Supervisor of Salvage:
 - Supervisor of Salvage Operations (202) 781-2736
 - After hours and weekends (NAVSEA Duty Officer) (202) 781-3889
 - Switchboard (202) 781-1731
 - <http://www.supsalv.org>

SUPSALV can provide the services of naval architects, may provide the services of naval salvage vessels, and has access to contracts, which will provide the services of commercial salvers and equipment.

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SUPSALV developed and has available software for rapid analysis of longitudinal strength and intact/damaged stability; the software is known as Program of Ship Salvage Engineering (POSSE).

3320 Fire Departments

The following link, http://sfm.dps.louisiana.gov/sfm_directory.htm, is to the Louisiana Fire Department Directory. This is a "real-time" directory. The information contained in the directory is maintained by the local fire service.

3400 Air Operations Branch

The Air Operations Branch Director is responsible for all aspects of incident aircraft from supporting tactical operations to logistical support of the aircraft. The primary responsibilities of the Air Operations Branch Director include:

- Request declaration or cancellation of restricted air space,
- Establish air traffic control procedures between helibases & helispots, and
- Coordinate all over flight needs associated with the incident.

3410 Temporary Flight Restriction Zones:

A temporary Flight Restriction (TFR) Zone is similar in nature to a COTP safety zone in the maritime environment, and is normally used only when absolutely necessary. There are three situations in which it may be authorized:

- To protect persons and property in the air and on the surface hazards,
- To provide a safe environment for disaster relief aircraft, and
- To prevent an unsafe congestion of sightseeing and other aircraft above an incident or event that may generate a high degree of public interest.

To obtain a TFR, call the Area Manager at Houston Air Route Traffic Control Center; which supervises all FAA facilities in southern Texas, Louisiana, southern Mississippi, southwestern Alabama, and areas in the Gulf of Mexico.

The following information is required when requesting a TFR:

- Name and organization of person recommending or requesting TFR,
- Brief description of the situation,
- Location, size, and altitudes of the restricted area requested,
- Estimated duration of restrictions, and
- Name of agency responsible for on-scene emergency activities and telephone of other communication contact.

3500 Staging Areas

The following table is a list of previously identified staging areas. The identification of potential staging areas is constantly on-going and updates will be added during the annual review process.

Staging Areas/Boat Ramps

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Acadia Parish

WATERWAY	LOCATION	CITY	AGENCY	#LANES	RAMP SURFACE	CONDITION
Bayou Plaquemine	Hwy 90 3 mi south of I-10		DOTD	2	Petrofley	Two Ramps
Mermentau River	Hwy 90 in Mermentau		Parish	2	Concrete	Two Ramps
Bayou Queue De Tortue	Hwy 13, 9 mi S of Crowley		DOTD	2	Shell	Two Ramps
Bayou Blanc	Crowley City Park		City	1	Limestone	Poor

Assumption Parish

WATERWAY	LOCATION	CITY	AGENCY	#LANES	RAMP SURFACE	CONDITION
Lake Verret	LA Hwy 1016-1	Belle River	WL&F	1	Concrete	
Bayou LaFourche	LA Hwy 398, 9 mi NW of Thibodaux	Thibodaux	DOTD	2	Concrete	
Little Grand Bayou	End of Hwy 402	Pierre Part	Parish	2	Shell	
Lake Verrett	End of Hwy 402 at Attakapas Landing		Parish	2	Concrete	
Belle River	LA Hwy 1016-2		Parish	2	Concrete	
Himalaya Canal	LA Hwy 1012		Parish	1	Shell	
Alligator Bayou	LA Hwy 398	Parish		1	Shell	
Bayou Corne	LA Hwy 69	Pierre Part	Parish	1	Shell	

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Iberia Parish

WATERWAY	LOCATIO N	CITY	AGENCY	#LANES	RAMP SURFACE	CONDITION
Lake Fausse Pt	Lake Fausse Pt. State Park	State Parks		1	Concrete	New park, open 1985
Spanish Lake	Off Hwy 82, 4 mi NW o New Iberia	New Iberia	Lake Comm	2	Concrete	Good
Avery Canal	End of Hwy 329 Avery Island		Parish	1	Concrete	Good
Lake Fausse Pt.	4 mi. SE of Loreauville (Marshall Ramp)	Loreauville	Parish	2	Concrete	Good
Lake Dautrieve	End of Hwy 345		Parish	1	Wood	Poor
Jeanerette Canal	3 mi NE of Jeanerette		Parish	2	Wood	Fair
Lake Fausse Pt	Atchafalaya Basin Levee (Sandy Cove)		Parish	2	Concrete	Fair
Lake Fausse Pt.	Atchafalaya Basin Levee (Ruiz Landing)		Parish	2	Concrete	Good
Patout Bayou	Hwy 83, N of Weeks Island		Parish	2	Concrete	Good
Delahoussaye Canal	3 mi SW of Jeanerette (Broussard Ramp)	Jeanerette	Parish	2	Wood	Fair
Loreauville	5 mi SE of Loreauville (Bourgeois Boat)	Loreauville	Parish	2	Concrete	Good
Delcambre	Off Hwy		Parish	1	Concrete	Good

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Iberia Parish

WATERWAY	LOCATION	CITY	AGENCY	#LANES	RAMP SURFACE	CONDITION
Nelson Canal	Iberia Off Hwy 674, 1 mi S of New Iberia Delahoussaye Ramp	New Iberia	Parish	1	Wood	Poor
Commercial Canal	Port Of Iberia Hwy 90		Parish	2	Concrete	Good
Little Lake Long	Iberia Atchafalaya Basin Levee south end of Little Lake Long	New Iberia	Parish	1	Concrete	Good
Bayou Teche	New Iberia City Park	City of New Iberia	City	2	Concrete	Good
Bayou Teche	Jeanerette Park	City Of Jeanerette	City	2	Concrete	Good
Lake Fausse Pt						

Lafayette Parish

WATERWAY	LOCATION	CITY	AGENCY	#LANES	RAMP SURFACE	CONDITION
Vermilion River	Beaver's Park in Lafayette	Lafayette	City	2	Concrete	Good

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Vermilion River	Henry Heyman Park in Lafayette	Lafayette	City	2	Concrete	Good
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Lafourche Parish

WATERWAY	LOCATION	CITY	AGENCY	#LANES	RAMP SURFACE	CONDITION
Bayou Cut-Off	Raceland (Butch Hill Ramp)	Raceland	Parish	2	shell	good
Pass Fourchon	Hwy 3090, 7 mi W of Grand Isle	Fourchon	Parish	6	concrete	good
Bayou Lafourche	Golden Meadow (Golden Meadow Launch)	Golden Meadow	Parish	2	concrete	good
Theriot Canal	Hwy 308, 3 mi W of Raceland	Raceland	Parish	3	shell	good
Bayou Lafourche	Raceland (Amerada Launch)	Gheens	Parish	1	shell	Unknown
Company Canal	Hwy 654, near Gheens		Parish	1	shell	Bad drop off
Grand Bayou	Choctaw (Percle's Choctaw Camp Launch)		Parish	1	shell	unknown
Grand Bayou	Choctaw Road (District 5 Launch)	Choctaw	Parish	1	shell	Good
Intracoastal Waterway	Across from VFW in Larose	Larose	Parish	1	shell	Open/Bad shape
Bayou Blue	Hwy 24 4 mi SW of Larose (Texas-Gulf Launch)	Bourg-Larose	Parish	2	shell	Closed
Scully Canal	4 mi SE of Larose Hwy 308 (Clovelly	Larose	Parish	1	Shell	Bad Road/ Good Launch

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	Farms Launch) OSE					
Breton Canal	East 73 rd Street	Galliano	Parish	1	Concrete/Shell	Shut Down
Company Canal	Bayouside Park	Lockport	Parish	3	Concrete/Shell	Good
Bayou Lafourche	Bayouside Park	Thibodaux	City	1	Concrete	Bad Drop

St. Martin Parish

WATERWAY	LOCATION	CITY	AGENCY	#LANES	RAMP SURFACE	CONDITION
Bayou Teche	Longfellow-Evangeline State Commemorative Area		State Park	2	Cement	Good
Atchafalaya River	Junction of I-10 and Hwy 3177	Butte Larose	State Park	1	Gravel	Poor
Bayou Benoit	Basin side of Bayou Benoit- 5 miles E of Choteau Holmes	Choteau Holmes	Police Jury	1	Cement	Poor
Lake Deuterive	Near Benoit Landing on landside of levee going into Lake Deuterive	Choteau Holmes	Police Jury	1	Gravel	Poor
Bayou Portage Guidry	Off Hwy 3039	Guidry	Police Jury	1	Gravel	Fair
Atchafalaya Barrow Pit	Basin side of Levee near Catahoula exit off levee	Catahoula	Police Jury	1	Cement	Good
Catahoula Lake	Within Catahoula city Limits	Catahoula	Police Jury	1	Cement	Good

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Catahoula Lake	1 mi N of Catahoula	Catahoula	Police Jury	1	Gravel	Fair
Atchafalaya Barrow Pit	Near Sunshine Bridge 1 mi from Henderson	Henderson	Police Jury	1	Gravel	Fair
Atchafalaya Barrow Pit	In town of Henderson	Henderson	Police Jury	2	Cement	Good
Butte Larose Bay	In Dick Davis Park 1 mi W of Butte Larose	Fausse Point	Police Jury	1	Gravel	Fair

St. Martin Parish

WATERWAY	LOCATION	CITY	AGENCY	#LANES	RAMP SURFACE	CONDITION
Grand Bayou Lake Fausse Point	Off levee road on Lake Fausse Pt.	Catahoula	Police Jury	1	Shell	Poor
Catahoula Lake	In Boudreaux Park Catahoula		Police Jury	1	Cement	Good
Bayou Teche	In Cecilia near veteran's home		Police Jury	1	Cement	Fair
Atchafalaya River	Hwy 3177 at Butte Larose		Police Jury	2	Cement	Good
Bayou Teche	Parks Rec Area		Town of Parks	2	Cement	Good
Bayou Teche	St. Martinville City Park		City of St. Martinville	1	Cement	Good
Lake	Martin	4 mi N of Parks off Hwy 31	WL&F	2	Concrete	Good

Terrebonne Parish

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WATERWAY	LOCATION	CITY	AGENCY	#LANES	RAMP SURFACE	CONDITION
Bayou Black	Gibson		Parish	2	Shell	Good
Houma Nav Canal	Near end of Hwy 311		Parish	2	Shell	Good
Marmande Canal	Theriot – Hwy 3011			2	Shell	Unknown
Bayou Petite Caillou	8 mi N of Cocodrie off Hwy 56		Parish	1	Shell	Unknown
Bayou Petite Callow	2 mi No of Cocodrie off Hwy 56		Parish	2	Concrete	Unknown
Petite Bayou Dularge	End of Hwy 315 Dularge Sporting Good		Parish	2	Concrete	Good
Bayou Barre	1 mi E of hwy 55 near Point-Au-Chene WMA on Pt Barre Rd					
Bayou Terrebonne	1 mi N of Montegut on Hwy 55		Parish	1	Shell	
Houma Canal	Hwy 315 near Intracoastal Waterway		Parish	1	Shell	Open
Canal St. Jean Charles	2 mi S of Pointe-Au-Chene WMA on Isle St Jean Charles Road off Hwy 665		Parish	2	Shell	Unknown

St Mary Parish

WATERWAY	LOCATION	CITY	AGENCY	#LANES	RAMP SURFACE	CONDITION
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Vermillion Bay	Cypremort Pt State Park		State Park	2	Concrete	Good
Bayou Teche	Baldwin State Park		Parish	1	Concrete	Good
East Cote Blanche Bay	End of Hwy 317 at Burns Pt		Parish	2	Concrete	Fair
Atchafalaya River	Atch. Basin East Levee off Hwy 70, 2 mi N of M.C. (J.C. Russo Ramp)		Parish	4	Concrete	Good
Wax Lake Outlet	Todd Ramp	Calumet	Parish	2	Concrete	Fair
Atchafalaya River	2 mi SE of Berwick near Intracoastal Waterway	Berwick	Parish	4	Concrete	Fair
Bayou Teche	Hwy 182 (Glenwild Ramp)	Bayou Vista	Parish	2	Concrete	Good
Six-Mile Lake	Verdunville		Parish	2	Concrete	Fair
Bayou Beouf	Marcell Landing	Amelia	Parish	2	Concrete	Good
Six-Mile Lake	1 mi N of Patterson (Wilson Ramp)		Parish	2	Concrete	Good
Bayou Beouf	Morgan City		Parish	2	Concrete	Good
Franklin Canal	Willow Street	Franklin	Parish	2	Concrete	Fair
Grand Lake	Myette Pt, 6 mi N of Franklin	Franklin	Parish	2	Concrete	Fair
Vermillion Bay	Hwy 319, 1 mi above Cypremort Pt	Cypremort Pt	Parish	3	Concrete	Good

St Mary Parish

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WATERWAY	LOCATION	CITY	AGENCY	#LANES	RAMP SURFACE	CONDITION
Lake Palourde	Lake End Park	Morgan City	City	4	Concrete	Good
Bayou Teche	Roseville Landing	Franklin	City	1	Concrete	Good
Bayou Teche	Parc-Sur-La-Teche	Franklin	City	1	Concrete	Good

Vermilion Parish

WATERWAY	LOCATION	CITY	AGENCY	#LANES	RAMP SURFACE	CONDITION
Vermillion River	Hwy 14 By-Pass	Abbeville	DOTD	2	Concrete	Unknown
Mayer Canal	Hwy 685 8 mi SE of Abbeville	Abbeville	DOTD	2	Shell	Fair
Schooner Bayou	Hwy 82, 6 mi S of Forked Island	Forked Island	Parish	2	Shell	Unknown
Intracoastal Waterway	Hwy 333	Intracoastal Waterway	Parish	2	Concrete	Good

Airports/Heliports

Airports and Aircraft Rental

Aircraft landing sites: Grand Isle (Exxon), Fourchon (Air Logistics and PHI), Cocodrie, South Lafourche Airport Houma airport, Morgan City (Air Logistics and Patterson airport), New Iberia Airport and ICY (Air Logistics and PHI) provide heli landing and refueling.

Description of aircraft requirements:

LOAD WEIGHT: Maximum load of aircraft that may land on runway. May be specified as tandem wheel, dual wheel, or single wheel if unspecified.

AVIONICS:

ILS: Instrument Landing System- provides indication of relative position of aircraft above or below glide slope and indication to right/left approach bearing.

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DME: Distance Measuring Equipment- shows constant distance along glide slope to runway barrier.

LOC: LOCALIZER- Sets aircraft avionics to airports specific settings.

VOR: Very High Frequency Omni-Directional Radio Beacon- provides bearing for inbound aircraft so they can have a precise bearing upon approach.

NDB: Non-Directional Beacon- provides same function as. used for redundancy in instrumentation.

Lighting: high intensity lighting is the best for all weather conditions and low is the worst.

Fuels: Prist - a commercial fuel additive that satisfies the requirements for military ant-icing substances such as alcohol.

Commercial airports:

1. South Lafourche Airport

Location: adjacent to Hwy 1 Galliano, LA

Runway: 3800 ft X 75 ft

Telephone: (985) 632-4422

Lat. 29-26.3N, Long. 090-15.8W

Avionics: N/A

Tower: N/A

Radio: N/A

Load weight (lbs): 12,500

Fuel: avgas, jet low intensity

Restrictions: Light fixed wing or rotary only. Conditions: Close proximity to LOOP Command Center. This airport isn't recommended for staging since they have a limited. The only recommendation is for heli and small fixed wing aircraft.

2. Houma-Terrebonne Airport:

Location: Hwy 24 Eastern side of Houma, LA.

Runway: 5001 ft X 200 ft

Telephone: (985) 876-6090/0584/6324

Lat. 29-34.1N, Long. 090-39.6W

Avionics: ILS, VOR, NDB

Tower: 0600-2000

Radio: tower 125.3 mhz, ground: 121.8 mhz, atis:120.25

Load weight(lbs):dual wheel 70,000; tandem 137,000

Fuel: avgas, jet, prist.

Lighting: medium intensity

Conditions: Airport has large tarmac with various hangars spread out over a wide area. Staging of equipment can easily be accomplished without interference to other airport traffic. Close proximity of airport to highway routes permits easy access by transportation vehicles. Fuel may be obtained after normal working hours.

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3. Thibodaux Municipal Airport:

Location: Horseshoe Rd. Shriever, LA

Runway: 3000 ft X 75 ft

Telephone: (985) 447-3386

Lat: 29-44.8N, Long: 090-49.9W

Avionics: VOR

Tower: 0700-1700

Radio: tower: 122.8mhz (intercom)

Load weight (lbs): 12500 lbs.

Fuel: avgas

Lighting: medium intensity

Restrictions: Not recommended for staging area for dispersant equipment due to limited services and small runway.

Conditions: Good area for small commuter aircraft delivering Good secondary arrival point for small commuter aircraft delivering response personnel in the event at overcrowding at Houma airport.

4. Henry P. Williams Memorial Airport:

Location: between Hwy 182 and Hwy 90 on the Western edge of Patterson. Turn onto Zenor Rd. then onto Henry P. Williams Memorial Dr. which dead ends into the airport. (aka. Perry Flying Center).

Runway: 5400 ft X 150 ft

Telephone: (985)395-4501

Lat: 29-42.7N, Long: 091-20.3W

Avionics: LOC, VOR, NDB, DME

Tower: 24 hrs

Radio: tower, 131.0 MHz

Load weight(lbs): 150,000

Fuel: avgas, jet, comjet-a, prist (anti-icing additive) [government contract]

Lighting: medium intensity

Conditions: Fuel is available on a 24 hr. basis.

Easy access to highway transportation routes permit vehicular traffic rapid entry and exit from facility.

Fuel is available on a 24-hour basis (on-call, rapid response), and facility maintains 40,000 gallons on hand with quick access to resupply channels. Tarmac is large enough to have spraying ops. Load weight is pretty good for medium and some large aircraft. There is a restaurant on the premises with provisions for providing meals on an as-needed basis.

5. Abbeville Municipal Airport:

Location: Hwy 14 Abbeville LA

Runway: 5000 ft. X 75 ft

Telephone: (337)893-8725

Lat: 29-58.5N, Long: 092-05.5W

Avionics: VOR, glide slope

Tower: N/A

Radio: N/A

Load weight(lbs): 20,000

Fuel: avgas, jet, prist

Lighting: medium intensity

Conditions: Large area available for staging area of equipment, but load limitations of runway make large aircraft obsolete. This facility would make a good staging area for heli spraying operations.

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6. Acadiana Regional Airport:

Location: One mile off HWY 90 on Parish Rd, 3013
New Iberia, LA

Runway: 8002 ft X 200 ft

Telephone: (337) 367-1401

Lat: 30-02.3N, Long: 091-53.0W

Avionics: LOS, VOR, NDB

Tower: 0700-1600 (personnel 20.min recall)

Radio: tower: 125.0 MHz ground: 121.7 MHz

clearance: 118.05 MHz

Load weight(lbs): unlimited

Fuel: avgas, jet, comjet-a, prist (govt contract)

Lighting: high intensity; inbound aircraft may key
microphone 7 times on 122.8 mhz to bring up lights
automatically.

Conditions: Description of staging area: Tarmac is approx. 4 acres in size. Airport is former naval base. There is no problem with equipment staging, plenty of room. Airport has handled C-5 transports in past. DC-8 routinely operates from this facility.

7. Lafayette Regional:

Location: East of Lafayette on Hwy 90.

Runway: 7651 ft X 150 ft

Telephone: (337) 234-3100

Lat: 30-12.2N, Long: 091-59.3W

Avionics: ILS, VOR, NDB

Tower: 0600-2300

Radio: tower: 118.5 MHz ground: 121.8 MHz atis:

120.5 MHz clearance: 122.55 MHz

Load weight(lbs): 150,000

Fuel: avgas, jet, comjet-a, prist

Lighting: high intensity

Description: Airport is located immediately adjacent to the Air National Guard Base, which can provide extensive support for transportation and coordination. This airport is the largest in south central LA and is recommended for a primary location for equipment staging area for large spills in the western areas of the MSO Morgan City zone.

Aircraft Rental:

Fixed Wing:

HELICOPTERS	CITY	PHONE NUMBER
Air Logistics	Houma New Iberia	(985) 851-6232 (800) 365-6771
Industrial Helicopter	Lafayette	(337) 233-3356
Panther Helicopter, Inc.	Belle Chase	(504) 394-5803
Pelican Aviation Corp	New Iberia	(337) 367-1401
Petroleum Helicopters Inc.	Lafayette	(337) 235-2452

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	Houma Amelia	(985) 868-1705 (985) 631-2131
Hammonds Air Service	Houma	985 872-1423
Mayeaux Flying Service	Port Fourchon	(985) 785-9688

3600 Wildlife Branch Director

The primary purpose of the Wildlife Branch Director is to provide the best achievable care for impacted wildlife and to minimize wildlife losses, which includes preventing injury to wildlife or habitats from both a pollutant and from the implementation of response countermeasures. It is the Southeast Louisiana Area Committee policy that representatives of the U.S. Fish and Wildlife Service (USFWS) will assume the position of Director and Deputy Director of the Wildlife Branch. This position can be deferred to NOAA's National Marine Fisheries Service (NMFS) if USFWS is unavailable, or USFWS chooses to do so if NMFS will provide a more experienced Branch Director given the circumstances of the incident. State Fish and Wildlife representatives will assume these positions if a USFWS or NMFS representative are not available, or if designated by a USFWS representative. Appointment of other parties, including the Responsible Parties representatives, to one or both of these positions may be made by a USFWS representative or their designee at any time during an incident, and for such periods of time as may be deemed appropriate. Unless otherwise indicated by USFWS, the Wildlife Branch Director position will be delegated to the applicable State Fish and Wildlife agency.

The Wildlife Branch is responsible for the implementation of the Wildlife Response Plan for the Southeast Louisiana area found in Chapter 9000, Appendix H of this plan. The Wildlife Response Plan describes the roles, responsibilities, and duties of the Wildlife Branch and associated personnel in detail. The Wildlife Branch is responsible for ensuring compliance with applicable Federal and State wildlife laws and mandates. Trustee agencies provide input into the selection of response methods used so that wildlife operations comply with each trustee's governing laws and their obligations to preserve and protect wildlife and habitat. During a spill response, the wildlife trustee agencies will advise the Wildlife Branch about local wildlife resources, sensitive species or habitat, logistical considerations, and other issues that arise. Indian Tribes retain sovereign authority to manage wildlife resource issues within reservation boundaries. Consultation and coordination is necessary with Tribal governments whose lands may be impacted by an oil spill.

The Wildlife Branch will be activated when either a Federal or State trustee agency, responsible party, or the Unified Command determines that an oil spill is in the vicinity of wildlife resources (mammals or birds), or has a trajectory that puts wildlife resources at risk. Activities associated with the activation of the branch will be appropriate to the size of the spill. Activation of personnel and equipment is based primarily to the size of the spill. Activation of personnel and equipment is based primarily on anticipated adverse effects on wildlife. On every spill response, the first action of the Wildlife Branch must be to deploy trained observers to the spill site to determine the extent of the initial and anticipated wildlife impacts in a timely manner. The ability to effectively determine the size and scale of the wildlife response is highly dependent on getting trained observers on-scene quickly. The Wildlife Response Plan describes specific response strategies for oiled Birds, Sea Turtles as well as hazing and monitoring options for larger Marine Mammals.

Depending on the size of the incident, the Wildlife Branch may range in size from just the Branch Director position to full activation of the organization described in the Wildlife Plan, including the associated

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equipment and personnel resources. Within the Wildlife Branch there are three groups: the Wildlife Reconnaissance Group, the Bird Recovery & Rehabilitation Group, and the Marine Mammal Recovery & Rehabilitation Group. The Wildlife Branch coordinates and manages the activities of all personnel in the Wildlife Branch who are under the authority of the Unified Command during a spill response. These include Federal, State, and local agencies, along with commercial and non-profit organizations responsible for wildlife.

The Wildlife Branch, working for the OSC, will develop operational strategies, tactics, and resource needs for operational activities for the Wildlife Branch in the Incident Action Plan. Wildlife Branch activities affect and interact with numerous other sections of the Incident Command and it is important that good communications are established and maintained between the Wildlife Branch and the Environmental Unit, a part of the Planning Section. The Wildlife Branch is responsible for providing information to the Incident/Unified Command, the Planning Section, and the Public Information Officer/Joint Information Center relative to the daily numbers of live and dead animals and their status.

Worker safety must be considered before any wildlife response effort is conducted. Therefore, all Wildlife Branch activities must conform to the Site Safety Plan for the response. Additional safety requirements may be included in an incident specific Wildlife Branch Safety Plan. Appropriate bio-safety measures will be utilized to reduce the risk of transmission of infectious disease between wildlife and personnel during an oiled wildlife response.

Upon conclusion of Wildlife Branch operations, its activities are demobilized following the standard checkout procedures identified through the ICS and the Unified Command. Demobilization of the Wildlife Branch often lags behind that of other response operations for several reasons, such as animals remaining in rehabilitative care, the presence of residual oil, and the presence of visibly oiled marine mammals and free-flying birds.

More detailed information concerning the responsibilities of the Wildlife Branch can be found in Chapter 9000 Appendix H: Southeast Louisiana Wildlife Response Plan.

3700 Reserved

3800 Reserved

3900 Reserved for Area/District

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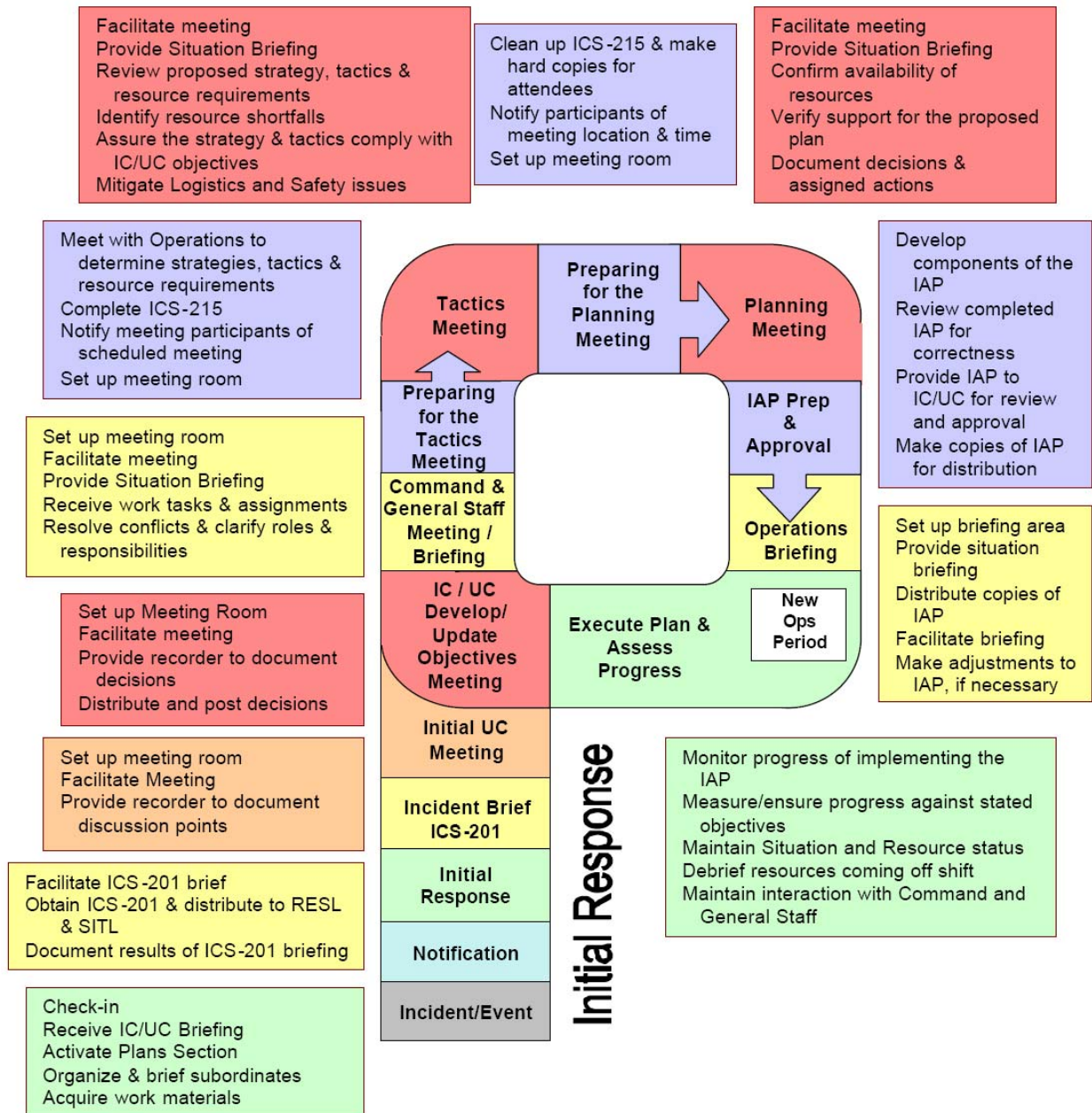
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Planning

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Operational Planning “P” For Planning Section Activities



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Chapter 5000 Logistics

4000 Planning

4100 Planning Section Organization

The following is an organizational chart of the Planning Section and its subordinate units. It serves as an example and is not meant to be all-inclusive. The functions of the Planning Section must be accomplished during an incident; however, they can be performed by one individual or can be expanded as needed into additional organizational units with appropriate delegation of responsibility.

Planning Section organization and staffing information within the command can be found in the National Incident Management System (NIMS) Guidance and the National Response Framework. The management of the response will follow NIMS Incident Command System (ICS) processes and position descriptions. Where NIMS/ICS does not describe a process or organization requirement, the incident specific need will be addressed by the Incident Management Team (IMT).

4110 ICS Position Specific Job Aids

Available ICS position specific job aids can be found in Chapter 9000, Appendix U.

4120 Roles and Responsibilities

The Planning Section is responsible for the collection and evaluation of incident situation information, preparing situation status reports, displaying situation developments, maintaining the status of resources, developing an Incident Action Plan, and preparing required incident related documentation. This is done under the direction of the Planning Section Chief. All functions not assigned by the Section Chief remain the responsibility of the Section Chief.

4130 Planning Section Chief Responsibilities

The Planning Section Chief (PSC), a member of the General Staff, is responsible for the collection, evaluation, dissemination, and use of information about the development of the incident and status of resources. Information is needed to: 1) understand the current situation, 2) predict the probable course of incident events, 3) prepare alternative strategies for the incident, and 4) submit required incident status reports.

Planning Section Organization



4200 Situation

The Situation Unit (SITU) is responsible for collecting, maintaining, and evaluating information about the current/possible future status of the spill or release and the spill response operations as well as the maintenance of the command post displays. This responsibility includes the compilation of information regarding the type and amount of oil or hazardous substance discharged or released, the amount of oil or hazardous substance recovered, the oil or hazardous substances' current location and anticipated trajectory, and impacts on natural resources. This responsibility includes providing information to the GIS specialist(s) for the creation of maps to depict the current and possible future situation and the preparation of reports for the Planning Section Chief.

4210 Functions of the Situation Unit Leader (SITL)

- Provide Briefings
- Best Briefing Practices
 - Division of briefing duties between the following:
 - Operations Section Chief (OSC), Intelligence Officer (INTL), Situation Unit Leader (SITL), Technical Specialist (THSP)
- Provide Maps/Charts/Building Plans
- Submit Reports
 - ICS-209
 - Situation Reports

4210.1 Best Briefing Practices

The following practices should be of assistance for preparing and/or presenting a brief.

As the briefer:

- Plan ahead by arranging sources and display material in a logical sequence. Use the agenda specified for the type of meeting or brief in the Incident Management Handbook.
- A briefing should include
 - Current situation (note: territory, exposures, safety concerns, etc.)
 - Objectives and priorities.
 - Current and planned actions.
 - Current on-scene organization.
 - Number of injured and fatalities.
 - Resource assignments.
 - Resources en-route and/or ordered.
 - Facilities established.
 - Incident potential.
 - Map/Chart with all pertinent information (base/staging areas, divisions, etc.)
- Understand the target audience for the briefing and tailor the briefing to meet the information required.

- If audience is mixed agency/organizations avoid acronyms.
- Anticipate potential questions in advance and have the answer ready.
- Check the presentation area for lighting, display area, seating, and size for the anticipated audience.
- Review preparations with the PSC for advice and guidance.
- Contact key presenters (e.g., OSC, INTL) informally prior to the briefing to ensure there is a clear understanding of who will be briefing what material so that the briefing is coordinated.
- Determine in advance if material is of a sensitive nature is to be discussed, and if so, limit attendance according to presenter's direction
- Know how the PSC wants to work questions and answers. Will Q and A be allowed during the briefing or following?
- Use presentation technology (e.g., PowerPoint) as appropriate.
- At the conclusion of the brief, summarize key points as necessary.

4220 Guidelines for Setting up the Situation Unit

The SITU is located in the Planning Section of the ICP. When locating the SITU, remember that SITU will need to interact with the Environmental Unit, the Resources Unit, and the Operations Section, among others. The SITU may need the most space of any function in the ICP due to the amount of wall area needed to create and maintain all maps, charts, and other incident display information. The SITL will need to plan for expansion of the Unit if the incident escalates or additional requests are placed on the SITU. Also, the space must be conducive to managing and displaying information. Wall space should be clear of light fixtures, mirrors, and pictures.

4220.1 Specialized Personnel

The following is a list of specialized positions that can assist the SITU.

Technical Specialists

Technical Specialists (TSP) can be valuable to the SITU in providing and briefing specialized information, truth checking information, interpreting data, and other information relevant to the incident. The SITL should consider requesting THSPs when they feel they need technical expertise not otherwise available on the incident. Specialist that could be of value include environmental experts (if not Environmental Unit), Geographic Information System (GIS) Specialists, situation report/briefing specialists, weather observers, scientific advisors, structural engineers, etc.

Field Observers

Field Observers (FOBS) work for the SITL and collect situational information from personal observation at the incident site and report this information back to the SITL. The SITL should consider requesting FOBS when verification is necessary for information such as location of trouble spots, weather conditions, hazards, Resources Unit information needs, and the progress of operations.

4230 Situation Reports/Information

The SITU is responsible for generating numerous incident reports including ICS-209 and U.S. Coast Guard Message Traffic (SITREP-POL/POLREP). An example of a SITREP-POL/POLREP can be found in Marine Safety Manual Vol 6, Chapter 7, COMDTINST 16000.11.

4230.1 Weather/Tides/Current Information:

For the purposes of the SOUTHEAST LOUISIANA AREA CONTINGENCY PLAN, all weather, tide, and current information shall be obtained from the NOAA Scientific Support Coordinator.

National Oceanic & Atmospheric Administration
Scientific Support Coordinator
24-Hour (206) 526-4911

4240 Area of Responsibility

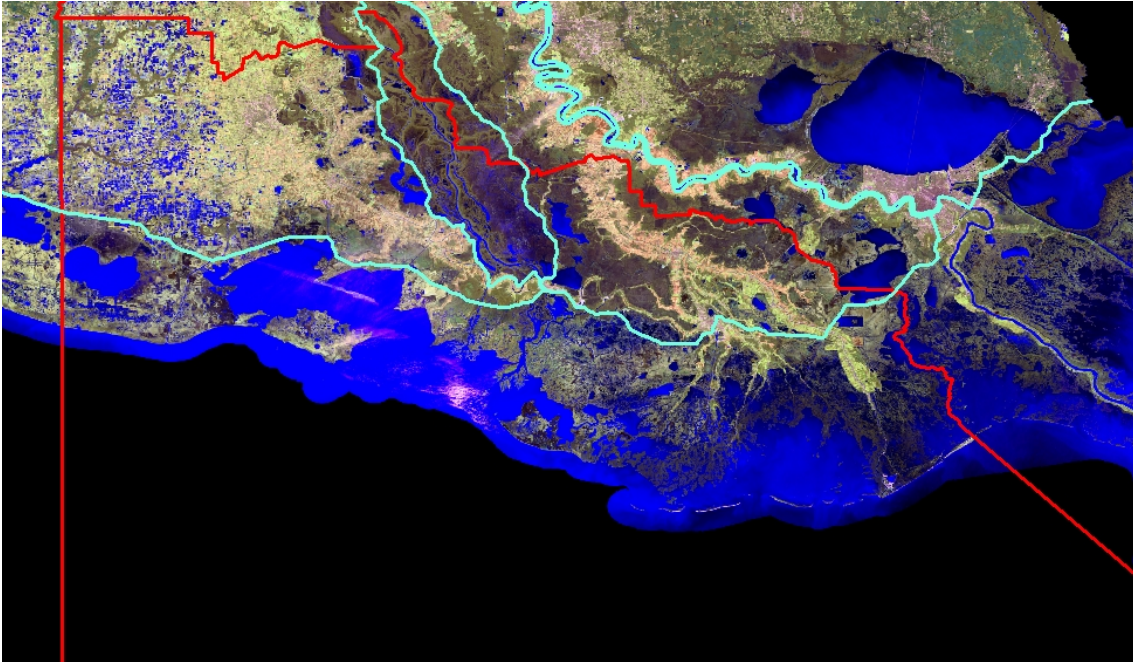
Southeast Louisiana Captain of the Port Zone



MSU Morgan City COTP Zone Boundaries Quick Reference

Waterway	MSU Morgan City
Parishes	Acadia, Lafourche, Assumption, St. Martin, Iberia, Jefferson (SW portion), Terrebonne, Lafayette, Vermilion and St. Mary
Gulf Intracoastal Waterway	MM 20 – MM 191
Atchafalaya River	MM 45 – MM 140
Port Allen Route	MM 0 – MM 30
Bayou Terrebonne	Navigable from Gulf to Bourg, LA

Inland/Coastal Zone Delineation



The blue line in the map above marks the delineation between the USCG and EPA jurisdictions, Inland and Coastal Zones as defined in the NCP (40 CFR Part 300).

4300 Resources

The Resource Unit (RESU) is responsible for maintaining the status of all resources (primary and support) at an incident. This is achieved through the tracking of all tactical resources, including check-in, status, current location, etc; enabling the RESU to assign available resources. The RESU is also responsible for the completion of ICS forms 203, 204, & 207; and the compiling of the Incident Action Plan.

4310 Setting up the Resource Unit

The Resources Unit work area in the ICP is the space for the management and tracking of all tactical resources and personnel. Therefore, the space must be conducive to tracking resources during current operations as well as supporting operational planning. It needs to be functional, and free of interruptions and distractions that detract from the RESL's ability to lead the Resources Unit.

4310.1 Personnel

Personnel that provide assistance to the Resources Unit Leader are Status/Check-in recorders (SCKN). There are actually two distinct jobs that are embedded within the SCKN position, they include:

- Checking in and out resources
- Tracking resources during the incident

There are many different factors that determine the number of SCKN's that will be required but they include:

- Number of check-in locations established on the incident
- Number of Resources expected to be assigned to the incident
- Number of Division or Groups within the Operations organization
- Whether the incident is a 24 hour operation
- Expected duration of the incident
- Number of Incident Action Plans to be developed during each 24 hour period

4310.2 Check-in Locations

Resources may be checked in to an incident at a variety of locations including:

- Incident Command Post
- Incident Base or Camp(s)
- Helibase, boat ramp, marina
- Staging area
- Security Check Point

4400 Documentation Unit

The Documentation Unit (DOC) is responsible for the maintenance of accurate, up-to-date incident files. Examples of incident documentation include: Incident Action Plans, incident reports, communication logs, injury claims, situation status reports, etc. Thorough documentation is critical to post-incident analysis and litigation. Some of these documents may originate in other sections. This unit shall ensure each section is maintaining and providing appropriate documents. Incident files will be stored for legal, analytical, and historical purposes. DOC also provides duplication and copying services.

4500 Demobilization

The Demobilization Unit (DMOB) is responsible for developing the Incident Demobilization Plan, and assisting Sections/Units in ensuring an orderly, safe, and cost effective demobilization of personnel and equipment.

Resources should be demobilized in the same manner as they checked into the incident organization: as individuals, single resources, crews or teams. Demobilization planning needs to start early to establish procedures for the rotation of personnel and for emergency demobilizations.

The Operations Section sets the pace of demobilization. As operations begin to downsize, the rest of the organization should follow.

The following is a sample Demobilization Plan.

Sample Demobilization Plan
23 February 20XX
For the XXXX Incident

I. General Information

The response is rapidly transitioning from the emergency response phase to a planned recovery effort. The demobilization of incident resources must be conducted in a manner that is safe and efficient, and should not interfere with ongoing operations. Every Staff Officer and Section Chief shall ensure they maintain the appropriate level of staff to support the planned recovery phase. The following will be incorporated into the demobilization effort:

Responders that were operating within the XXXX will be offered the opportunity to undergo critical incident stress management.
Decontamination of personnel, personnel clothing and equipment will be undertaken under the direction of the safety officer.
All responders that are traveling by vehicle for more than 2 hours must have a minimum of 6-hours rest, unless exempted by the Unified Command.
Driving between the hours of 2200-0600 will be limited to airport transport to facilitate demobilization. Point to point driving for returning responders will be limited to 12 hours with sufficient breaks outside of 2200-0600 rest hours.
All supervisors, leaders and chiefs will be thoroughly briefed prior to leaving the incident.

II. Responsibilities

The Planning Section Chief shall:

Ensure that the demobilization process and expectations receive wide distribution and that there is an orderly release of resources.
Ensure that all agency/industry specific requirements regarding the demobilization of the agency's/industry's resources are followed. Any deviations must have the approval of the agency/industry Incident Commander.
Review the demobilization plan prepared by the Demobilization Unit Leader. Review Command and General Staff comments and make changes as appropriate prior to presenting the Plan to the Unified Command.

The Operations Section Chief shall:

Identify any excess personnel and equipment available for demobilization and provide a list to the Planning Section Chief.
Identify and decontaminate all tactical resources that require decontamination. Coordinate the decontamination effort with the Safety Officer and Logistics Section Chief.
Where possible, release resources that have pre-established shared transportation together to facilitate demobilization.

The Logistics Section Chief shall:

Coordinate all personnel and equipment transportation needs to designated locations to meet travel needs.
Ensure that the Supply and Communications Units are prepared to accept and document the return of all equipment that was checked out through them.
Provide courtesy vehicle safety inspections for all non-contracted vehicles.
Coordinate all vehicle inspections with the Finance/Administration Section Chief.

The Finance/Administration Section Chief shall:

Ensure that all personnel and equipment time reports are complete and accurate.
Ensure that any injury and/or equipment claims are well documented and complete.
Adjust Equipment and Time Recorder's schedules to meet demobilization needs.

III. Release Priorities

The following are the release priorities:

Federal Government response resources

State Government response resources

Local Government response resources

Industry resources

Release priorities may be adjusted to better serve the changing incident situation. Ensure that concurrence is obtained from the agency that provided the resource.

IV. Release Procedures

Sections Chiefs and Command Staff:

Have the authority to approve the tentative release list of resources to the Demobilization Unit Leader.

Submit tentative release list of supply resources to the Demobilization Unit Leader a minimum of **24 HOURS** prior to the resource's anticipated departure.

Demobilization Unit Leader:

Prepare the Demobilization Checkout Form, ICS-221, when the tentative release list is approved by the Unified Command.

Ensure that it is noted on the ICS-221 that the resources requiring decontamination were decontaminated.

Ensure that a resource requiring critical incident stress debriefing is noted on the ICS-221.

Effectively communicate with all staff members in order to identify any changes in the transportation needs of personnel. Ensure timely notification of anyone that will be impacted by changes in established transportation times.

Note on the ICS-221 any travel checking and arrival notification procedures that were established between the resource provider and the resource.

Excess resources being demobilized are to follow the directions outlined on their respective Demobilization Checkout Form to ensure that all required signatures are obtained. Signatures include the following units:

SPUL

COML

GSUL

TIME

DOCL

V. Phone Directory

Any time there is a concern over the status of a released resource contact the Demobilization Unit Leader at XXX-XXX-XXXX. Other points of contacts include:

XXXX Parish Emergency Operations Center: XXX-XXX-XXXX

Coast Guard MSU Morgan City: 985-380-5320

XXXX

VI. Approval

Prepared by: _____
Demobilization Unit Leader Date _____

Reviewed by: _____
Planning Section Chief Date _____

Reviewed by: _____ Date _____
Logistics Section Chief

Reviewed by: _____ Date _____
Fin/Admin Section Chief

Reviewed by: _____ Date _____
Operations Section Chief

Approved by: _____ Date _____
Unified Command

Approved by: _____ Date _____
Unified Command

Approved by: _____ Date _____
Unified Command

Approved by: _____ Date _____
Unified Command

SAMPLE

4600 Environmental

After protecting human life and safety, the next highest priority in spill response is reducing impacts to public, natural, and cultural resources.

The Environmental Unit (ENV) is the central point within the Planning Section for determining how to best protect those resources. Specifically, the ENV is responsible for:

- Spill/plume trajectories
- Identifying all natural, cultural, and economic resources and historic properties likely to be affected by a discharge or release, and making recommendations for priorities to protect these resources;
- Providing guidance for the implementation of Geographical Response Plans (GRPs);
- Working with the Operations Section to establish any additional environmental protection strategies not identified in GRPs;
- Establishing Shoreline Cleanup Assessment Teams (SCAT);
- Using SCAT information to recommend shoreline cleanup recommendations, priorities, and restrictions;
- Providing guidance regarding “how clean is clean” decisions;
- Providing technical review and recommendations regarding the use of alternative technologies;
- Developing a disposal plan (Note: Louisiana State Disposal Guidelines found in Chapter 9000, Appendix P)
- Providing information to JIC and IC/UC regarding natural resource concerns/impacts;
- Coordinating with NRDA activities; and
- Coordinating with Wildlife Branch and Air Operations Branch on issues involving wildlife hazing.

The Southeast Louisiana Area Contingency Plan recognizes that there is shared responsibility between the Unified Command Representatives. Plus, it is broadly recognized that the critical phase of any response, regardless of size, is the initial hours after the spill or release. Given the importance of the ENV’s duties, and because the responsibility and knowledge base for public resources lies with trustee agencies, it is in everyone’s best interests to ensure early critical response decisions are made by the most knowledgeable individuals. Therefore, it is the policy of the Southeast Louisiana Area Committee that the Environmental Unit Leader (ENVL) shall be a representative of a government natural resource trustee or environmental agency, if available. If no such agency representative is initially available or willing to lead the ENV, a responsible party representative may fill the role of ENVL. Furthermore, as the response action matures, a transition to a responsible party designated ENVL may occur with the concurrence of the UC. The SOUTHEAST LOUISIANA AREA COMMITTEE also encourage spill response plan holders and responsible parties to designate a Deputy ENVL, who will participate in all meetings attended by and briefings made by the ENVL. These meetings and briefings include, but are not limited to, the following pre-identified ICS scheduled events:

- Initial ICS 201 Briefing;

- Tactics Meetings;
- Planning Meetings;
- Operations Meetings;
- Unified Command Briefings; and
- Press Conferences

All trustee resource agency staff with environmental information/expertise should initially report to the ENVL. This included technical specialists (e.g. Scientific Support Coordinator) identified elsewhere within the ICS organization. However, the SSC is an independent advisor to the FOSC.

The Resources at Risk (RAR) Summary provides information about locations in the incident area which are sensitive due to environmental, archaeo-cultural, or socio-economic resources at risk. Typically this process is conducted within the Environmental Unit. The ICS 232 form identifies and prioritizes incident-specific issues. This checklist is designed to aid in the process. There may be additional incident specific steps required. The steps in this process may vary by incident or operational period.

Getting Started

[] Environmental Unit Leader (ENVL) assigns the workgroup to complete the ICS 232 Form. RP should consider having representation on this workgroup

[] Participating agencies and organizations contribute expertise and data.

[] Are threatened and endangered species (ESA) present? If so, ESA consultation will be required.

Prioritize Resources and Finalize ICS 232 Form

[] Review and apply the prioritization policy in the SOUTHEAST LOUISIANA AREA CONTINGENCY PLAN

[] ENVL or designees guides consensus on final prioritization of RARs

Preparing For Tactics Meetings

[] ENVL or designee, coordinating through the PSCG, works with Operations to discuss the ICS 232 Form and design appropriate tactics to protect or mitigate listed resources on the 232. Permits may be required for certain tactics or areas.

4700 Technical Specialists

Technical Specialists are advisors with special skills needed to support the incident. Technical Specialists may be assigned anywhere in the ICS organization. If necessary, Technical Specialists may be formed into a separate unit. The Planning Section will maintain a list of available specialists and will assign them where needed.

A list of available Technical Specialists in the MSU Morgan City area is located in Chapter 9000, Appendix R, Area Response Resource Inventory.

4800 Permits and Consultation

More information regarding permits and consultation is located in Chapter 9000, Appendix Q, Morgan City Area Permit and Consultation Guide.

4810 Permit requirements

No Federal, State, or local permits are required for on-site response actions conducted pursuant to CERCLA responses. The term on-site means the extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response activities. Permits, if required, shall be obtained for all response activities conducted off-site.

4820 Section 7 of the Endangered Species Act (ESA)

As soon as practicable after a response is under control, which may occur when the case is closed, the FOSC initiates consultation (either formal or informal, as appropriate) with the National Marine Fisheries and the U.S. Fish and Wildlife Service (the Services) if listed species and/or critical habitat have been affected. The FOSC should ensure that the following information is completed before the case is closed. After the case is closed, the information and a cover letter requesting consultation will be sent to the Services.

- Provide a description of the emergency.
- Provide an evaluation of the emergency response actions and their impacts on listed species and their habitats, including documentation of how the Services' recommendations were implemented, and the result of implementation in minimizing take.
- Provide a comparison of the emergency response actions as described above with the pre-planned countermeasures and information in this ACP.

More guidance regarding Section 7 consultation can be found in the Inter-agency Memorandum of Agreement Regarding Oil Spill Planning and Response Activities under the Federal Water Pollution Control Act's National Oil and Hazardous Substance Pollution Contingency Plan and the Endangered Species Act in Chapter 9000, Appendix T, MOUs/MOAs.

4820.1 Endangered Species Act Emergency Consultation Procedures

Background

The Endangered Species Act of 1973 (ESA) was signed into law by President Richard Nixon to protect critically imperiled species from extinction. The ESA provides protection to listed species, the habitats they utilize and designated areas known as critical habitats. The ESA prohibits a take¹ of an individual animal or adversely modifying critical habitat (Section 9 of ESA).

Section 7 of the ESA requires all federal agencies to consult with the Services² if their actions might result in a take of a listed species. Local governments must consult the services if their actions require federal permits or receives federal funding. In 2001, USCG, EPA, NOAA and DOI signed an inter-agency Memorandum of Agreement (MOA) regarding oil spill planning and response activities under National Contingency Plan (NCP) and the ESA. This MOA outlines the procedures to be followed during three phases of a spill: pre-spill planning, response and post-response. This document expands on the steps in the MOA relating to the response and post-response phases of a spill as currently understood.

Response Procedures

Early in a response, an ICS 232-CG Resources at Risk Summary report will be generated and will highlight any listed species and/or critical habitats³ that may be affected by response activities. If there are

¹ A take is to harass, harm, pursue, hunt, shoot, kill, wound, trap, capture or collect, or to attempt to engage in any such conduct

² The services are National Oceanic and Atmospheric Administration's (NOAA's) National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS).

³ Habitats which listed species may use, even if not designated as critical habitat should be considered.

no ESA resources at risk, then no consultation is necessary. If listed species and/or any critical habitats are at risk, then the FOSC (or designee) must consult with the Services as soon as practical, usually within the first few days of the response.

For NMFS - To facilitate consultation with NMFS, the “RRT VI Spill Response Emergency Endangered Species Consultation” form has been created that can be filled out and sent electronically to the NMFS Southeast Regional Office Protected Resources Division. . Attached is a version of the form, but NMFS should be contacted during an incident to obtain the most up-to-date version of the form. The completed form should be submitted to NMFS per the instructions on the form.

For USFWS –Coordinate with USFWS contact below to determine appropriate methods, as they do not currently use a standard form or template. The USFWS contact will be looking for similar information as NMFS and supplying the contact with a copy of the NMFS form may be sufficient to initiate consultation.

For all ESA consultations - The regional NOAA Scientific Support Coordinator (SSC) will often be tasked by the Federal On-Scene Coordinator (FOSC) to complete the form and handle any ESA related issues. The services will review the supplied information and respond with Best Management Practices (BMP) to mitigate potential impact of any listed species and/or critical habitat. The BMP’s are then incorporated into response operations and species specialist may be brought into the response to provide additional oversight and guidance.

4820.2 Endangered Species Act Post-Response Procedures

The three thresholds which are used to determine action necessary by the FOSC are: (1) No effect⁴ (none at all, negative or positive), (2) Not Likely to Adversely Affect⁵, and (3) May adversely affect. If the FOSC determines that response actions caused no effect listed species and/or critical habitat, then the FOSC is not required to draft a letter requesting concurrence from the services; however FOSC should retain all related documentation. If the FOSC would like service concurrence to their determination, please follow guidance related to Not Likely to Adversely Affect.

If the FOSC determines that response actions did not likely to adversely affect listed species and/or critical habitat, then the FOSC will draft a letter requesting concurrence from the services. This letter should include the following: (1) the date response concluded; (2) dates emergency consultation initiated; (3) geographic area of response activities; (4) the BMPs that were followed; (5) how the FOSC came to their determination; and (6) which listed species or critical habitat were or were not adversely effected.

If listed species or their habitats were affected the FOSC will need to engage in the formal consultation process as described in the referenced MOA.

Endangered Species Act Points of Contact

Mr. Kyle Baker National Marine Fisheries Service Southeast Regional Office Protected Resources Division 263 Thirteenth Avenue, South St. Petersburg, FL 33701 Phone: (727) 824-5134 Kyle.baker@noaa.gov	Mr. Jeffery D. Weller, Field Supervisor Endangered Species Program US Fish and Wildlife Service 400 Cajundome Blvd., Suite 400 Lafayette, LA 70506 Phone: (337) 291-3100 jeff_weller@fws.gov
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⁴ No effect: the appropriate conclusion when the action agency determines its action will not affect a listed species or designated critical habitat.

⁵ Not likely to adversely affect (NLAA): the appropriate conclusion when effects on listed species are expected to be discountable, insignificant, or completely beneficial.

4820.3 REGIONAL RESPONSE TEAM VI (RRT VI) SPILL RESPONSE EMERGENCY ENDANGERED SPECIES CONSULTATION

This form is intended for documentation of emergency consultation with the National Marine Fisheries Service (NMFS) for species listed and critical habitat designated under the Endangered Species Act (ESA). This form is intended to streamline consultation when emergency spill response activities may adversely affect listed species or critical habitat.

Emergency Contact: NMFS should be contacted as soon as possible by telephone at: 727-403-2641. Consultation may be completed by telephone; however, this form will be completed no later than 24 hours following notification of the emergency and transmitted via email (nmfs.ser.emergency.consult@noaa.gov) regarding emergency spill response actions.

Instructions for Completing the Form

Pages 1-3: The Federal On Scene Coordinator (FOSC) or other person designated by the FOSC for ESA consultation should completely fill out pages 1-3. All response actions including any pre-approved practices to avoid or minimize impacts to listed species and critical habitats should be indicated.

Pages 4-5: NMFS will assist in determining the presence of protected resources in the response area, but the initial checklist should be referenced by the FOSC. NMFS will complete the impacts assessment considering the response actions and standard practices proposed. NMFS will indicate if the response will affect any listed species or critical habitat and provide recommendations to avoid and minimize any potentially adverse effects. NMFS will transmit the completed form to the FOSC within 24 hours of receipt.

Awaiting a response from NMFS should not delay emergency response activities.

The responding agency will implement as many measures and conservation measures as feasible without delaying the response. NMFS will be available for further coordination as requested.

Post Emergency

Once the emergency response actions are over, NMFS will be notified of the measures that were implemented, and notified of any incidental take or adverse modification or destruction of critical habitat. If no adverse impacts occurred, ESA consultation is complete. If any adverse impacts resulted from the emergency response activities, formal consultation will be required with NMFS.

RRT VI SPILL RESPONSE EMERGENCY CONSULTATION**DATE OF TRANSMITTAL:**

FROM: FOSC U.S. Coast Guard	NAME: EMAIL:	t: f:
TO: NOAA Fisheries Service, Southeast Regional Office	nmfs.ser.emergency.consult@noaa.gov	t: 727-403-2641 (24-hour) f: 727-824-5309

DATE OF INCIDENT:

CENTER LOCATION (NAD 83)	Latitude	Longitude
Location Type	Check All That Apply	Name/Landmarks
Port/Industrial/Canal	<input type="checkbox"/>	
Riverine	<input type="checkbox"/>	
Inshore/Estuarine	<input type="checkbox"/>	
Nearshore/Coastal	<input type="checkbox"/>	
Offshore/EEZ	<input type="checkbox"/>	

DESCRIPTION OF INCIDENT: Be as complete as possible. Include information on the type and amount of material spilled, initial impacts, and other relevant details.

RRT VI SPILL RESPONSE EMERGENCY CONSULTATION**RRT IV RESPONSE ACTIONS (Check All That Apply) RRT IV RESPONSE ACTIONS**

ACTION		DETAILS / NOTES
Boom	<input type="checkbox"/>	
Sorbents	<input type="checkbox"/>	
Skimmers	<input type="checkbox"/>	
Vacuuming	<input type="checkbox"/>	
Dispersants	<input type="checkbox"/>	
Solidifiers	<input type="checkbox"/>	
Barriers/Berms/Fences	<input type="checkbox"/>	
Snares	<input type="checkbox"/>	
In-situ burning	<input type="checkbox"/>	
Trenching	<input type="checkbox"/>	
Flooding/Flushing	<input type="checkbox"/>	
Pre-oiling debris removal	<input type="checkbox"/>	
Oiled vegetation removal	<input type="checkbox"/>	
Oiled debris removal	<input type="checkbox"/>	
Sediment removal	<input type="checkbox"/>	
Vessel/Container removal	<input type="checkbox"/>	
Net use or trawling	<input type="checkbox"/>	
Seismic survey	<input type="checkbox"/>	
Explosives	<input type="checkbox"/>	
<u>Vessels/Vehicles</u>		
Boats	<input type="checkbox"/>	
ATVs	<input type="checkbox"/>	
Heavy equipment	<input type="checkbox"/>	
Staging areas	<input type="checkbox"/>	

RRT VI SPILL RESPONSE EMERGENCY CONSULTATION

HABITAT TYPE(S) CHECKLIST

Habitat Type	Check All in Response Area	Will Affect	Will Not Affect
Coral reef	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hard bottom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seagrass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mud/Sand bank	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sand/Silt bottom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mangroves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal lagoon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wetland	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Beach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

LIST ANY PRE-APPROVED RESPONSE METHODS TO BE USED

RRT VI SPILL RESPONSE EMERGENCY CONSULTATION

PROTECTED SPECIES CHECKLIST

SPECIES	Occurs in Response Area	RESPONSE Likely to Adversely Affect	Not Likely to Adversely Affect
<u>Sea Turtles</u>			
Loggerhead	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Green	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kemp's ridley	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leatherback	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hawksbill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Corals</u>			
Elkhorn Coral	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Staghorn Coral	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Fishes</u>			
Gulf sturgeon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shortnose sturgeon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smalltooth sawfish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Marine Mammals</u>			
NA Right whales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Humpback whales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sperm whales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sei whales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Finback whales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Blue whales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other marine mammals ¹	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Plants</u>			
Johnson's seagrass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

¹ Although all marine mammals are not listed as threatened or endangered, all marine mammals are protected under the Marine Mammal Protection Act and should be considered during response activities.

PROTECTED SPECIES CRITICAL HABITAT CHECKLIST

CRITICAL HABITAT	Occurs in Response Area	RESPONSE Likely to Adversely Affect	Not Likely to Adversely Affect
Gulf sturgeon unit 8 (Lake Ponchartrain - MS Sound)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Southeast U.S. critical habitat metadata can be found on NOAA Fisheries GIS page at:

<http://www.nmfs.noaa.gov/gis/data/critical.htm#se>

Gulf sturgeon critical habitat map: <http://www.nmfs.noaa.gov/pr/pdfs/criticalhabitat/gulfsturgeon.pdf>

**RRT VI SPILL RESPONSE EMERGENCY CONSULTATION NMFS
RECOMMENDATIONS**

4830 State Historic Preservation Office (SHPO) Consultation

In order to ensure that response actions do not inadvertently harm historical and culturally sensitive sites, the SHPO shall be consulted. The SHPO will evaluate areas where response actions are to be conducted for potential impact to historic and culturally sensitive sites.

The SHPO can be contacted via the State Historic Preservation Office, Division of Archaeology, at 225-219-4598.

Federal Tribal Historic Preservation Officers can be found at:

http://www.nathpo.org/THPO/state_list.htm#Louisiana

Louisiana

Chitimacha Tribe of Louisiana

Kimberly Walden, THPO

PO Box 661

Charenton, LA 70523

Tel: 337.923.9923

Fax: 337.923.6848

Email: kim@chitimacha.gov

Jena Band of Choctaw Indians

Dana Masters, THPO

PO Box 14

Jena, LA 71342

Tel: 318.992.1205

Fax: 318.992.8244

Email: danammasters@aol.com

Tunica-Biloxi Tribe of Louisiana

Earl J. Barbry, Jr., THPO

Tunica-Biloxi Tribal Historic Preservation Office

PO Box 1589

Marksville, LA 71351

Tel: 318.253.8174 x 6451

Fax: 318.253.7711

Email: earlii@tunica.org

Website: <http://www.tunica.org>

4840 Applicable or Relevant and Appropriate Requirements (ARARs)

The lead and support agencies shall identify requirements applicable to the release based upon an objective determination of whether the requirements specifically address a hazardous substance, pollutant, contaminate, location, or other circumstance found at a CERCLA site.

4900 Reserved for Area/District

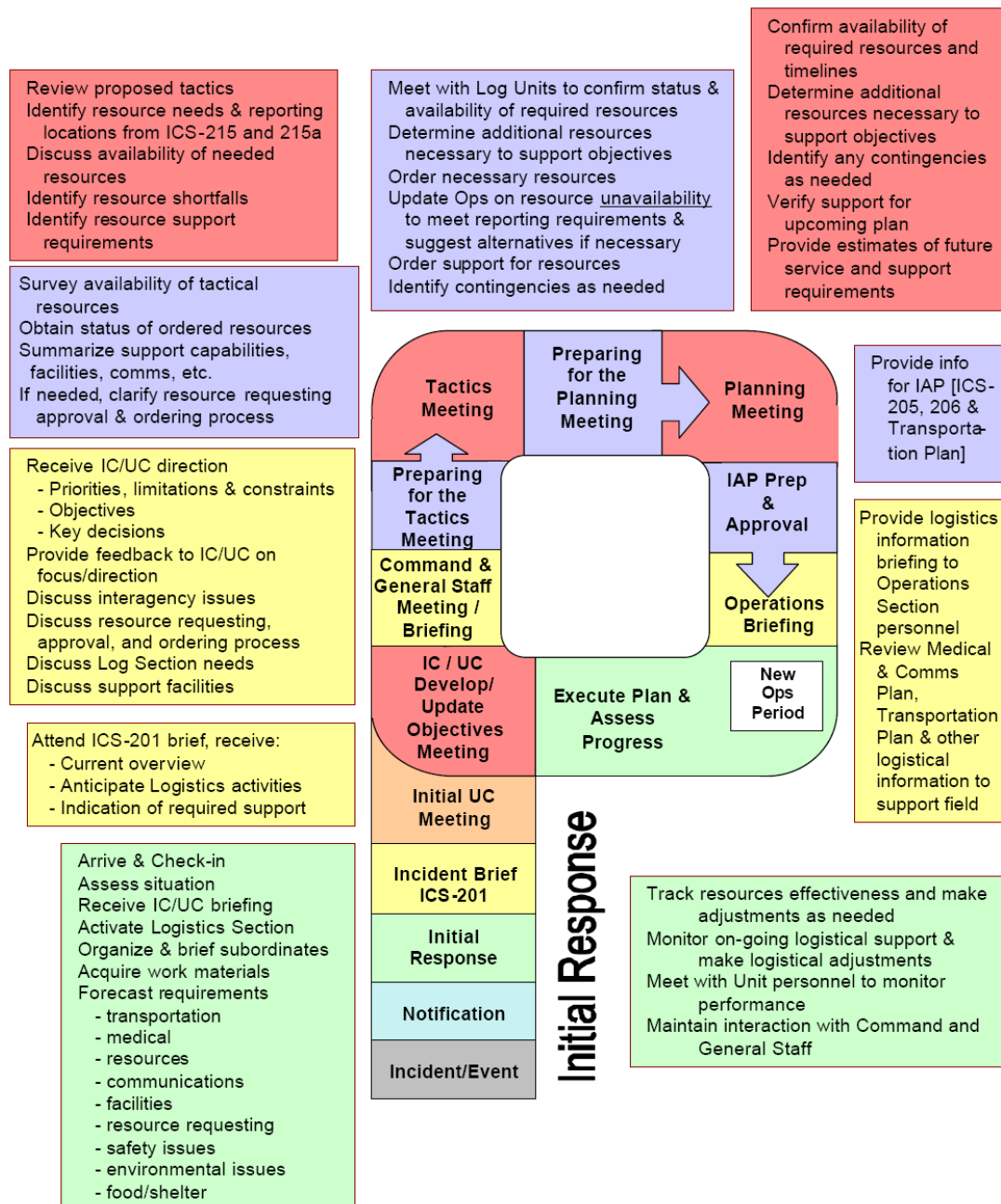
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Southeast Louisiana Area Contingency Plan

Chapter 5000
Logistics

Operational Planning “P” For Logistics Section Activities



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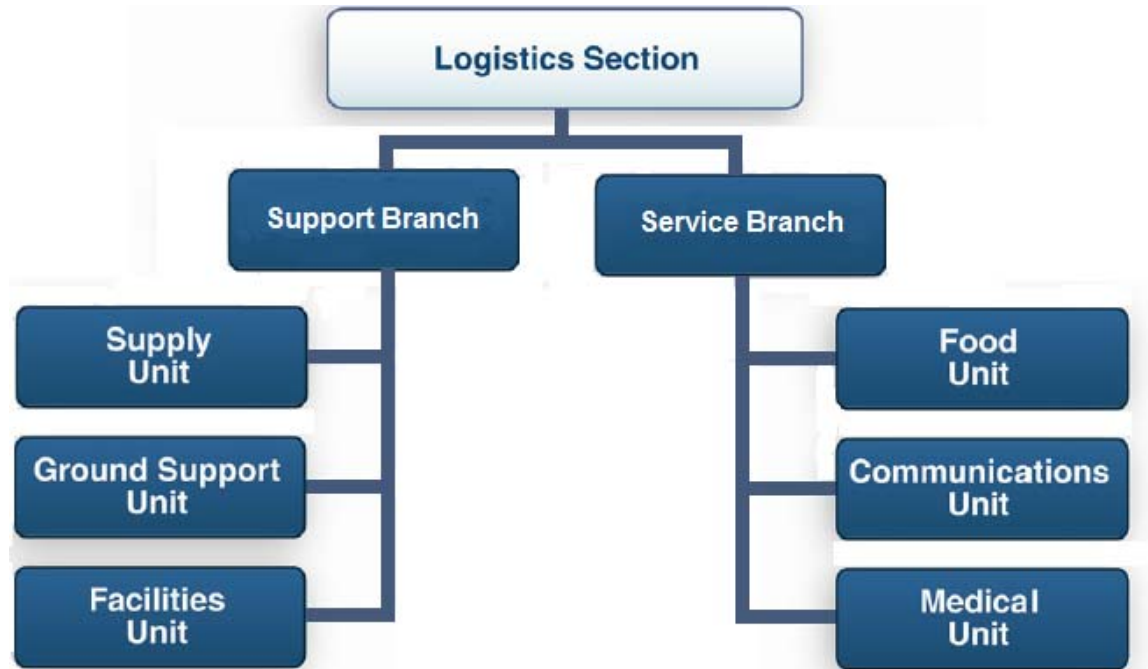
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5000 Logistics

5100 Logistics Section Organization

The following is an organizational chart of the Logistics Section and its subordinate units. It serves as an example and is not meant to be all-inclusive. The functions of the Logistics Section must be accomplished during an incident; however, they can be performed by one individual or can be expanded, as needed, into additional organizational units with appropriate delegation of authority.

Information regarding the Logistics Section and Staff position within the command can be found in the Oil Spill Field Operations Guide (FOG) ICS0SO-420-1 dated June 2000. For positions or incident types not address by the FOG, refer to the US Coast Guard Incident Management Handbook 2006 Edition, (COMDTPUB P 3120.17A Aug 2006).



5110 Roles and Responsibilities

The Logistics Section is responsible for providing services and support to meet all incident or event needs. This is accomplished under the direction of the Logistics Section Chief. Logistics service and support to an incident or event are important functions. Early recognition of the need for a separate logistics function and section can reduce time and money spent on an incident. All functions not assigned by the Section Chief remain the responsibility of the Section Chief.

5120 Logistics Section Chief Responsibilities

The Logistics Section Chief, a member of the General Staff, is responsible for providing facilities, services, and material in support of the incident. The Logistics Section Chief participates in development and implementation of the Incident Action Plan and activates and supervises branches and units within the Logistics Section.

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5130 ICS Position Specific Job Aids

Available ICS position specific job aids can be found in Chapter 9000, Appendix V.

5200 Support Branch

The Support Branch Director, when activated, is under the direction of the Logistics Section Chief. The Support Branch Director is responsible for development and implementation of logistics plans in support of the Incident Action Plan to include providing personnel, equipment, facilities, and supplies to support incident operations. The Support Branch Director supervises the operations of the Supply, Facilities, Ground Support, and Vessel Support Units.

A Personnel and Service Directory can be found in Chapter 9000, Section 9200.

5210 Command Post Establishment Procedures

Several basic features must be considered when selecting incident command post sites. These considerations include:

- **Location** - The incident command post should be in the general area of the incident. It does not need to be at the incident site and for many reasons should be located away from the incident, including preventing the administrative activities surrounding a spill from interfering with operations.
- **Size** - The command post must be capable of accommodating the number of people anticipated. An estimated need of 50-sq. ft. /person will provide adequate workspace within the ICP. Additional support area for food service, etc. should be considered.
- **Layout** - The command post should be compatible with the NIMS organization. Individual spaces for the following are desirable:
 - Unified Commander Private Rooms
 - Unified Command Center
 - Planning Section
 - Logistics Section
 - Operations Section
 - Finance Section
 - Public Affairs (should be separated from the above)
 - Meeting Room (should be separated from the above)
- **Parking** - Parking for personnel plus visitors and command vehicles should be present.
- **Electricity** - Power demands at command posts are heavy. Computers, cell phones, and radios are becoming standard equipment for responders. Each person in the command post will likely have

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need for at least one outlet. Power strips can decrease the required number of building outlets provided the electrical supply is adequate for the load.

- **Telephones** - Telephones are critical. For planning purposes one phone line for every two people in the command post is used. Some of these phones should be designated "incoming only".
- **Air Operations** - Air over-flights will be a normal part of the incident response daily routine. Heliport/bases should be in close proximity to the command post. This will reduce staff and unified commanders' travel time to and from over-flights.
- **Security** - A security control station will be needed, along with sufficient security personnel to control access to the command center and associated peripheral equipment/facilities.
- **Sanitary Facilities** - Provisions should be made to accommodate large numbers of people on site around the clock.

5220 Staging Areas

A list of pre-identified staging areas can be found in Chapter 3000, Section 3500.

5230 Area Resources

Area Resource information can be found in the Area Response Resource Inventory in Chapter 9000, Appendix R.

5240 Supply Unit

The Supply Unit Leader is primarily responsible for ordering personnel, equipment and supplies; receiving and storing all supplies for the incident; maintaining an inventory of supplies; and servicing non-expendable supplies and equipment.

5250 Facilities Unit

The Facilities Unit Leader is primarily responsible for the layout and activation of incident facilities (e.g., Base, Camp(s), and Incident Command Post(s)). The Facilities Unit Provides sleeping and sanitation facilities for incident personnel and manages base and camp operations. Each facility (base or camp) is assigned a manager who reports to the Facilities Unit Leader and is responsible for managing the operations of the facility. The basic functions or activities of the Base or Camp Manager are to oversee all of the primary services and support activities that take place at the Base, including security services and general maintenance. The Facility Unit Leader reports to the Support Branch Director.

5260 Ground Support Unit Leader

The Ground Support Unit Leader is primarily responsible for 1) support out of service resources, 2) coordination of transportation of personnel, supplies, food, and equipment, 3) fueling, services, maintenance, and repair of vehicles and other ground support equipment, and 4) implementing the Traffic Plan for the incident.

5300 Service Branch

The Service Branch Director, when activated, is under the supervision of the Logistics Section Chief, and is response for the management of all service activities at the incident. The Branch Director supervises the operation of the Communication, Medical, and Food Units.

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5310 Medical Unit Leader

The Medical Unit Leader, under the direction of the Service Branch Director or Logistics Section Chief, is primarily responsible for the development of the Medical Emergency Plan, obtaining medical aid and transportation for injured and ill incident personnel, and preparation of reports and records. The Medical Unit may also assist Operations in supplying medical care and assistance to civilian casualties at the incident, but is not intended to provide medical services to the public.

5320 Food Unit Leader

The Food Unit Leader, under the direction of the Service Branch Director or the Logistics Section Chief, is responsible for determining feeding requirements at all incident facilities, menu planning, determining cooking facilities required, food preparation, serving, providing potable water, and general maintenance of the food service areas.

5400 Communications Unit Leader

The Communications Unit Leader, under the direction of the Service Branch Director or Logistics Section Chief is responsible for developing plans for the effective use of incident communications equipment and facilities, installing and testing of communications equipment, supervision of the incident Communications Center, distribution of communications equipment to incident personnel, and the maintenance and repair of communications equipment. The Southeast Louisiana Area Committee Communication Manual can be found in Chapter 9000, Appendix O (Under development ETA 2013).

5500 Reserved

5600 Reserved

5700 Reserved

5800 Reserved

5900 Reserved for Area/District

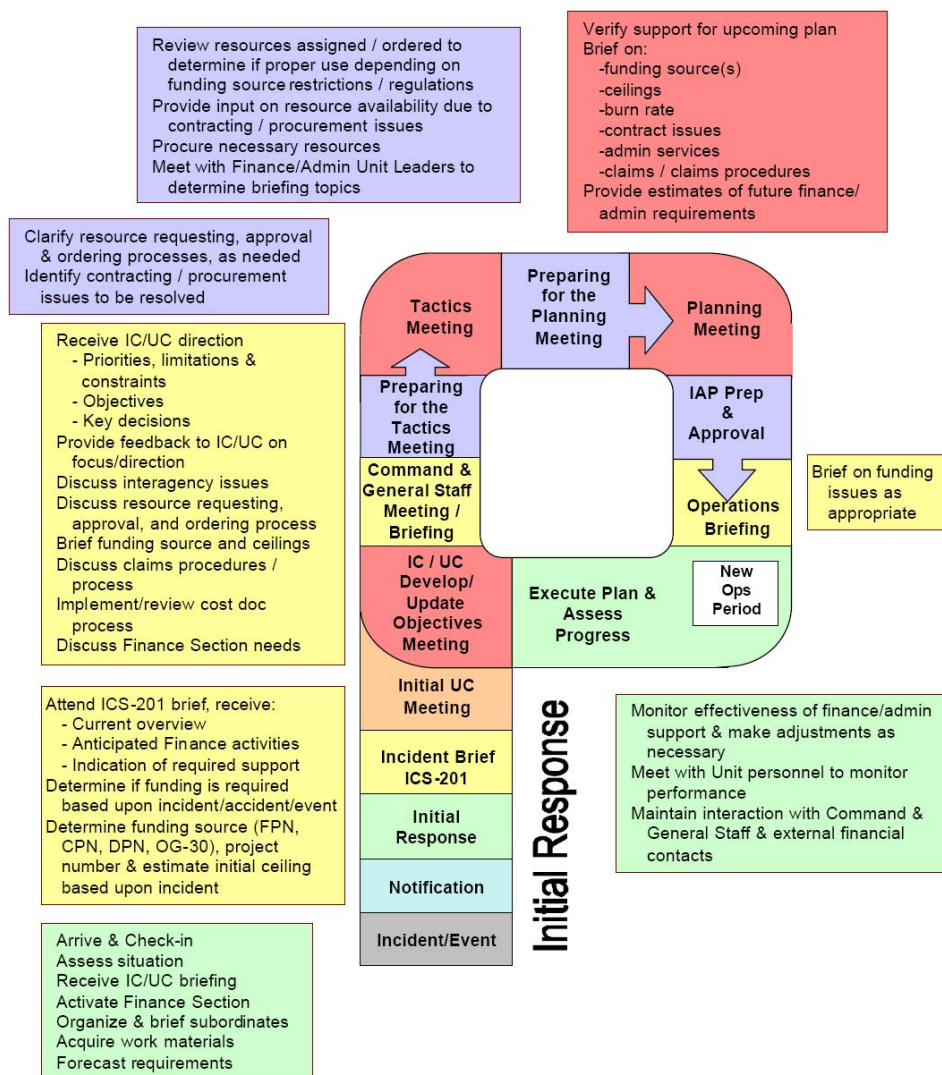
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Operational Planning “P” for Finance/Administration Section Activities



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Chapter 6000 Finance and Administration

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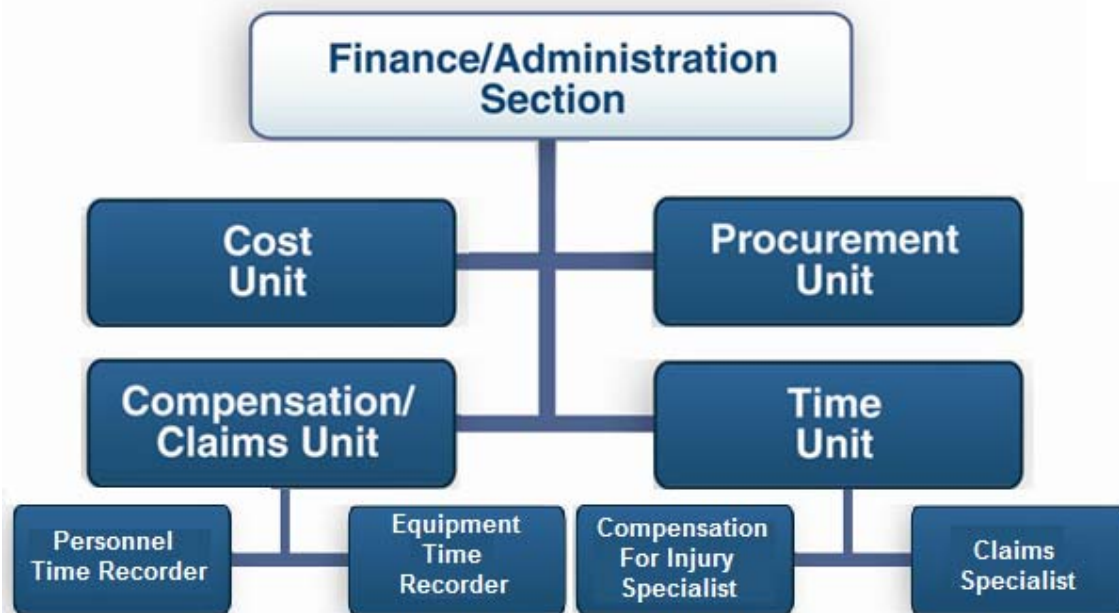
Chapter 6000 Finance and Administration

6000 Finance/Administration

6100 Finance/Administration Section Organization

The Finance/Administration Section Chief is a member of the General Staff. Responsibilities include all financial, administrative and cost analysis, and for supervising members of the Finance/Administrative Section.

The following is an organizational chart of the Finance/Administrative Section and its subordinate units. It serves as an example and is not meant to be all-inclusive. The functions of the Finance/Administrative Section must be accomplished during an incident; however, they can be performed by one individual or be expanded, as needed, into additional organization units with appropriate delegation of authority.



6110 Roles and Responsibilities

The Finance/Administration Section is usually staffed in large-scale or complex incidents. Since most of the activities of the Finance/Administration Section do not require face-to-face communication, these operations may be located remotely from the incident site. A description of the Finance/Administration Section with organizational chart and responsibilities of the Section and subordinate Units can be found in the U.S. Coast Guard Incident Management Handbook, COMDTPUB P3120.17A August 2006, Chapter 10.

6110. 1 Finance Section Chief Responsibilities

The Finance Section Chief (FSC) must provide documentation of all incident costs and guidance to the UC/IC on financial issues that may have an impact on incident operations. These responsibilities include:

- Manage all financial aspects of an incident including,
- Future Payments,

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- Future budgeting,
- Payment and personnel costs,
- Cost recovery,
- Provide financial aspects of an incident,
- Gather pertinent information from briefings with response agencies,
- Develop an operating plan for the Finance/Administration Section,
- Fill supply and support needs,
- Determine the need to set up and operate an incident commissary,
- Meet with Assisting and Cooperating Agency Representatives as needed,
- Maintain daily contact with agency(s) administrative headquarters on Finance/Administrative matters,
- Ensure that all personnel time records are accurately completed and transmitted to home agencies according to policy,
- Provide financial input to demobilization planning,
- Ensure that all obligation documents initiated at the incident are properly prepared and completed,
- Brief agency administrative personnel on all incident-related financial issues needing attention or follow-up prior to leaving incident,
- Develop recommended list of Section resources to be demobilized and initial recommendation for release when appropriate, and
- Receive and implement applicable portions of the Incident Demobilization Plan
- Maintain status of response costs and “burn rate” of expenditures,
- Maintain awareness of Responsible Party’s limit of liability

The FSC is responsible for all finance functions needed for an incident. This individual should establish functional units when needed to maintain an acceptable workload and span of control. Subordinate Finance functions may be combined when workload permits.

The FSC should be assigned before implementation of subordinate units to prevent an excessive span of control or information overload for the ICS.

The FSC may have Deputy FSCs, who may be from the same agency or from an assisting agency. The Deputy FSC must have the same qualifications as the person for whom they work, as they must be ready to take over that position at any time.

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6110.2 Time Unit

The primary function of the Time Unit is to manage time for personnel working at an incident. To do this effectively each agency, responsible party, and all contractors will need to address this function to the degree where it is integrated into a similar format/procedure and the entire system will work more smoothly. To ensure this happens, each agency, responsible party, contractor, etc., should have some formalized method of checking in and out for all personnel. The Time Unit Leader responsibilities include:

- Equipment and personnel time records;
- Establish contact with appropriate company/agency personnel/representatives;
- Establish Time Unit Objectives;
- Ensure daily personnel and equipment time recording documents are prepared in compliance with time policies;
- Submit cost estimate data forms to Cost Unit, as required;
- Provide for records security; and
- Ensure all records are current or complete prior to demobilization.

The accurate reporting of time for personnel and equipment shall be conducted in the following manner:

Personnel

- Establish and maintain a file for personnel time reports within the first operational period. Initiate, gather, or update a time report from all applicable personnel assigned to the incident for each operational period. Maintain a log of excessive hours worked and give to the Time Unit Leader daily.
- Ensure that all personnel identification information is verified to be corrected on the time report
- Post personnel travel and work hours, transfers, promotions, specific pay provisions and terminations to personnel time documents
- Ensure that time reports are signed. Close out time documents prior to personnel leaving the incident. Distribute all time documents according to agency policy.

Equipment

- Advise Ground Support Unit, Facilities, and Air Support Group of the requirement to establish and maintain a file of daily records from equipment time reports. Assist units in establishing a system for collection these equipment time reports.
- Post all equipment time tickets within four hours after the end of each operational period.
- Prepare a use and summary invoice for equipment (as required) within 12 hours after equipment arrival at the incident
- Submit data to Time Unit Leader for cost effectiveness analysis
- Maintain current posting on all charges or credits for fuel, parts, services, and commissary

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- Verify all time data and deductions with owner/operator of equipment
- Complete all forms according to agency specifications. Close out forms prior to demobilization. Distribute copies per agency and incident policy

The Logistics Section of the ICS can arrange to have meals purchased from local establishments (e.g., supermarket deli box lunch) and charge to the fund. All USCG that are TAD at the spill site must have these meals annotated on their orders.

6110.3 Procurement Unit

When incident operations require procurement of goods or services from vendors, the Procurement Unit manages the following functions:

- Administer all financial matters pertaining to vendor contracts;
- Coordinate with local jurisdictions on plans and supply sources;
- Prepare and sign contracts and land use agreements, as needed;
- Draft memorandums of understanding;
- Establish contracts with supply vendors, as required;
- Interpret contracts/agreements and resolve claims or disputes within delegated authority;
- Coordinate with Compensation/Claims Unit on procedures for handling claims;
- Finalize all agreements and contracts;
- Coordinate use of funds, as required;
- Complete final processing and send documents for payment; and
- Coordinate cost data in contracts with Cost Unit Leader.

6110.4 Compensation/Claims Unit

The function of the Compensation/Claims Unit involves record-keeping and financial claims related to damages created by an incident. The Compensation/Claims Unit Leader responsibilities include:

- Overall management and direction of all administrative matters pertaining to compensation-for-injury and claims-related activity for an incident;
- Establish contact with Safety Officer, Liaison Officer, and company/ agency representatives;
- Determine the need for compensation for injury and claims specialists and order personnel, as needed;

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- If possible, co-locate compensation-for-injury work area with the Medical Unit;
- Coordinate with Procurement Unit on procedures for handling claims; and
- Ensure all compensation-for-injury and claims documents are up to date and routed to the proper company/agency.

6110.5 Cost Unit

The principal functions of the Cost Unit are tracking costs, analyzing cost data, making cost estimates, contracts, and recommending cost-saving measures.

Note: It is critical that all parties in the Unified Command adopt consistent cost documentation for later cost recovery from the Responsible Party, Federal, and/or State funds.

The Cost Unit Leader responsibilities include:

- Collection of all cost data, performing cost-effectiveness analyses, and providing cost estimates/cost-saving recommendations for the incident;
- Coordinate with company/agency headquarters on cost-reporting procedures;
- Obtain and record all cost data;
- Prepare incident cost summaries;
- Prepare resource-use cost estimates for Planning;
- Make recommendations for cost-saving to Finance/Administration Section Chief;
- Maintain cumulative incident cost records;
- Ensure all cost documents are accurately prepared; and
- Complete all records prior to demobilization.

6200 Fund Access

6210 FOSC Access to the Federal Fund

Federal removal actions are authorized by the FWPCA and CERCLA as the required elements of jurisdiction exist. In the event of a discharge or release, if the responsible party is not acting promptly or is not known, the Federal On-Scene Coordinator (FOSC) may initiate federal removal under the authority of Section 311(o)(1) of the FWPCA or section 104(a) of the CERCLA. The responsible party is liable for government removal costs in accordance with Section 311(f) of the FWPCA and Section 107 of the CERCLA. The NCP, 40 CFR Part 300.58, outlines the types of funds which may be available to remove certain oil and hazardous substance discharges/releases.

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6210.1 National Pollution Fund Center

The National Pollution Fund Center (NPFC) manages the Oil Spill Liability Trust Fund (OSLTF), a source for payment of removal costs and damages resulting for oil spills or incidents that threaten to spill oil into navigable waters of the United States, adjoining shorelines, or the Exclusive Economic Zone (EEZ). The NPFC:

- Acts as the fiduciary agency for the OSLTF and administers the Coast Guard portion of CERCLA;
- Provides 24-hour funding to FOSCs for immediate removal actions to an incident, to monitor Responsible Party's actions, or to initiate an assessment of damages to natural resources; and
- Issues Federal Project Numbers (FPN/CPN) as requested by the FOSC.

The NPFC operates within a case team concept. There are four case teams: Southeast, Gulf Coast, West Coast, and Northeast. Each case team includes legal, financial, natural resource damage claims, and OSLTF claims specialists.

6210.2 Accessing the Oil Spill Liability Trust Fund

The OSLTF was established by Section 311(k) of the FWPCA and is administered by the Coast Guard. Title 33 CFR Subchapter M provides regulatory information on state access to the OSLTF, claims procedures, financial responsibility for vessels, and other topics. Additional information on the OSLTF can be found in the "NPFC User Reference Guide" and in Chapter 7 of the Coast Guard Marine Safety Manual Vol VI (COMDTINST M16000.11). The NPFC Users Reference Guide can be found at:

<http://www.uscg.mil/npfc/URG/default.asp>.

In the event of an oil spill, the FOSC, states, claimants, and trustees can obtain access to federal funds. The FOSC can obtain immediate access to a funding account and ceiling for incident response by accessing the Ceiling and Number Assignment Processing System (CANAPS) on the internet:

<http://www.uscg.mil/npfc/Response/CANAPS/default.asp>.

The following funding limitations exist in accessing the OSLTF:

The maximum, per case is \$1 billion, or the balance in the OSLTF, whichever is less;

Removal funding (including response to a substantial threat) are limited to the funds available in the OSLTF Emergency Fund. However, the NPFC may transfer funds into the Emergency Fund to continue removal actions.

There is a maximum of \$500 million per case to satisfy NRD claims and assessments;

Initiation of NRDA costs may be paid out of the Emergency Fund, subject to its availability and the process through which funding was requested.

The discharge (or substantial threat of discharge) must impact navigable waters of the United States (including the EEZ).

6210.3 Hazardous Substance Response Trust Fund

An MOU between the USCG and EPA allows the USCG to access the Hazardous Substance Trust Fund (Superfund) when the USCG undertakes response activities pursuant to CERCLA, Executive Order 12316, and the provisions of Subpart E of the NCP. When EPA provides the FOSC, the FOSC has the authority to spend up to \$200,000 in emergency situations. The EPA Regional Administrator has authority to approve Trust Fund expenditures not to exceed \$6,000,000. Expenditures exceeding \$6,000,000 must be approved by EPA Headquarters.

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When the USCG provides the FOSC, the FOSC has the authority to approve Trust Fund expenditures not to exceed \$50,000. USCG FOSCs can receive approval for CERCLA Trust Fund expenditures up to \$250,000 through the Commander, Eight Coast Guard District. For additional expenditures, approval from the EPA office of Emergency and Remedial Response (OERR) is necessary. To access the fund, an account number must be obtained from EPA Headquarters.

Other Federal agencies have authority to expend Trust Fund money in accordance with Interagency Agreements (IAG) and MOUs with EPA. Reimbursement of agency expenditures will be in accordance with the procedures specified in these IAGs and MOUs. The CERCLA statute allows state access to Superfund monies only through a Cooperative Agreement between EPA and the State.

In accordance with 40 CFR Part 300.415(b)(2), Trust Funds may be used to undertake immediate removal actions when the agency proving the FOSC determines that such action will prevent or mitigate immediate and significant harm to human life or health or to the environment from such situations as:

- Human, animal, or food chain exposure to acutely toxic substances;
- Contamination of a drinking water supply;
- Fire and/or explosion; and
- Similar acute situations.

In the event of a hazardous substance release or imminent threat of a release, the FOSC can obtain access to federal funds through CERCLA.

- The FOSC determined if federal funds are required and requests a spending ceiling and CERCLA Project Number (CPN) for the NPFC Cast Officer/Region Manager. The FOSC can fund USCG resources contractors, OGAs, and contractor costs through the CPN, (NPFC User's Guide Chapter 2).

CERCLA Access Criteria and Limitations:

- The release or substantial threat of a release of a hazardous substance, pollutant, or contaminate must impact the environment. "Environment" is defined in CERCLA as waters of the U.S., other surface waters, ground water, drinking water supply, land surface or subsurface, or ambient air;
- Removal funding is limited to no more than \$2,000,000 or 12 month duration. EPA may grant incident specific waivers to this requirement;
- FOSCs may only obligate less than \$250,000 for an incident without an approved Action memorandum. (See NPFC User Guide, Chapter 2, section entitled "CERCLA Removal Cost TOPs");
- There is no provision for state access;
- There are no provisions for funding pre-assessment phase activities of NRDA;
- Compensation to claimants damaged by hazardous substances is no available; and
- The substance must not be oil as defined by 33 USC Section 2701(23).

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6220 Other Access to Funds

6220.1 Access through Pollution Removal Funding Authorizations

Federal, state, local, and tribal governments assisting the FOSC may receive reimbursable funding authority through a Pollution Removal Funding Authorization (PRFA). The NPFC can be consulted regarding PRFAs, but authorization to establish and use this funding source is provided by the FOSC. PRFAs must be approved by the FOSC.

6220.2 Military Interdepartmental Purchase Request

When the responsible party is a federal agency owning/operating a public vessel or federal facility is capable of funding cleanup but lacks the resources to properly conduct the cleanup, the FOSC should attempt to establish a Military Interdepartmental Purchase Request (MIPR) or similar reimbursable agreement, to establish direct upfront funding of the removal activities.

MIPRS are also used in lieu of PRFAs when using a DOD agency to assist the FOSC (i.e. SUPSALV)

6220.3 State Access to the OSLTF

OPA 90 allows state Governors to request payment of up to \$250,000 from the OSLTF for removal costs required for the immediate removal of a discharge, or the mitigation or prevention of a substantial threat of a discharge of oil. Requests are made directly to the FOSC who will determine eligibility. If a state anticipates the need to access the Fund, they must submit a request which shall include the person's name, title, address, telephone number, and the capacity in which they are employed. FOSCs will provide initial coordination of the request and subsequent coordination and oversight.

6220.3.1 State Access to the CERCLA Fund

Expenditures of Superfund money by a State must be in accordance with a contract or cooperative agreement between the EPA and that State.

6220.3.1.1 Cost Recovery

The EPA will make all decisions regarding recovery of expenditures from the Superfund. All agencies expending Superfund money must submit an itemized account of all funds expended in accordance with provisions of contracts, Interagency Agreements (IAG), or Cooperative Agreements with EPA. These agreements must be in place prior to the expenditure of funds.

6220.3.2 Eligibility for State Access to the OSLTF

The following eligibility consideration will be evaluated by the FOSC when contacted by the State requesting OSLTF monies:

- Is the incident eligible for immediate removal under the CWA, as amended by OPA90;
- If the substance discharged/threatening discharge oil;
- Is the aggregate amount of the request equal to or less than \$250,000;
- Are the proposed actions consistent with the NCP (including the requirement in 40 CFR Part 300.305(c) that a reasonable effort was voluntarily made by the discharger to promptly perform removal actions);
- Are the proposed level of response, proposed actions, and amounts requested appropriate for the circumstances; and

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- Does the State have the means to complete immediate removal.

The FOSC will then notify the NPFC Director and the State of his/her decision.

More information regarding State access to the OSLTF is contained in the NPFC Instruction 16451.1, Technical Operating Procedures for State Access under Section 1012(d)(1) of the Oil Pollution Act of 1990

(<http://www.uscg.mil/npfc/docs/PDFs/urg/Ch4/NPFCTOPSstate.pdf>)

6220.3.3 Required Record Keeping

The State shall maintain records of expenditures for fund monies including:

- Daily expenditures for each individual worker, giving the individual's name, title or position, activity performed, time on task, salary or hourly rate, travel costs, per diem, out-of-pocket or extraordinary expenses, and whether the individual is normally available for oil spill removal;
- Equipment purchased or rented each day, with the daily or hourly rate;
- Miscellaneous materials and expendables purchased each day; and
- Daily contractor or consultant fees, including costs for their personnel and contractor-owned or rented equipment, as well as that of any subcontractor.

The state shall submit a copy of these records and a summary document stating the total of all expenditures made to the NPFC within 30 days after completion of the removal actions. A copy of these documents shall also be submitted to the FOSC.

6220.3.4 Reimbursement Procedures

Reimbursement of agency expenditures will be in accordance with procedures specified in contracts, IAGs, or Cooperative Agreements with EPA.

Local governments may request reimbursement of costs to carry out temporary measures without a contract or cooperative agreement. All costs for which local governments are seeking reimbursement must be consistent with the NCP and Federal cost principles outlined by the Office of Management and Budget.

6220.4 Lead Administrative Trustee Access to the OSLTF

Section 6002(b) of OPA90 provides that the OSLTF Emergency Fund is available "to initiate the assessment of natural resource damages". For the purpose of this agreement, initiate activities have been defined as those pre-assessment activities as outline in 15 CFR Part 990, Subpart D.

Executive Order 12777 limits funding for initiation to the Federal Trustees, who are as follows:

- Department of the Interior;
- Department of Commerce;
- Department of Agriculture;
- Department of Defense; and
- Department of Energy.

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Executive Order 12777 introduced the Federal Lead Administrative Trustee (FLAT) concept to provide a focal point for addressing natural resource issues associated with a specific incident. The NPFC will only accept requests for initiation from, and normally work directly with the FLAT. State and Tribal Trustees must work through a FLAT. Those State and Tribal Trustees acting in the event of a spill may join with the designated Federal Trustees to name a FLAT.

Criteria for Initiation

Threshold initiation of a natural resource damage assessment (NRDA) must be in response to an OPA incident, i.e., a discharge or substantial threat of a discharge of oil into or upon the navigable waters or the adjoining shorelines or the exclusive economic zone of the United States.

6220.5 Local and Tribal Government Access to the Superfund

Local and federally recognized tribal governments may request reimbursement of cost to carry out temporary measures to protect human health and the environment without a contract or cooperative agreement. All costs for which local governments are seeking reimbursement must be consistent with the NCP and Federal cost principles outlined by the Office of Management and Budget. Reimbursements are limited to \$25,000 per hazardous substance response. In addition, reimbursement must not supplement local government funds normally provided for emergency response. States are not eligible for reimbursement and no state may request reimbursement on behalf of political subdivisions within the state.

More information on the Local Government Reimbursement (LGR) program may be found at:
www.epa.gov/osweroel/content/lgr/.

6220.6 Louisiana State Oil Spill Contingency Fund

Pursuant to Section 2448 of the Louisiana Oil Spill Prevention and Response Act (OSPRA), and with respect to clean-up and response specifically, money in the Louisiana State Oil Spill Contingency Fund may be disbursed for the following purposes and no other:

- Removal costs related to abatement and containment of actual or threatened discharges of oil incidental to unauthorized discharges of hazardous substances;
- Removal costs and damages related to actual or threatened unauthorized discharges of oil as provided in the OSPRA;
- Protection, assessment, restoration, rehabilitation, or replacement of or mitigation of damage to natural resource damaged by an unauthorized discharge of oil as provided in the OSPRA;
- Operating costs and contracts for response and prevention as provided in the OSPRA not to exceed \$500,000 in any fiscal year; and
- Other costs and damages authorized in the OSPRA.

The Louisiana Oil Spill Coordinator (LOSC) has set forth the procedures by which an entity eligible to receive funds from, or be reimbursed for expenditures made, is able to gain access to the state oil spill contingency fund. Any state trustee or local governing authority seeking funds from the state oil spill contingency fund must submit all claims to the LOSC on Louisiana Oil Spill Coordinator's Office (LOSCO) approved forms. Copies of these forms may be obtained from LOSCO.

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Expenditures from the state oil spill contingency fund will not be authorized unless and until all Federal remedies have been exhausted. Access may only be used to pay from removal costs that are directly related to a specific incident. The Louisiana Department of Environmental Quality (LDEQ), which is the LOSC's lead technical advisor, will advise the LOSC of the standards/efforts necessary to complete clean-up. The Louisiana Department of Natural Resources/Office of Conservation will be the LOSC's lead technical advisor with respect to appropriate steps to abate the threat of a discharge or halt an ongoing release. Costs must generally be incurred at the site or in support of on-site activities. Access to the state oil spill contingency fund is for the immediate removal costs only and will not be utilized for long-term removal or remediation costs.

6220.6.1 Documentation and Cost Recovery Procedures

In the event that an entity, entitled to reimbursement from the state oil spill contingency fund discovers or is notified of an actual/threat of an incident, they shall notify the U.S. Coast Guard/National Response Center and LOSCO. This entity must submit all appropriate necessary information for LOSCO to make determination on eligibility for funding. In order to make such a determination the following information must be provided:

- Evidence of notification;
- Evidence of federal unwillingness or inability to respond;
- Evidence of unwillingness or inability of the responsible party to respond;
- Evidence that costs are not reimbursable from the Fisherman's Gear compensation fund;
- A response plan is approved by the USCG and/or EPA, and/or LDEQ;
- Estimate of costs to be incurred;
- Proposed cleanup contactor(s). These organizations must all have appropriate certifications from the USCG unless the certifications are superseded by a process developed by the LOSC; and
- Estimate of costs necessary to complete response/cleanup.

Upon receipt of the above information, the LOSC will notify the entity seeking funds of the eligibility of its request for funding. This determination will consist of the LOSC's determination of eligibility, the limits of funds that can be expended, and any special conditions attached to the expenditures. The entity receiving the determination of eligibility will be responsible for the following:

- Contracting for all services needed according to all appropriate laws, rules, and regulations.
- Oversight of all contract deliverables and certification that all tasks are accomplished as set out in contract; and
- An administrative record which includes all documents relevant to the response.

In addition to performing contractual acquisition services, the entity receiving the determination of eligibility will provide all of the following documentation items. These will be due to the LOSC within 60 days of completion of the response actions which were included within the LOSC's determination of eligibility.

- Copies of all invoices received from the contactor, as well as a statement certifying all expenditures as necessary and within the constraints of the determination of eligibility;

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- Reports detailing the progress of the response effort; and
- Any changes in the scope of the response effort that may be necessitated due to unforeseen or unpredicted events (before any monies are committed for these changes they must be, at a minimum, verbally approved by the LOSC).

6300 Cost Unit

6310 Federal Fund Documentation and Cost Recovery Procedures

Through Executive Orders the President has delegated certain functions and responsibilities vested to him by the FWPCA and CERCLA to the EPA and the USCG. Under CERCLA the Superfund has been set up to fund federal responses to hazardous substances, pollutants, or contaminants as defined by CERCLA, that may present an imminent or substantial threat to public health or the environment. Responses to discharges of petroleum products are specifically excluded from CERCLA. Section 311 of the CWA, as amended by OPA90, established the OSLTF for response to discharges of petroleum products. Response includes conducting Natural Resource Damage Assessments and paying claims for removal costs or damages. The EPA and USCG both have access to both funds through MOU/MOAs established between both agencies. Only costs incurred during containment, countermeasures, clean-up, and disposal during a Federal Response to an oil pollution incident are recoverable from the OSLTF and must be certified by the FOSC. The NCP contains information and procedures with regards to both the FWPCA and CERCLA, and contains sections regarding documentation and cost recovery for both acts.

6320 Reimbursable Expenses

OPA authorizes payment of removal costs, including the costs of monitoring removal actions consistent with the National Contingency Plan. This allows payment of incident-specific costs authorized by an FOSC, including costs of monitoring a responsible Party's cleanup, as well as actual Federal cleanup activities. The fund may reimburse:

- Costs of containment and removal of oil from water and shorelines;
- Costs to prevent, minimize, or mitigate oil pollution where there is a substantial threat of discharge of oil; and
- Costs of taking other related actions necessary to minimize or mitigate damage to the public health or welfare, including, but not limited to, damage to fish, shellfish, wildlife, public and private property, shorelines, and beaches

6320.1 Procedures for Reimbursement

To seek reimbursement from the Federal Fund, Federal agencies must submit their reimbursable expenses on Form SF 1080 "Voucher for Transfer between Appropriations and/or Funds," to the FOSC for certification. The FOSC will submit certified requests for reimbursements to NPFC within 60 days after completion of the cleanup action (33 CFR Part 153.417). The USCG will effect transfer of funds to the agency requesting reimbursements, and prepare a billing for the discharger from information on recoverable expenditures on the USCG Form "Personnel Vehicle and Miscellaneous Cost Accounting Sheet" (available from the USCG).

State agencies that do not have a formal agreement must submit a letter to the OSC requesting reimbursement. This letter must include a detailed itemized statement of reimbursable expenditures. Refer to the USCG Marine Safety Manual for additional information.

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6320.2 Recoverable Costs

The discharger incurs liability up to the discharger's legal limit of liability for all actual costs associated with Federal removal following Federal assumption of response activities. Recoverable costs include:

- Direct expenditures from the fund (i.e., payment of contractors or vendors);
- All reimbursable agency expenses;
- All personnel costs, including salaries of response personnel;
- Equipment costs, including depreciation and maintenance;
- Administrative overhead; and
- Pollution removal damage claims.

6320.3 Liability Limits

OPA sets limits of liability which apply to all removal costs and damages sought under the act. The limits may be adjusted for inflation every 3 years, based upon the consumer price index. The OPA sets the following limits:

- Tank vessels: \$1,200 per gross ton; \$10 million if 3,000 gross tons or greater; \$2 million if less than 3,000 gross tons;
- Any other vessel: \$600 per gross ton or \$500,000;
- Offshore facility except Deep Water Ports: \$75,000,000; and
- Onshore facility and Deep Water Ports: \$350,000,000.

There are certain exceptions to these liability limits. These limits do not apply to the following situations:

- If the incident was caused by gross negligence or willful misconduct;
- If the incident was a result of a violation of applicable Federal safety, construction, or operating regulations; and
- If the responsible party fails to report the incident, provide all reasonable cooperation and assistance required by a response official, or comply with an order issued by the Federal OSC.

In addition, OPA does not preempt State laws regarding liability, so in areas where State law places a higher limit, compensation for damages up to the liability limit established by the State law may be pursued. Responsible Parties who exceed their limits of liability are highly encouraged to continue funding all removal actions.

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6330 Letters

6330.1 Notice of Federal Interest for an Oil Pollution Incident (Form CG-5549)

The FOSC shall present a Notice of Federal Interest for an Oil Pollution Incident (NOFI) to every suspected discharger (Note: this requirement is internal direction only. The failure of an FOSC to present a NOFI in any given case does not affect any liability of any person which may arise in that case.) This informs the suspected discharger of a potential violation of the FWPCA, as amended and of his/her possible liability to a civil penalty per day per violation or up to three times the cost incurred by the OSLTF. Notice should also be made in potential incidents when the actions of the potential discharger to abate the threat are considered insufficient, and Federal action is contemplated. The FOSC shall retain a copy of the NOFI that is signed and dated by the suspected discharger. If the discharger refuses to sign, the NOFI will still be served. The circumstances will be noted on the NOFI and signed and dated by the FOSC (or representative). If the suspected discharger is unavailable, the NOFI shall be sent via certified mail, return receipt requested. As sample NOFI can be found in Marine Safety Manual Vol VI Chapter 7.B.3.a. COMDTINST 16000.11.

6330.2 Administrative Order

Administrative Orders are issued to protect public health and welfare under Section 106(a) of CERCLA or Section 311(e)(1)(B) of the FWPCA to a vessel (Note: CERCLA Administrative Orders cannot be issued to a vessel) or facility requiring corrective measures when there is a discharge/release or threat of discharge/release involving oil, hazardous substance, pollutant, or contaminant.

Any person directly affected by an Administrative Order may request reconsideration by the FOSC. If not satisfied with the decision of the FOSC, that person may appeal in writing to the Eighth Coast Guard District Commander. The District Commander's decision is final.

6330.3 Notice of Federal Assumption

Under FWPCA Section 311 (c) (1), whenever a polluter is unknown or not acting responsibly, or when removal efforts are insufficient, or to prevent the substantial threat of a discharge, the FOSC may assume total or partial control of response activities. The FOSC must inform the polluter, if known, of this action by issuing a Notice of Federal Assumption, even if the polluter has not initiated any action. This notice references the NOFI and indicates the date and time the Federal response was initiated. The same procedures used for issuing and obtaining signatures for the NOFI apply. (Note: this requirement is for CG internal direction only. The failure of an FOSC to present a Notice of Federal Assumption in a given case does not affect any liability of any person which may arise in that case.) In some instances, the FOSC may determine that the polluter's response efforts should continue, but that some Federal assistance is necessary to augment the clean-up (e.g., clean-up resources that the polluter cannot or will not provide). Whenever it is necessary for the operation, for the purposes other than monitoring, the FOSC should declare a Federal spill for the area(s) for which he/she is assuming control, activate the OSLTF to cover expenses and take whatever actions are necessary to ensure a proper cleanup. In these cases, the Notice of Federal Assumption shall clearly delineate those actions or areas for which the FOSC is assuming control or providing other resources. (Note: the term "declare a Federal spill" as used in this section means: in the case where a suspected polluter has been identified, the presentation of the Notice of Federal Assumption; or in other cases, the initiation of Federal Removal operations.)

6330.4 Letter of Designation of Source

The NPFC is responsible for the designation of source and notification of associated responsible parties and guarantors for an oil pollution incident. The USCG FOSC has also been delegated this authority for use in rare circumstances as outlined in the NPFC Instruction M5890.3, Technical Operating Procedures (TOPs) for Designation of Source under the Oil Pollution Act of 1990 (<http://www.uscg.mil/npfc/docs/PDFs/urg/Ch3/NPFC TOPS.pdf>).

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6330.5 Reports

FOSC reports will be submitted as determined necessary by the RRT for a particular incident. Pollution Reports (POLREPS) shall be submitted for the coastal zone in accordance with the requirements outlined in Marine Safety Manual Vol VI, Chapter 7.B.5.b. For inland zone, POLREPS shall follow the format outlines in EPA's Superfund Removal Procedures: Removal Response Reporting guidance.

6400 Time

The accurate reporting of time for personnel and equipment shall be conducted in the following manner:

Personnel

- Establish and maintain a file for personnel time reports within the first operational period. Initiate, gather, or update a time report from all applicable personnel assigned to the incident for each operational period. Maintain a log of excessive hours worked and give to the Time Unit Leader daily.
- Ensure that all personnel identification information is verified to be corrected on the time report
- Post personnel travel and work hours, transfers, promotions, specific pay provisions and terminations to personnel time documents
- Ensure that time reports are signed. Close out time documents prior to personnel leaving the incident. Distribute all time documents according to agency policy.

Equipment

- Advise Ground Support Unit, Facilities, and Air Support Group of the requirement to establish and maintain a file of daily records from equipment time reports. Assist units in establishing a system for collection these equipment time reports.
- Post all equipment time tickets within four hours after the end of each operational period.
- Prepare a use and summary invoice for equipment (as required) within 12 hours after equipment arrival at the incident
- Submit data to Time Unit Leader for cost effectiveness analysis
- Maintain current posting on all charges or credits for fuel, parts, services, and commissary
- Verify all time data and deductions with owner/operator of equipment
- Complete all forms according to agency specifications. Close out forms prior to demobilization. Distribute copies per agency and incident policy

The Logistics Section of the ICS can arrange to have meals purchased from local establishments (e.g., supermarket deli box lunch) and charge to the fund. All USCG that are TAD at the spill site must have these meals annotated on their orders.

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6500 Compensation/Claims

6510 Claims against the OSLTF

Claimants (individuals, corporations, and government entities) can submit claims for uncompensated removal costs or certain damages (natural resources, real/personal property, loss of profits, loss of subsistence use of natural resources, loss of government revenues, and increased cost of government services) caused by an oil spill to the NPFC if the Responsible Party for the Discharge does not satisfy their claim. This is in addition to the response cost recovery procedures covered in sections 6200 and 6300. The NPFC adjudicates claims and pays those with merit.

The Responsible Party can submit claims to the NPFC provided that:

- The total of all response costs and damage claims exceed the Responsible Party's statutory limit of liability; or
- The spill was solely caused by a third party, an Act of God, or an Act of War.

The categories of uncompensated losses covered by the OSLTF are:

- Removal costs,
- Real or personal property damages,
- Loss of profits or earning capacity,
- Loss of subsistence,
- Loss of government revenues,
- Cost of increases public services, and
- Damages to natural resources.

Generally, claims for all costs and damages resulting from an oil pollution incident must be presented first to the Responsible Party or its guarantor. The guarantor is typically the Responsible Party's insurer.

Reimbursements are limited to \$250,000 per hazardous substance response. In addition, reimbursement must not supplant local government funds normally provided for emergency response. States are not eligible for reimbursement and no state may request reimbursement on its own behalf or on behalf of political subdivisions within the state.

The NPFC Claimant's Guide can be found at

<http://www.uscg.mil/npfc/docs/PDFs/urg/Ch6/NPFCClaimantGuide.pdf>.

6520 Damage Assessment Procedures

The National Oceanic and Atmospheric Administration (NOAA) published a final rule to guide trustees in assessing damages to natural resources from discharges of oil. The rule provides a blueprint that enables natural resource trustees to focus on significant environmental injuries, to plan and implement efficient and effective restoration of the injured natural resources and services, and to encourage public and responsible party involvement in the restoration process.

Under the rule, the natural resource damage assessment (NRDA) process is divided into three phases:

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- Pre-assessment: The trustees evaluate injury and determine whether they have the authority to pursue restoration and if it is appropriate to do so;
- Restoration Planning: The trustees evaluate and quantify potential injuries and use that information to determine the appropriate type and scale of restoration actions; and
- Restoration Implementation: The trustees and/or responsible parties implement restoration, including monitoring and corrective actions.

This process is designed to rapidly restore injured natural resources and services to the condition that would have existed had the spill not occurred and to compensate the public for the losses experienced from the date of the spill until the affected natural resources and services have been recovered.

6600 Procurement

6610 Contracting Officer Authority

When the USCG is accessing the OSLTF/Superfund, a BOA contractor must be selected over a non-BOA Contractor, if available. BOA contractors are initially hired by verbal order followed by a written contract (Authorization to Proceed) for each incident, which will include the specific number of personnel and equipment needed, estimated cost, and the FPN.

Unless the contractor cannot provide a timely and adequate response, selection of a non-BOA contractor by an FOSC is not authorized. A Shore Infrastructure Logistics Center (SILC) contracting officer is generally the only person authorized to hire a non-BOA contractor. If the contracting officer cannot be reached in a timely manner, the FOSC is authorized to issue non-BOA purchase orders, on an emergency basis only, with an initial limit not to exceed \$5000, and a total limit not to exceed \$25,000 per incident. The FOSC must contact the contracting officer within 24 hours after exercising this emergency authority. If the FOSC determines that another agency can assist in a removal effort, the FOSC may authorize that agency to perform removal actions, before executing a Pollution Removal Funding Authorization.

6700 Reserved

6800 Reserved

6900 Reserved for Area/District

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7000 Hazardous Substance (Including Weapons of Mass Destruction) Unique Information

7100 Introduction/Purpose

While the basic Incident Command System/Unified Command (ICS/UC) is unchanged whether the response is to an oil discharge or hazardous substance release, including a Weapons of Mass Destruction (WMD) incident, there are a number of factors that are unique to hazardous substance releases. The purpose of this chapter is to provide Southeast Louisiana Area Contingency Plan users with information specific to responses to hazardous substance releases, including WMD incidents.

Many Southeast Louisiana Area Committee member agencies have specific responsibilities during and following a hazardous substance incident, including a WMD or other terrorist act (chemical, biological, or radiological). The Southeast Louisiana Area Contingency Plan is a good general guide for interagency coordination and resources during a response to any type of oil or hazardous substance incident. When an incident is large enough in scope to trigger a response structure governed by the National Response Framework, hazardous substance responses will be conducted under Emergency Support Function (ESF) 10, and may use this plan as a guide. For more information on Federal disaster and Homeland Security planning, please see the Introduction, Chapter 1000.

7110 Scope

This Chapter will focus on hazardous substance incidents with the following characteristics:

- Multi-agency and/or multi-jurisdictional response,
- Exceeds localized (city/county/state) response capacity,
- Response exceeds one operational period,
- Release or imminent release of hazardous substances, and
- Response phase of the incident, through stabilization.

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7120 Definitions of Hazardous Substances

Before the process of planning for a hazardous substance incident response can begin, there has to be a clear understanding of the types of materials that are to be covered under this plan. The Comprehensive Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendment and Reauthorization Act (SARA) of 1986 defines hazardous substances as “hazardous waste” under the Resource Conservation and Recovery Act (RCRA), as well as hazardous substances regulated under the Clean Air Act, Clean Water Act, and the Toxic Substance Control Act. In addition, any element, compound, mixture, solution, or substance may also be specifically designated as a “hazardous substance” under CERCLA. This definition includes numerous hazardous chemicals as well as chemical warfare agents and radionuclides. CERCLA hazardous substances and associated Reportable Quantities (RQs) are listed in 40 CFR Part 302.4. CERCLA also applies to “pollutants or contaminant” that may present an imminent or substantial danger to public health or welfare. An imminent or substantial danger to public health or welfare is caused when the pollutant or contaminant will or may reasonably be anticipated to cause illness, death, or deformation in any organism. Most biological warfare agents have been determined to be pollutants or contaminants under CERCLA.

Petroleum products are specifically excluded from CERCLA and are not considered to be “hazardous substances” under Federal statute. State environmental statutes may, however, consider these materials hazardous substances. This chapter does not specifically deal with issues related to response to petroleum products.

7130 Authorities

7130.1 Federal

Federal authorities for response to hazardous substance, pollutant, or contaminate, including biological, chemical, and radiological warfare agent, releases are outlined in CERCLA (42 U.S.C. 9604) and the NCP, 40 CFR Part 300. FOSCs are the federal officials pre-designated by EPA and the USCG to coordinate response activities. The FOSC directs response efforts and coordinate all other response efforts at the scene of a release. As the state and local responder’s gateway to the resources of the National Response System, it is the FOSC’s responsibility to provide access to resources and technical assistance that may not be otherwise available to a community.

Similar to oil spills, federal response authorities are shared by the EPA and the USCG, with the EPA maintaining jurisdiction of hazardous substance releases in the inland zone and the USCG in the coastal zone. Please see Chapter 1000, Section 1510 for jurisdictional boundary details. The EPA also has the lead for

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longer-term hazardous substance and pollutant or contaminant cleanups in the coastal zone. Responsibility for radiological responses is more complex and is dependent on the source of the release. Roles and responsibilities are outlined in the Nuclear/Radiological Annex to the National Response Framework.

7130.2 Louisiana State

The Hazardous Material and Explosives Control Unit, under the Louisiana Department of Public Safety and Corrections, has the responsibility for response and investigation of all chemical emergencies occurring within the State of Louisiana. The Hazardous Material and Explosives Control Unit is the SOSOC for all Hazardous Substance releases.

7200 Command

The complexity and jurisdictional characteristics of the incident will determine the level of involvement of Federal, state, local, and tribal agencies, the Responsible Party, and other responders. It is expected that the UC participants will be determined based on each incident. Table 7000-1 below outlines the State and Federal lead agency for specific incident types. Please note that this chart only shows the agency with primary authority, it does not reflect the fact that multiple agencies typically coordinate on each incident.

	Oil	HazMat	Biological	Radiological	Disaster
Louisiana	LOSC/ LDEQ	LA HAZMAT/ LDEQ	LA HAZMAT	LA HAZMAT	LA HAZMAT
Federal	EPA/USCG	EPA/ USCG/ DOD	EPA/ USCG	EPA/USCG/ DOE/DOD/NRC /NASA	FEMA

The USCG has developed an All-Hazards Incident Management Handbook which provides some guidance as to organizational set-up and roles/responsibilities for hazardous substances as well as mass-casualty incidents. These are found in Chapter 20 (Hazardous Substance/Materials), Chapter 15 (Terrorism Incidents), and Chapter 22 (Multi-Casualty) of the Incident Management Handbook (IMH). It can be downloaded from:

<http://www.uscg.mil/hq/nswfweb/docs/FinalIMH18AUG2006.pdf>.

7210 Hazardous Substance Incident/Unified Command Objectives

Primary Unified Command objectives:

- Identify the hazards;

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- Isolate the hazard area, and secure the source
- Protect the safety of the public and responders;
- Mitigate impact to the environment;
- Remove contamination; and
- Activate response plans.

Other possible Unified Command objectives:

Assess the threat of release,

Environmental monitoring;

Sample and forensic evidence collection/analysis; and

7220 Criminal Incident Management

It may be unclear at the initial onset of a response whether the cause of a release was accidental or criminal. Local responders will likely be the first to arrive on scene to assess the situation and possibly take initial response measures to contain or stop the release.

In instances where criminal activity is suspected, coordination is required between law enforcement, who view the incident as a crime scene, and other first responders who view the incident as a hazardous substance release or a disaster site. Although protection of life remains paramount, the protection and processing of the crime scene is imperative so perpetrators can be identified and apprehended. These dynamic objectives will be accounted for by forming a Unified Command with the applicable Law Enforcement Agency.

Since 9/11/01, much attention has been given to terrorist incidents. A nuclear, biological, or chemical WMD type terrorist incident is inherently a hazardous substance release with a criminal investigation component. As such, it should be responded to under the National Response Framework (NRF). The Terrorism Incident Law Enforcement and Investigation Annex to the NRF also provides guidance on response to criminal incidents with significant impacts. A terrorist incident will always be treated as a federal crime scene, thus giving the Federal Bureau of Investigation (FBI) and local/state law enforcement agencies the initial lead in each response. Be aware that the FBI can activate federal resources to assist in the response activities.

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The UC responding to an incident where terrorism is involved must be acutely aware of the unique nature of the Federal Government's response mechanisms for these types of incidents. HSPD-5 gave DHS the lead federal role for coordinating federal support to a state and local response, however, nothing in the NRF changes legal authorities or responsibilities outlined in other federal, state, or local laws and regulations. The UC may find themselves working with DHS, FBI, FEMA, or a number of other federal agencies under the NRF.

Terrorism Credible Threat Determination

If a responder suspects terrorism, the FBI and local/state law enforcement must be notified as soon as possible. Given available evidence, statements, scenario, and intelligence, the FBI/Law Enforcement agencies will make the determination on whether the incident is credible. The FOSC may be approached by the law enforcement agencies to assist in obtaining initial investigative samples to confirm their "credible threat" determination if local sampling resources are not identified or available.

The FOSC should share all available and applicable information with the law enforcement agencies to assist them in making these determinations.

7230 Notification Requirements

7230.1 Federal

See pages iii - iv of the Southeast Louisiana Area Contingency Plan Preface for notification phone numbers.

Releases of CERCLA hazardous substances, in quantities equal to or greater than their reportable quantity (RQ), are subject to reporting to the National Response Center under CERCLA, 40 CFR Part 300.125(c). Such releases are also subject to state and local reporting under Section 304 of SARA Title III (Emergency Planning and Community Right to Know Act (EPCRA)). CERCLA hazardous substances, and their RQs, are listed in 40 CFR Part 302.4. CERCLA and EPCRA RQs may also be found in the EPA's "List of Lists" at <http://www.epa.gov/ceppo/pubs/title3.pdf>. Radionuclides listed under CERCLA are provided in a separate list, with RQs in Curies.

While there are no statutory reporting requirements for releases of "pollutants or contaminants" for terrorist-related threats, the National Response Center will accept all reports of potential terrorist incidents and pass the report along to the appropriate agencies. All emergencies should also be immediately reported to 911 to activate local law enforcement and response resources.

7230.2 Louisiana State

To report incidents involving hazardous materials, call the Louisiana HazMat Hotline at (877) 925- 6595.

7230.2.1 Hazardous Material and Explosives Control Unit

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The Hazardous Material and Explosives Control Unit, under the Louisiana Department of Public Safety and Corrections, has the responsibility for response and investigation of all chemical emergencies occurring within the State of Louisiana. The Hazardous Material and Explosives Control Unit is the SOSC for all Hazardous Substance releases.

7230.2.2 Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP)

The Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) operated the state's Emergency Operations Center. The GOHSEP coordinates and provides logistic support during disaster emergencies, including communications, air, ground, and water transportation support, equipment and supplies, facilities, fuel, food, and assists with these functions for smaller spills at the request of the SOSC. The following are GOHSEP duties relative to this plan:

GOHSEP maintains and staffs emergency depots, including the establishment and training of a volunteer corps;

Maintain the Louisiana Emergency Operations Plan;

Participate and oversee the development of local and inter-jurisdictional disaster plans;

Maintain a roster of trained personnel, skilled in disaster prevention, preparedness, response, and recovery;

Provide direct emergency support to local communities in declared emergencies including spills; and

Provide emergency notification and conference call capability with local Parish Emergency Operations Centers.

7230.3 Public Information

Follow protocols laid out in JIC Manual (Chapter 9000, Appendix M)

7230.4 Health and Safety

Follow requirements of 29 CFR Part 1910.120. For hazardous substance specific information please see Section 7700 of this chapter for Reference materials to learn where you can find information specific to health and safety during hazardous substance incidents.

7230.5 Liaison

The following is a list of potential stakeholders who may be involved in addition to the agencies who are typically involved in an oil spill.

Local/State hazmat and health departments;

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Local/State Emergency Management Agencies;

Bomb squads or DOD Explosive Ordinance Detachments;

Department of Health and Human Services (HHS), Center for Disease Control (CDC), or Agency for Toxic Substance and Disease Registry (ATSDR);

Nuclear Regulatory Commission (NRC) or DOE;

Department of Agriculture (USDA);

National Guard Civil Support Teams;

Private Sector Clean-up Companies;

Laboratories/Transportable Laboratories; and/or

Other stakeholders identified in this plan or other local plans.

7300 Operations

Operational activities for hazardous substance, pollutant, or contaminant releases are dependent upon the manner in which they are released. (i.e., explosion, train derailment, fire, etc.) and the environment (air, water, soil) and/or structures impacted by the release. However, operational activities can be grouped into the following general steps.

- Determine threat to human health and the environment;
- Notification;
- Evacuate/shelter-in-place;
- Communicate the hazard warning to others;
- Removal of victims to safe area;
- Observe signs and symptoms of casualties;
- Determine extent of contamination;

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- Establishment of exclusion, contamination reduction, and support zones;
- Control access to the area;
- Determine the contaminant/hazards involved;
- Control/stop further releases;
- Initiate decontamination procedures for response personnel/equipment;
- Sample water/soil/air/product;
- Contain material already released; and
- Implement countermeasures.

7310 Sampling Assistance and Resources

The following agencies can provide onsite sampling followed by laboratory analysis of hazardous substances. For each entity, we have identified their capabilities with these abbreviations: Toxic Industrial Chemicals (TIC), Chemical or Biological Warfare Agents (WMD), and Radiation (RAD).

Entity	Location	Phone Number	Capabilities
Federal			
US EPA- Region VI	Dallas, TX	(800) 887-6063	TIC, WMD, RAD
CG Gulf Strike Team	Mobile, AL	(251) 441-6601	TIC, WMD, RAD
FBI Hazardous Materials Response Unit	Washington, D.C.	(202) 324-3000	TIC, WMD, RAD
Louisiana State			
National Guard 62nd Civil Support Team	Carville, LA	(255) 319-4726	TIC, WMD, RAD

For a complete listing, see the following link to the: Hazardous Materials Response Special Teams Capabilities and Contact Handbook (2005).

www.Nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=15552

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7320 Laboratory Assistance and Resources

The following laboratory resources and networks can be used to identify appropriate sampling techniques, analytical methods, and available laboratories for the analysis of samples from various matrixes:

Laboratory Source	Description	Contact/Info
Center for Disease Control	Laboratory Response Network (LRN)- A collaborative effort of federal, state, military, and private labs to aid in response efforts of a TIC, WMD, or RAD event.	800-232-4636 http://www.bt.cdc.gov/lrn
EPA Environment Response Laboratory Network (ERLN)	A network of agency, State environmental, commercial and other Federal laboratories who will provide integrated, rapid analysis using standardized diagnostic protocols, and procedures.	http://www.epa.gov/erln/index.html
EPA Laboratory Compendium	Network of EPA national labs, state public health, and private labs to aid in a water security event, in addition to TIC, WMD, and RAD events.	703-818-4200 http://www.epa.gov/compendium
Association of Public Health Laboratories (APHL)	State Public Health Laboratories-Emergency Contact Directory.	http://www.aphl.org/aphlprograms/phpr/Documents/PHPR_EmergencyContactList.pdf
National Environmental Laboratory Accreditation Program (NELAP)	Current listing of accredited environmental labs and their primary accreditation body, in addition to types of sample media the labs can analyze.	http://www.nelac-institute.org/accred-labs.php
National Environmental Method Index (NEMI)	Search all chemical, biological, microbial, toxicity, and physical methods in NEMI.	https://www.nemi.gov/apex/f?p=237:1:2348558109063112
EPA Method Collection	Standard Analytical Methods (SAMs) for environmental	http://www.epa.gov/fem/methcollectns.hrm

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measurement and regional EPA laboratory contact information.

7400 Planning

7410 Coordination with other Hazardous Materials Planning

Planning for hazardous substance response happens at a number of levels throughout the Southeast Louisiana Area Committee's area of responsibility. As a result of the SARA Title III requirements, State Emergency Response Commissions (SERCs), Local Emergency Planning Committees (LEPCs), and Tribal Emergency Response Commissions (TERCs) were formed. Within Louisiana State, absent a formal TERC, the senior tribal representative is responsible for implementation of all SARA Title III provisions. The purpose of these groups is to develop local emergency response plans, participate in exercises to ensure preparedness at the local level, and arrange for training for local responders. In addition, local departments of emergency management (or similar groups) may assist with these functions as well as notification of hazardous substance incidents. The federal government provides very limited funding to SERCs, LEPCs, and TERCs through the Hazardous Materials Emergency Preparedness grant program. The level of SERC, TERC, and LEPC activity varies widely from across the region. The emergency management positions vary and may be a Department of Emergency Management, Emergency Services, Civil Defense, or Disaster Services.

The Southeast Louisiana Area Contingency Plan serves as the primary response planning document for the federal and state response agencies in the Southeast Louisiana Area Committee boundaries.

7420 Natural Resource Trustees

The following list outlines the Trustees for natural resources designated in Subpart G of the NCP, and provides a brief description of the resources that may be potentially impacted as a result of an oil spill or hazardous material release. Natural resources include land, fish, wildlife, biota, water, ground water, drinking water supplies, and other such resources. This list is provided for informational purposes and is not intended to be all-inclusive.

7420.1 Federal Trustees

Department of the Interior (through the Bureau of Indian Affairs, Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, National Park Service, Bureau of Ocean Energy Management, Bureau of Safety and Environmental Enforcement.)

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- Migratory birds and certain anadromous fish, endangered species, and marine mammals and their supporting ecosystems;
- Federally owned minerals;
- Federally managed water resources;
- Natural and cultural resources located on, over, or under land administered by DOI through its component bureaus;
- National Parks, National Wildlife Refuges, National Landscape Conservation Areas, etc; and
- Those natural resources for which an Indian tribe would otherwise act as trustee in those cases where the United States acts on behalf of the Indian tribe.

Department of Commerce (through the National Oceanic and Atmospheric Administration)

- Marine fishery resources and certain anadromous fish, endangered species, and marine mammals and their supporting ecosystem;
- National Marine Sanctuaries; and
- National Estuarine Reserves.

Department of Agriculture (through the U.S. Forest Service)

Natural and cultural resources located on, over, or under land administered by USFS.

Department of Defense

Natural and cultural resources located on, over, and under land administered by DOD.

Department of Energy

Natural and cultural resources located on, over, and under land administered by DOE.

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7420.2 State Trustees

All unauthorized discharges of pollutants into Louisiana State water must be immediately reported to the Louisiana Emergency Hazardous Materials Hotline, 1-877-925-6595. The SOSC is responsible for notification to State Natural Resource Trustees. A complete list of the State Natural Resource Trustees can be found in the Louisiana State Oil Spill Contingency Plan.

7420.3 Tribes

Tribes with reservations and/or usual and accustomed hunting or fishing grounds within the state of Louisiana applicable to this plan, must be notified by the Federal On-Scene Coordinator in the event an incident may impact or threaten to impact any of their resources. Since boundaries for usual and accustomed hunting and fishing grounds may be complicated, it is recommended that the Department of the Interior and/or the Bureau of Indian Affairs (BIA) be consulted to ensure proper notifications are made. Tribes must also be notified if there may be potential impact from a spill or spill response operations to any tribal cultural resources. Again, DOI and BIA may assist in identification of tribes for notification; however, it remains the FOSC's responsibility to make all proper notifications to tribes.

7430 Air Plume Modeling

The National Response Framework designated the Interagency Modeling and Atmospheric Assessment Center (IMAAC) as the single Federal source of airborne hazards predictions during incidents that involve multiple federal agencies. IMAAC is responsible for producing and disseminating predictions of the effects from hazardous chemical, biological, and radiological releases. IMAAC is not intended to replace or supplant dispersion modeling capabilities that Federal agencies currently have in place to meet agency-specific mission requirements. Rather, it provides interagency coordination to use the most appropriate model for a particular incident and for delivery of a single Federal prediction to all responders. An IMAAC fact sheet can be downloaded here: <https://narac.llnl.gov/>.

Emergency IMAAC assistance can be requested through IMAAC Operations at 925-424-6465 or through the DHS National Operations Center at 202-282-8101.

CAMEO (For direct air plume modeling):

The CAMEO Suite of applications (CAMEO- Computer-Aided Management of Emergency Operations, ALOHA- Aerial Locations of Hazardous Atmospheres, and MARPLOT- Mapping Application for Response, Planning, and Local Operational Tasks) is designed to allow the user to plan for and respond to hazardous substance incident.

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The CAMEO Chemical Database has identification information and response recommendations for thousands of chemicals commonly transported in the United States. CAMEO also includes blank database templates that state and local organizations can enter information for facilities that store hazardous substances. The CAMEO software suite can be downloaded for free from: <http://www.epa.gov/oem/content/cameo>.

ALOHA can predict the movement of hazardous substances in the atmosphere and display this on a digital map via MARPLOT. ALOHA has almost a thousand chemicals in its database. MARPLOT uses electronic maps created by the Bureau of Census that cover the entire country and can be downloaded for free as part of the CAMEO software suite mentioned above. Local HazMat Teams are often proficient with ALOHA modeling.

7440 Transition to Long-Term Cleanup

At some point after the peak of the initial response phase, the nature of site activities may evolve into a long-term clean-up/remedial phase. Depending upon the scope of activities and the ability of the local responders, post-initial response and mitigation phase efforts may necessitate mobilization of additional resources. Also, it is possible that additional federal and/or state agency representatives may need to be involved with the long-term phase to ensure that regulatory mandates are followed. It is critical that the initial responders debrief the incoming clean-up staff prior to demobilizing. Standard long-term/remedial clean-up actions are:

Evaluate clean-up/decontamination options;

Implement cleanup alternatives; and

Long-term monitoring or remediation of impacted area, if necessary.

7450 Disposal

A number of different hazardous wastes may be generated as a result of an incident. The Responsible Party or lead agency must address proper disposal of the wastes in accordance with the Resource Conservation and Recovery Act (RCRA), the NCP, and the Southeast Louisiana Area Contingency Plan, state, and local regulations. See Chapter 4000, Appendix P for Louisiana State Disposal Guidelines. Options for disposal of material connected to the emergency response action will be addressed by the State with support by the federal agencies for those agents, substances, or radioactive materials that need special care.

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7450.1 Biological Waste (WMD)

The need to dispose of material contaminated with biological agents is rare, and therefore standard protocols do not exist. Often it is possible to neutralize the biological agent, after which the material may be treated as non-hazardous garbage. The appropriate disposal method for biological waste will be dependent on the specific situation, and will be influenced by politics. It will require consultation between local, state, and federal partners as well as agreement from the disposal site operator.

7500 Logistics

7510 Federal Emergency Response Teams

Information regarding Federal Hazardous Materials Response Teams can be found in Chapter 9000, Appendix R in the Area Response Resource Inventory, Hazardous Materials Response Special Teams Capabilities and Contact Handbook.

7520 Contractor Support

There are a number of contractors in the Southeast Louisiana Area with expertise in responding to hazardous substance releases. It is essential that any contractor retained have the appropriate training to meet the OSHA 29 CFR Part 1910.120 health and safety requirements and be capable of responding in the appropriate level of protection

7600 Finance/Administration

As outlined in Chapter 6000 of this Plan, there are a number of federal and state funding sources that may be accessed to pay for costs incurred at an incident. These sources are set up as funding mechanisms in the event that the responsible party is unable/unwilling to provide funding of response actions. Access to these funding sources is possible through the federal or state agency that is responsible for administering the fund.

Under CERCLA, the Hazardous Substance Response Trust Fund (Superfund) was established to pay for cleanup of releases of hazardous substances and uncontrolled hazardous waste sites. EPA manages and administers this fund. In order for a response/clean-up to be initiated using Superfund monies, there must be a release or the threat of release of a CERCLA hazardous substance, pollutant, or contaminant. The release must cause a threat to public health or welfare or the environment based on the criteria outlined in the NCP, 40 CFR Part 300.415(b)(2). Pollutants or contaminants must meet a higher threshold of

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posing an “imminent and substantial endangerment” to human health or the environment. The FOSC makes these determinations.

The NCP 40 CFR Part 300.415(b)(2) criteria for accessing the Superfund:

- Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;
- Actual or potential contamination of drinking water supplies or sensitive ecosystems;
- Hazardous substance or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of a release;
- High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;
- Weather conditions that may cause hazardous substances or pollutants or contaminants to or be released;
- Threat of fire or explosion;
- The availability of other appropriate federal or state response mechanisms to respond to the release; and
- Other situations or factors that may pose threats to public health or welfare of the United States or the environment.

7610 Local Government Reimbursement

Local authorities (county, parish, city, municipality, township, or tribe) may apply for reimbursement of costs incurred in response to an incident through the EPA, which administers the Superfund. States are specifically excluded from seeking reimbursement from the Superfund. Local governments are eligible for reimbursement up to \$25,000 per incident for costs such as overtime charges, response contractors, equipment purchased for the response, and replacement of damaged equipment. The EPA may accept only one request for reimbursement for each hazardous substance release incident. EPA cannot reimburse for costs previously budgeted for by the local government. On February 18, 1998, EPA published an Interim Final Rule simplifying the process for Local Government Reimbursement (LGR). Information on the rule and application forms may be obtained by calling EPA’s LGR Helpline at:

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(800) 431-9209 or <http://www.epa.gov/superfund/programs/er/lgr>

7620 Cost Documentation

All entities and agencies should document the full range of costs in responding to an incident. Since it may never be clear at the onset of an incident how costs might be recovered, it is important that records meet a very strict standard of accuracy and completeness.

Upon completion of all site activities and/or completion of each phase of an incident, the FOSC may be responsible for submitting letters and/or reports to other agencies. The NCP and Southeast Louisiana Area Contingency Plan require that an FOSC Report be submitted, if requested, to the National Response Team or the Regional Response Team. Also, those responders and agencies that accessed fund sources, or which to access fund sources for reimbursement, must provide written documentation and information to support the cost incurred. Costs must be fully and accurately documented throughout a response. Cost documentation should provide the source and circumstance of the release, the identity of the Responsible Parties, the response actions taken, accurate accounting of federal, state, or private party costs incurred for response actions, and impacts, and potential impacts to the public health and welfare and the environment.

7700 Reference Material

CERCLA hazardous substance, and their reportable quantities, are listed in 40 CFR Part 302.4. CERCLA and EPCRA RQs may also be found in EPA's "List of Lists" at: <http://www.epa.gov/ceppo/pubs/title3.pdf>. Radionuclides listed under CERCLA are provided in a separate list, with RQs in Curies. <http://nrt.org/Production/NRT/NRTWeb.nsf/PagesByLevelCat/Level2Hazards?Opendocument>

Information Source	Description	Web Link
Code of Federal Regulations	29 CFR- Labor	Titles can be found online at the following web address: http://www.gpoaccess.gov/cfr/index/html
	33 CFR- Navigation and Navigable Waters	
	40CFR- Protection of the Environment	
	40CFR300- NCP	
	49CFR- Transportation	
Safety	NIOSH Manual of Analytical Methods	http://www.cdc.gov/niosh/docs/2003-154

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Chemical Properties

OSHA Guidance Manual for Hazardous Waste Site Activities	http://www.osha.gov/Publications/complinks/OSHG-HazWaste/4agency.html
Quick Selection Guide to Chemical Protective Clothing	http://www.wiley.com/WileyCDA/WileyTitle/productCd-0470146818.html
3M Respirator Selection Guide and Odor Thresholds for respirators	http://solutions.3m.com/wps/portal/3M/en_US/Health/Safety/Resources/Four/
ATSDR Medical Management Guidelines for Acute Chemical Exposures: includes information on physical properties, symptoms of exposure, standards and guidelines, personal protection, decontamination, and care for first responders, pre-hospital, and hospital providers	http://www.atsdr.cdc.gov/MMG/index.asp
ATSDR Chemical Specific Information	http://emergency.cdc.gov/agent/agentlistchem.asp
ATSDR Chemical Specific 2-Page Info Sheet	http://www.atsdr.cdc.gov/toxfaqs/index.asp
NIOSH Pocket Guide to Chemical Hazards	http://www.cdc.gov/niosh/npg/
ACGIH TLVs and BEIs	http://www.acgih.org/tlv/
Wiley Guide to Chemical Incompatibilities	http://www.wiley.com/WileyCDA/WileyTitle/

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First Responder References

	productCd-0470387637.html
Chemical Properties Handbook, Thermodynamics- Environmental Transport, Safety and Health Related Properties for Organic and Inorganic Chemicals	http://www.amazon.com/Chemical-Properties-Handbook-Thermodynamics-Environmental/dp/0070734011
The Merck Index	http://www.merckbooks.com/minindex/
Crop Protection Handbook (formerly the FARM and Chemical Handbook)	http://www.meistermedia.com/handbook/
EPA OCS Blue Book- A collection of field related resources	http://www.epaosc.org/bluebook/bluebook.asp
Hazardous Materials Guide for First Responders	https://www.usfa.dhs.gov/applications/publications/display.cfm?sc=16&mc=33&ol=
CSX Transportation Emergency Response to Railroad Incidents	http://csxhazmat.kortx.com/
DOT Emergency Response Guidebook	http://www.phmsa.dot.gov/hazmat/library/erg
ASTDR- HazMat Emergency Preparedness Training and Tools for Responders	http://www.atsdr.cdc.gov/hazmat-emergency-preparedness.html

Military

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References

USAMRIID Medical Management of Chemical Casualties Handbook	http://www.usamriid.army.mil/education/instruct.htm
USAMRIID Medical Management of Biological Casualties	
Textbook of Military Medicine (TMM)	
Defense against Toxin Weapons Manual	
Jane's Chem-Bio Handbook	

7800 Reserved

7900 Reserved

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Chapter 8000
Salvage and Marine

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Firefighting

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Chapter 8000 Salvage and Marine Firefighting

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8100 Vessel Salvage Operations

Salvage efforts for vessels that have allided, collided, grounded or sunk occur in three phases: stabilization, refloating and post-floating. Guidance and further discussion on vessel salvage operations is contained in Tab M, Section II of Section J of this plan. The Operations Section's Emergency Response Branch will be responsible for overseeing or conducting the salvage operations. They will be assisted by the U.S. Navy's Supervisor of Salvage, personnel from the USCG Marine Safety Center, USCG Strike Team members and MSO inspectors.

Special consideration for the vessel's stability and structural integrity must also be exercised during any actions taken to stop or mitigate the source of the discharge such as an internal cargo transfer or lightering. Intentional grounding of a stricken vessel as a mitigation technique for reducing or eliminating the discharge of oil should only be used as a last resort when it is positively known that a greater discharge or the loss of an entire tank vessel will be prevented.

The following is a list of waste/salvage oil disposal transportation carriers in LA.

COMPANY	ADDRESS	CONTACT	PHONE
Hydro-Vac	Rte 10, Box 20 Lake Charles, LA 70601	Scott Washington	(337) 433- 1385
US Filter Recovery Services	14890 Intracoastal Drive, New Orleans, LA 70129		(504) 254- 9021 (Fax) 254- 4316
Inter-National Oil Service	14890 Intracoastal Drive New Orleans, LA 70129		(800) 523- 9071

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K & G Environmental Service, Inc	164 Rue Royal, Slidell, LA 70461	Annette Mayeaux	(337) 433-9486 (985) 643-4745
Newpark Environmental Services, Inc.	4023 Ambassador Caffery Pkwy. 4th floor PO Box 31480 Lafayette, LA 70593-1480		(337) 984-4445 (fax) 988-4516
Rebel Energy, Inc.	PO Box 16808 Lake Charles, LA 70616-6808	Kenneth Myers	(337) 433-4619

8200 U. S. Navy Supervisor Salvage (SUPSALV)

U.S. Navy Supervisor of Salvage
Commander Naval Sea Systems Command
Attn: OOC
Washington, D.C. 20362-5101
Daytime phone# (703)607-2758
24/emergency phone# (703)602-7527

The SUPSALV has response equipment for salvage and Navy offshore spills. The SUPSALV equipment is available on a cost reimbursable basis to the Federal OSC for non-Navy spill response.

The USN is the Federal agency most knowledgeable and experienced in ship salvage, shipboard damage control, and diving. The USN has an extensive array of specialized equipment and personnel available for use in these areas as well as specialized containment, collection, and removal equipment specifically designed for salvage related and open sea pollution incidents.

The SUPSALV can provide salvage expertise and maintains a warehouse on each coast stockpiled with salvage and response gear.

The SUPSALV of the Naval Sea Systems Command (NAVSEA) is responsible for providing oil and HAZMAT pollution response equipment, technical expertise, and related support to pre-designated Navy OSC upon request. SUPSALV equipment has been designed and procured for response to Navy offshore or salvage related spills. Their equipment and assets are available on a cost reimbursable basis to federal OSC for non-Navy spill response.

Navy SUPSALV pollution control equipment, equipment operators, and maintenance support are available to pre-designated federal OSC. Formal requests must be made through the Chief of Naval Operations (CNO), Navy Command Center, Washington, D.C. This request must be routed through the RRT. A formal written request shall be sent to CNO following the sample message format.

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An “advance” call should be made to SUPSALV directly. This call will allow SUPSALV to begin preparations for equipment deployment. The formal message must be sent regardless of whether or not a call is made. SUPSALV is prepared to provide on-scene technical expertise and advice over the phone. Contact numbers for SUPSALV are:

1. Formal requests for assistance: 24 hours (202) 695-0231 CNO Duty Captain (autovon) 225-0231
2. Informal liaison and advance notification: Working hours (202) 697-7403 (autovon) 227-7403 Non-working hours (202) 692-7527 NAVSEA Duty Officer (autovon) 222-7527

SUPSALV equipment and personnel are as self-supporting as transportation limitations permit.

A staging area must be provided by local sources to augment SUPSALV assistance. This is the location where spill response equipment is assembled and held pending deployment to the spill site. During prolonged spill control operations, equipment maintenance and repair may be accomplished in the staging area. As a minimum, staging areas should provide the following considerations:

A surfaced area large enough for interim storage of all equipment deployed to the spill site. Covered storage is desirable but not essential except under extreme weather conditions.

Close proximity to the spill site to minimize transit time for equipment called to the scene. This is especially important for near-shore operations when the staging area at pier side replaces the offshore support platform as the focal point for daily operations.

Equipment is available from three SUPSALV locations: Williamsburg, VA; Stockton, CA; and Pearl Harbor, HI. For the purposes of this plan, the equipment staged in Hawaii will not be considered due to the inaccessibility and limited quantities and types of equipment available.

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SAMPLE MESSAGE TO CNO, SUPSALV

ZCZC

NCNEMY

NC NE DE MY

P _____Z _____

FM COGARD MSO MORGAN CITY LA

TO CNO WASHINGTON DC

INFO COMNAVSEASYS COM WASHINGTON DC

NC/CCGDEIGHT NOLA LA//M/O//

NE/COMCOGARDGRU NOLA LA

COMCOGARD MLC LANT NEW YORK NY//FAC-2//

COMDT COGARD WASHINGTON DC//G-MER//

COGARD NRCWASHINGTON DC

COGARD NSF LANTAREA MOBILE AL

BT

UNCLAS //N05090//

SUBJ: REQUEST FOR SPILL RESPONSE ASSISTANCE

- A. (1)
1. CNO FOR OP-64 AND OP-45. NAVSEA FOR CODE OOC. REF A REPORTED SIGNIFICANT DETAILS OF SUBJECT SPILL (2) AS DISCUSSED WITH (3),
 - 2.. NAVSEA OOC SPILL RESPONSE ASSISTANCE IS REQUESTED. REIMBURSEMENT TO NAVSEA FOR ALL NAVSEA OOC OPERATIONAL COSTS INCURRED IN SUBJ SPILL RESPONSE WILL BE FROM (4).
 3. CG INITIAL MAXIMUM LIABILITY BASED ON OOC COST ESTIMATE IS \$ ____5____. AN APPROVED FUNDING DOCUMENT IN THIS AMOUNT WILL BE FORWARDED TO NAVSEA WITHIN FIVE WORKING DAYS OF RELEASE OF THIS MESSAGE REQUEST.
 4. A SUITABLE STAGING AREA FOR RESPONSE EQUIPMENT HAS BEEN SELECTED. THE EQUIPMENT SHIPPING ADDRESS IS: _____6_____. THE RECEIVING OFFICER IS _____7_____ AT COML (985) 384-2406.
 5. CG ON SCENE COORDINATOR IS _____8_____ AT COML (985) 384-2406.
 6. CG FISCAL REPRESENTATIVE IS _____9_____ AT COML _____10_____.

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Table:

Date time group of the initial msg report of spill from OSC.

Report the following only if CNO and NAVSEA were not ref a addressees:

Date and time spill occurred.

Spill location: Geographic name and/or lat/long.

Spill source.

Spill cause.

Type of product spilled.

Quantity spilled.

Insert the time and date of initial phoncon that was made to the SEA OOC REP. Include reps name.

Name the fund that has been opened to pay for all incurred costs (ex. OSLTF; CERCLA Superfund; USCG MLC-LANT).

Dollar amount of CG liability.

Put the address where the equipment is to be sent. It should be the closest adequate spot to the spill area.

Receiving officer's name, which will normally be Chief of Port Operations.

The COTP.

CG fiscal representative's name.

Complete phone number of rep.

Definitions:

OOO-STANDARD ROUTING CODE

SEA-NAVSEA REPRESENTATIVE

Individual Navy Facilities also locally stockpile some response equipment, which is also listed in the SRRI.

In order to complement US Navy Fleet capabilities, the SUPSALV Directorate in the Naval Sea Systems Command maintains worldwide commercial contracts for:

Salvage, towing, and ocean oceanengineering

Diving services/underwater ship husbandry

Search and recovery

Oil/hazardous material spill response

Under the Salvage Act (PL 80-513), the Clean Water Act (PL 92-500), and the National Economies Act (31 USC 636) the US Navy is authorized to provide the above services to other federal agencies. These competitively awarded contracts are activated by issuing tasking statements. This avoids the time consuming requirements to advertise for bids and award an independent contract for each operation. The following contracts comply with the Competition in Contracting Act (CICA) and may be used by other federal agencies with a simple interagency transfer of funds:

SALVAGE: Contracts for salvage, towing, engineering support, and salvage related services are available for routine and emergency use throughout the world. Once funding has been identified, the contracts can be activated immediately.

DIVING SERVICES/UNDERWATER SHIP HUSBANDRY: Contracts for diving services, mixed gas and saturation diving capability to depths of 600 feet, underwater ship husbandry, waterborne hull cleaning, and inspection provide:

Salvage support

Underwater wet and dry habitat welding

Nondestructive testing

Underwater inspection, maintenance, and repair

Underwater TV and photographic coverage

Waterborne cleaning of ship's hulls using power equipment

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SEARCH AND RECOVERY: SUPSALV maintains two specialized contracts and a significant inventory of the following sophisticated equipment:

SEARCH: This contract provides a cadre of highly trained search specialists and commercial search equipment. Government equipment operated by the search contractor includes a pinger locator system and a search and survey system with side scan sonar, real-time TV, and navigation subsystems to track and plot the vehicle to depth of 20,000 feet of seawater (FSW).

RECOVERY: This contract provides services to operate the SUPSALV remotely operated vehicles DEEP DRONE and CURV III. DEEP DRONE works to 8,000 FSW and is equipped with two manipulators, three TV cameras, 35mm film camera, CTFM sonar, and an acoustic navigation system. CURV III can work to 20,000 FSW and is equipped with subsystems similar to the DEEP DRONE.

OIL SPILL RESPONSE: SUPSALV maintains a large inventory of equipment at East and West coast response centers and a small inventory near Pearl Harbor, HI. Offshore oil skimmers, containment boom, support craft, portable oil off-loading pumps, and related equipment are available with contractor operators for emergency response worldwide. Request and reimbursement procedures for SUPSALV salvage and oil spill support for the US CG are addressed in a USN/USCG Interagency Agreement.

POC: For questions or amplification, contact the Operations and Ocean Engineering Division of the Supervisor of Salvage Directorate, Naval Sea Systems Command at (703)607-2758. After working hours and weekends, call the NAVSEA duty officer (703)602-7527.

(See NSFCC Spill Response Resource Inventory <SRRI> for a listing of SUPSALV equipment).

Individual Navy facilities also locally stockpile some response equipment, which is already listed in the SRRI.

8210 Fire Fighting/Salvage Companies/Divers

SALVAGE COMPANIES/DIVER

DIAMOND SERVICES CORPERATION 503 DEGRAVELLE RD. AMELIA, LA. 70340 (985) 631-2187 *24 HR. SERVICE	ACADIANA DIVERS AND SALVAGE INC. 3209 MOSS STREET LAFAYETTE, LA. 70507 (337) 232-8714 *24 HR. SERVICE
AMERICAN OILFIELD SERVICES 130 EAST KALISTE SALOOM RD. LAFAYETTE, LA. 70507 (337) 234-4590 * 24 HR. SERVICE	BAGALA'S DIVING SERVICE 506 CUTOFF CUTOFF, LA 70345 (985) 632-5071 * 24 HR. SERVICE
CAL DIVE 254 FORD INDUSTRIAL RD. AMELIA, LA 70340 (985) 631-0315 (985) 385-1104	CONTINENTAL DIVING SERVICE P.O.B. 2484 MORGAN CITY 70381 (985) 395-5251 24 HR. SERVICE

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*24 HR. SERVICE NO STANDERD RATES LIST, BIDS ARE ON EACH PARTICULAR JOB.	
EYMARD ROGER JR. DIVING SERVICE RT. 1 BOX 281 A GALLIANO, LA 70354 (985) 475-7232 * 24 HR. SERVICE	

8220 Salvage

This section describes marine salvage.

Note: The Coast Guard Captain of the Port has jurisdiction over vessel salvage situations occurring within his/her zone; this does not preclude any other agencies' interests with respect to spill response.

A vessel casualty and oil spill or potential oil spill, may require the following responses:

- a. Search and rescue
- b. Oil spill containment/clean-up
- c. Fire fighting
- d. Vessel salvage

The first priority in a vessel casualty is the safety of the crew and any other personnel in the area. Secondary concerns are for environmental protection and vessel salvage. The responders aboard the vessel should complete a casualty-scene information that will become essential to the early efforts at salvage

8220.1 Salvage Operations.

Salvage is a term used to describe all services rendered to save property from marine peril. This broad definition encompasses not only actions undertaken to save a vessel or cargo, but also includes wreck removal, harbor clearance, and deep water search and recovery.

Salvage includes:

Providing firefighting assistance.

Refloating a vessel from a stranding.

Offloading cargo or water to prevent foundering, or removing sound cargo from impending peril.

Shoring, patching and making temporary repairs to correct structural, stability, or mechanical problems.

Rescue towing of an incapacitated vessel to a safe haven.

Preventing pollution.

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8220.2 Salvage Masters

In order to conduct a proper salvage you must have someone in charge that has the knowledge of how to respond to the specific situation. The person in charge of a salvage operation is known as the salvage master.

A Salvage Master should have direct experience in ship salvage, demonstrating experience in the use of salvage ships and craft, ground tackle, heavy lift craft, cranes and booms, oil pollution containment equipment, and all ancillary types of salvage equipment (e.g. pumps, compressors, welding equipment, etc.). The salvage master acts under the direction of the FOSC, he generally assumes complete control of salvage, harbor clearance, and related engineering operations.

8220.3 Salvage Response Considerations

This section describes salvage situations and the general guidelines to follow in responding to a salvage situation. In addition, this section also describes actions to be taken in response to vessel strandings, the relationship between the on-scene coordinator, the responsible party, the vessel's master, and the salvor. Information pertaining to salvage procedures was adapted from Chapter 8 of Volume I of the U.S. Navy Salvage Manual. All parties involved in a salvage response should refer to the manual for specific information relating to salvage techniques.

Salvage efforts may be divided into three phases: stabilization, refloating, and post refloating. During the stabilization phase, salvors take steps to limit further damage to the vessel, and to keep the ship from being driven harder aground or broaching.

Response leaders gather information and formulate a salvage plan; that plan specifies actions to be taken during the refloating and post refloating phases of the salvage. The refloating phase commences when the salvage plan is executed and ends when the ship begins to move from her strand. During post refloating, the vessel is secured and delivered to the designated port facility.

Parties involved in salvage response should refer to Chapter 8, Volume I of the U.S. Navy Salvage Manual for specific information relating to salvage techniques.

8220.4 Stabilization Phase

This phase of operations must take into account the potential discharge of oil and hazardous substances into the environment. Upon stranding the Vessel's master **SHOULD** take the following steps:

Have ships personnel report to their emergency stations.

Take action to determine the vessel's condition and stabilize the vessel.

Secure watertight closures.

Notify Coast Guard and vessel's Operations center.

Request salvage assistance.

Note course and speed at time of stranding.

Obtain and provide if necessary, an accurate cargo stowage plan.

Evaluate the following:

1. Safety of personnel

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2. Weather and sea conditions
3. Forecast for change in weather and sea conditions
4. Nature of the sea floor and shoreline.
5. Depth of water around ship
6. Ground reaction
7. Damage to hull
8. Damage to shafting, screws, and rudder
9. Risk of further damage
10. Prospect of maintaining communications
11. Ground reaction
12. Likely draft and trim after refloating
13. Potential for discharge of pollutants
14. Position of vital and cargo systems' valves
15. The liquid level of all tankage (e.g. fuel, ballast, cargo, etc.)

The Vessel's Master should not:

Jettison weight to lighten the vessel in an attempt to back the vessel off.

Attempt to back the vessel off when the bottom is torn open.

Fail to take action to stabilize the vessel and to determine its condition.

The Vessel's Master should request salvage assistance immediately, and not delay pending the results of an early attempt to refloat the vessel. If the damage assessment indicates the vessel is not in danger of broaching, sinking or capsizing, the master may attempt to back the vessel clear using full engine power on the next high tide.

The Responsible Party should take the following steps:

Contact the Coast Guard. Provide a current status of the situation.

Implement a Unified Command System response organization.

Identify salvage resources available and determine time required for those resources to arrive on scene:

1. Salvage Master
2. Salvage Vessel's
3. Tug Boats
4. Beach Gear
5. Barges with Ground Tackle
6. Lightering Resources
7. Lifting Vessels
8. Appropriate portable cargo transfer pumps and hoses Hull patching equipment

Initiate salvage response. Over-estimate the quantity of resources needed.

Keep the vessel's master informed of all actions taken.

Obtain the services of a Naval Architect.

Conduct damage stability and longitudinal strength calculations.

Upon being assigned responsibility for the salvage action, the salver should:

Advise the vessel that he (his organization, vessel, etc.) is enroute to assist, and provide ETA (estimated time of arrival) on scene.

Ensure that the master is aware of the information covered in the preceding paragraphs that relates to early attempts to refloat the vessel.

Obtain all information available regarding the vessel's particulars and details of the stranding. This should include:

1. An accurate position of the stranding (latitude/longitude)
2. Means used to fix position
3. Drafts at time of sailing

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4. Estimated drafts at time of stranding
5. Applicable chart numbers
6. Drafts after stranding, with state of time and tide
7. Soundings alongside from forward to aft, corrected to datum of the chart of the area
8. Soundings of all tanks and voids, noting changes in contents
9. Ships course and speed at time of stranding
10. Ships heading after stranding and details of changes
11. Liveliness of the vessel in response to swells and surf
12. Weather conditions
12. Sea and current conditions
13. Extent of vessel damage
14. Location of grounding points and estimated ground reaction
15. Seafloor type
16. Status of vessel's machinery and piping systems
17. Vessels loading plan or cargo manifest
18. Amount and location of hazardous substances
19. Locally available resources (tugs, cranes, bulldozers)

Upon arrival, the salvage ship or vessels, and personnel, should conduct damage control and position stabilization. Damage control actions may range from augmenting the ship's crew, to conducting firefighting and flooding control. Position stabilization consists of securing the ship at the first opportunity to prevent it from broaching or being driven further ashore.

Prior to developing a salvage plan, the salver must conduct a thorough salvage survey of the vessel and its immediate surroundings. The survey is defined in the Navy Salvage Manual as being comprised of: the preliminary survey; the detailed hull survey; the topside survey; the interior survey; the diving survey; the hydrographic survey; and the safety survey. The salver should refer to Section 8-2.6 of Volume I of the Navy Salvage Manual for details. The information should be recorded on the salvage survey form included in Appendix I, Chapter 8, Volume I of the Navy Salvage Manual, or an equivalent.

Based on information received from the vessel, the salver should evaluate the following:

Vessel's original estimates of ground reaction and freeing force.

Stability afloat and residual strength.

Ship's machinery condition and retraction power available locally.

Ship's ability to proceed to a safe haven after refloating.

The salver should then advise the master based on these evaluations, and take the following steps to mobilize the salvage force:

Determine personnel and material required

Collect information about the stranded ship. Sources include:

1. Owner
2. Vessel's classification society
3. Coast Guard

Ensure needed navigation material is on board.

Begin recording written record of information and actions taken.

Ensure that salvage vessels enroute will be prepared to respond upon arrival to the stranding site.

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Upon arrival (in coordination with the response organization/OSC where applicable), the salvage master should conduct damage control and stabilization. Damage control actions may range from augmenting the vessel's crew for firefighting and flooding control. Position stabilization consists of securing the vessel to prevent broaching or being driven further ashore. The salver must then, in preparation for the development of the salvage plan, conduct a thorough salvage survey. This survey is defined and described in the Navy Salvage Manual, Volume 1 Section 8-2.6, as being comprised of the preliminary survey, a detailed hull survey, a topside survey, an interior survey, a diving survey, a hydrographic survey and a safety survey. The information gathered during the surveys should be recorded on a survey form as found in Appendix of the aforementioned manual.

Basic information identifying the ship's characteristics and the condition of the stranding.

An analysis prepared by the salver and naval architect, which provides estimates of:

1. The ground reaction
2. The freeing force
3. Location of the neutral loading point (point at which weight can be added w/out change in ground reaction)
4. Stability - grounded and afloat
5. Strength of hull girder, damaged areas, attachment points, and rigging
6. A summary of the engineering rationale employed for selection of retraction and refloating techniques
7. Hydrographic information
8. Potential pollution risks
9. List of specific safety hazards involved
10. Potential pollution risks
11. Lightering Considerations
12. Booming Considerations
13. Standby Equipment
14. Means for controlling interference between pollution response efforts and salvage efforts
15. Appendices that provide detailed information regarding techniques to be employed.
16. Location to which the vessel will proceed following refloating.
17. Means for controlling the vessel as it is freed.
18. Vessel escort, if any, to be employed.
19. Means for delivering vessel to destination (tow, own power).
20. Any preparation of vessel necessary to gain permission for entry into port of destination.
21. Means of disposal, if other than above.

8220.5 Refloating Phase

The salvage plan is implemented during this phase. The plan should be considered a flexible working plan with appropriate changes made in response to changing conditions. During this phase, all parties must be in close communication, and the process should be brought to a halt if significant safety problems develop. The salver, responsible party, and the Captain of the Port have the authority to stop salvage operations in this case.

Consideration to assuring that the problem will not be made worse must be addressed thoroughly. In the case of a heavily damaged vessel, the risk to the port and the environment may not warrant allowing the vessel to be brought into the harbor. In some cases, it may be desirable to allow the vessel to sink in deep water to mitigate environmental damage, or minimize risk to life. Obviously, these are decisions that will have all parties in the salvage effort fully involved, and the FOSC must take the lead to assure that the best management of the incident/threat is achieved.

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Working with the Responsible Party and the naval architect, the salver must develop a salvage plan. The plan must detail actions to be taken and resources to be used, and it must set organizational responsibilities and the anticipated schedule. After the plan is prepared and prior to initiating salvage operations, the Responsible Party must submit the plan to the Federal On Scene Coordinator or his designated representative, for review. The Federal On Scene Coordinator will review the plan, and approve or disapprove it based upon real or potential risks to port safety and the environment. Any plans for the intentional jettisoning of cargo will be reviewed as part of the salvage plan.

8220.6 Post Refloating Phase

This phase commences when the ship begins to move off the strand, and is completed when the ship has been delivered to a safe haven or repair facility. In addition, salvage resources and equipment should be removed from the salvage site. The options for disposal of the vessel include:

- Steaming into port, or to another location within the port
- Towing to safe haven
- Anchoring in preparation for tow or temporary repairs
- Beaching if the ship is in danger of sinking
- Scuttling or sinking

The following salvage plan items are to be updated, as necessary, following refloating:

- Overall seaworthiness
- Vessel's bottom, for damage hidden by the strand
- Condition of piping systems and machinery
- Condition of all ship's systems necessary for the transit
- Ship's stability, list, and trim (may necessitate loading or shifting of weights)
- Patching and pumping arrangements for compartments in way of damage
- Towing bridle, day marks, and navigation lights (an insurance line should be rigged even when the ship proceeds under its own power)

Following this phase, the Responsible Party shall submit a completed form CG2692 to the Officer in Charge of Marine Inspection and submit all requested information to the Senior Investigating Officer of the Marine Safety Office.

8220.7 Salvage Response for Other Than Strandings

Salvage assistance may also be required for vessel sinking and rescues (towing). In these cases, the relationships between the various parties remain the same as for strandings. For sinking, the salver must focus on methods for refloating the vessel, and vessel stability as it is refloated. For rescue situations, development of a comprehensive salvage plan may not be necessary. Use of good marine practice in establishing and maintaining the tow, and coordination with the vessel's master, tow vessel, Coast Guard SARMC, the Captain of the Port, and the vessel's owner/operator may suffice. In either of these cases, the user of this plan should follow the guidelines presented, adapting them to the specific salvage requirements at hand.

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8300 Federal Salvage Resources

8400 Navy Supervisor of Salvage Assistance (SUPSALVAGE)

In the event that the Responsible Party does not respond to the casualty, the federal government may respond to the salvage requirement, utilizing the services of Navy Supervisor of Salvage. However, financial responsibility remains with the responsible party.

Navy Supervisor of Salvage services may be obtained by:

- a. Telephoning Supervisor of Salvage Operations (703) 607-2758
- b. After hours and weekends (NAVSEA Duty Officer) (703) 602-7527
- c. Initiating a message to: CNO WASHINGTON DC//N312/N866//

Add the following if applicable:

- a. //N45// for oil pollution
- b. //N873// for diving support

Info copy to: COMNAVSEASYS COM WASHINGTON DC//OOC//

Message text should include: a brief description of services required; location; urgency; point of contact; and telephone number. If the task is urgent and requires immediate mobilization, the message should amplify this and include a statement that funding will be provided by separate correspondence.

SUPSALVAGE can provide the services of naval architects, may provide the services of naval salvage vessels, and has access to contracts that will provide the services of commercial salvors and equipment. SUPSALVAGE developed and has available software for rapid analysis of longitudinal strength and intact/damaged stability. The software is known as Program of Ship Salvage Engineering (POSSE).

8500 US Coast Guard Marine Safety Center Support

Technical support is also available from the Marine Safety Center (MSC) Salvage Team. This group can evaluate vessel stability, hull strength and salvage plans, and may also be available for on scene assistance. The MSC may be able to provide vessel plans if the ship is U.S. flag. The Federal On-Scene Coordinator may obtain services of MSC by calling (202) 366-6481 during business hours, or by calling FLAGPLOT at (202) 267-2100, after hours. The checklist should be completed and faxed to the MSC at the earliest opportunity. The Marine Safety Center fax number is (202) 366-3877.

8600 U.S. Coast Guard Gulf Strike Team

The Gulf Strike Team can be on the scene quickly to provide initial response assistance with pumps, personnel, pollution control equipment, and miscellaneous salvage hardware. The Strike Team can be contacted 24 hrs a day at (334) 441-6706. The National Strike Force Coordination Center in North Carolina can also be notified at (919) 331-6000.

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Planning Scenarios Appendix B

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Dispersant Use Policy Appendix D

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Special Monitoring of Applied Response Technologies Appendix I

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U.S. Coast Guard- Relevant Instructions, Guidelines, Procedures, and Practices List
Appendix W

Sampling Plan Appendix X

Geographic Response Plan- Sensitive Site Index Appendix

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Draft Incident Action Plan Appendix AA

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9000 Appendices

This chapter contains additional guidance and policy referenced in the ACP.

9100 Emergency Notification

Emergency notification information including Initial Assessment Checklist, Safety Consideration, etc can be found in the Preface of this plan.

9200 Personnel and Services Directory

9210 Federal Resources/Agencies

9210.1 U.S. Coast Guard

Sector New Orleans	(504) 365-2200
MSU Morgan City	(985) 380-5320
MSU Baton Rouge	(225) 298-5400
MSU Houma	(985) 851-1692
MSU Lake Charles	(337) 491-7800
MSU Port Arthur	(409) 723-6500
Sector Houston-Galveston	(713) 671-5100
Sector Corpus Christi	(361) 939-6393
Sector Mobile	(251) 441-5720
Air Station New Orleans	(504) 393-6033
Aviation Training Center (ACT) Mobile	(251) 441-6401
Recreational Boating Safety	(504) 671-2157
National Pollution Fund Center	(703) 872-6000
National Response Center	(800) 424-8802
District 8 Response Advisory Team	(504) 671-2231
District 8 External Affairs	(504) 671-2020

9210.1.1 U.S.C. G. National Strike Force (NSF)

National Strike Force Coordination Center	(252) 331-6000
Atlantic Strike Team	(609) 742-0008
Gulf Strike Team	(251) 441-6601
Pacific Strike Team	(415) 883-3311
Public Information Assist Team (PIAT)	(252) 331-6000

9210.1.2 Vessel Traffic Services

New Orleans, LA	(504) 589-2780
Berwick, LA	(225) 380-5300
Houston/Galveston, TX	(713) 678-9090

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9210.2 National Oceanic and Atmospheric Administration

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NOAA Scientific Support Coordinator*

(206) 375-5697 (District 8 SSC on call)

If no answer in 30min, call (206) 526-4911 (Hazmat 24hr phone in Seattle)

Natural Resource Trustee for DOC/NOAA*

Note: The DOC trusteeship for natural resources has been delegated to NOAA.

Contact the NOAA SSC (above). For pollution responses, the SSC is responsible for notifying and coordinating with all NOAA Natural Resource Trustee representatives, including the DOC/NOAA RRT-6 representatives and alternates.

** During a response, all NOAA science support services, including discharge and release trajectory and atmospheric modeling information should be obtained from and coordinated through the NOAA Scientific Support Coordinator.*

Additional NOAA Contact Information:

Region 6 NOAA RRT representatives

Primary:

Charlie Henry, Director

NOAA GoM Disaster Response Center

7344 Zeigler Blvd.

Mobile, AL 36608

O: (251) 544-5008 or 5006

C: (206) 849-9928

charlie.henry@noaa.gov

Alternate:

Jessica White,

NOAA Regional Resource Coordinator

NOAA GoM Disaster Response Center

7344 Zeigler Blvd

Mobile, AL 36608

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o: [\(251\) 544-5016](tel:(251)544-5016)

c: [\(206\) 719-5439](tel:(206)719-5439)

9210.3 Department of Defense

U.S. Navy Supervisor of Salvage (SUPSALV)	(202) 781-1731
U.S. Army Corps of Engineers Orleans District	(504) 865-1121
JRB New Orleans	(504) 678-3260

9210.4 U.S. Environmental Protection Agency

EPA Region VI Response & Prevention Branch	(214) 665-6428
EPA Region VI Public Affairs	(214) 665-2208

9210.5 Agency for Toxic Substance and Diseases (ATSDR)

ATSDR Region 6	(214) 665-8361
CDC Emergency Response	(770) 448-7100
Poison Control Center	(800) 222-1222

9210.6 Bureau of Safety and Environmental Enforcement (BSEE)

BSEE Gulf of Mexico OCS Region	(800) 200-4853
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9210.7 Department of Energy

U.S. Department of Energy	(504) 734-4201
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9210.8 Federal Law Enforcement

U.S. Bureau of Immigration and Customs Enforcement	(504) 310-8800
Federal Bureau of Investigation	(504) 816-3000
U.S. Marshal Service New Orleans	(504) 589-6079
U.S. Marshal Service Baton Rouge	(225) 389-0364

9210.9 Department of Transportation (DOT)

U.S. Department of Transportation	(504) 436-9100
PHMSA	(202) 366-3666

9210.10 Federal Emergency Management Agency (FEMA)

FEMA Region IV	(770) 220-5200
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9210.11 Federal Communications Commission (FCC)

FCC 24/7 Operations Center	(202) 418-1122
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9210.12 General Services Administration (GSA)

GSA	(866) 606-8220
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9210.13 Occupational Safety and Health Administration (OSHA)

OSHA Emergency	(800) 321-6742
OSHA Baton Rouge	(225) 298-5458

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9210.14 State Department

State Department Main Switchboard	(202) 674-400
State Department New Orleans Diplomatic Security)	(504) 589-2010

9220 State Resources/Agencies

9220.1 Louisiana Oil Spill Coordinators Office (LOSCO)

LOSCO	(225) 925-6606
24-Hour	(225) 200-1921
7979 Independence Blvd. Ste. 104	
Baton Rouge, La 70806	

9220.2 Louisiana Department of Environmental Quality (LDEQ)

Acadiana Regional Office	(337) 262-5584
Capital Regional Office	(225) 219-3600
Northeast Regional Office	(318) 362-5439
Kisatchie Central Office	(318) 487-5656
Northwest Regional Office	(318) 676-7227
Southeast Regional Office	(504) 736-7702
Bayou Lafourche Office	(985) 532-6206
Southwest Regional Office	(337) 491-2667

9220.3 Louisiana Department of Wildlife and Fisheries (LDWF)

LDEQ	(225) 765-2800
Hammond Field Office	(985) 543-4777
Lake Charles Field Office	(337) 491-2575
Minden Field Office	(318) 371-3050
Monroe Field Office	(318) 343-4044
New Iberia Field Office	(337) 373-0032
Opelousas Field Office	(337) 984-0255
Pineville Field Office	(318) 487-5885
Marine Fisheries Area 1(Slidell)	(985) 882-0027
Marine Fisheries Area 2 (New Orleans)	(504) 284-2030
Marine Fisheries Area 3 (Grand Isle)	(504) 284-2030
Marine Fisheries Area 4 and 5 (Bourg)	(985) 594-4139
Marine Fisheries Area 6 (New Iberia)	(337) 373-0032
Marine Fisheries Area 7 (Lake Charles)	(337) 491-2579
Enforcement Region 1 Minden Office	(318) 371-3049
Enforcement Region 2 Monroe Office	(318) 362-3102
Enforcement Region 3 Pineville Office	(318) 487-5634
Enforcement Region 4 Opelousas Office	(337) 948-0257
Enforcement Region 5 Lake Charles Office	(337) 491-2580
Enforcement Region 6 Thibodaux Office	(985) 447-0821
Enforcement Region 7 Baton Rouge Office	(225) 765-2999
Enforcement Region 8 New Orleans Office	(504) 284-2023
Enforcement Headquarters	(225) 765-2989

9220.4 Louisiana Department of Natural Resources (LDNR)

Oil and gas incidents	(225) 342-5540
Pipeline Incidents	(225) 342-5505

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Injection well or E&P waste Incidents (225) 342-5515

9220.5 Louisiana Department of Health and Hospitals

Louisiana Department of Health (225) 342-9500

Emergency Lab (504) 458-9537

9220.5 Louisiana State Historic Preservation Office (SHPO)

SHPO (225) 342-8160

9220.6 State Law Enforcement

State Police Transportation and Environmental
Safety Section (225) 925-6113

State Police Hazardous Material and Explosives
Control Unit (225) 925-6113

Louisiana State Police Bomb Squad (225) 925-6113

9230 Parish & Local Resources/Agencies

9230.1 Parish Homeland Security and Emergency Preparedness

Acadia	(337) 783-4357
Allen	(337) 300-9032
Ascension	(225) 621-8360
Assumption	(985) 369-7351
Avoyelles	(318) 240-9160
Beauregard	(337) 460-5442
Bienville	(318) 263-2019
Caddo/Bossier	(318) 425-5351
Calcasieu	(337) 721-3800
Caldwell	(318) 649-3764
Cameron	(337) 775-7048
Catahoula	(318) 744-5697
Claiborne	(318) 927-3575
Concordia	(318) 757-8248
DeSoto	(318) 872-3956
East Baton Rouge	(225) 389-2100
East Carroll	(318) 559-2256
East Feliciana	(225) 683-1014
	(225) 244-5881
Evangeline	337) 363-3267
Franklin	(318) 435-6247
Grant	(318) 627-3041
Iberia	(337) 369-4427
Iberville	(225) 687-5140
Jackson	(318) 259-2361 ext 20 4
Jefferson	(504) 349-5360
Jefferson Davis	(337) 824-3850
Lafayette	(337) 291-5075
Lafourche	(985) 532-8174
LaSalle	(318) 992-2151
Lincoln	(318) 513-6202
Livingston	(225) 686-3066
Madison	(318) 574-6911
Morehouse	(318) 871-3907
	(318) 281-4141

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Natchitoches	(318) 357-7802
Orleans	(504) 658-8700
Ouachita	(318) 322-2641
Plaquemines	(504) 274-2476
Pointe Coupee	(225) 694-3737
Rapides	(318) 445-0396
Red River	(318) 932-5981
Richland	(318) 728-0453
Sabine	(318) 256-2675
St. Bernard	(504) 278-4268
St. Charles	(985) 783-5050
St. Helena	(225) 222-3544
St. James	(225) 562-2364
St. John the Baptist	(985) 652-2222
St. Landry	(337) 948-7177
St. Martin	(337) 394-3071
St. Mary	(337) 828-4100 ext 135
St. Tammany	(985) 898-2359
Tangipahoa	(985) 748-3211
Tensas	(318) 766-3992
Terrebonne	(985) 873-6357
Union	(318) 368-3124
Vermilion	(337) 898-4308
Vernon	(337) 238-0815
Washington	(985) 839-0434
Webster	(318) 846-2454
West Baton Rouge	(225) 346-1577
West Carroll	(318) 428-8020
West Feliciana	(225) 635-6428
Winn	(318) 628-1160

9230.1 Port Authority/Harbor Master

Baton Rouge	(225) 342-1660
New Orleans	(504) 522-2551
Plaquemines	(504) 682-5660
Port of South Louisiana	(985) 652-9278

9230.1.1 Port Services/Pilots

New Orleans Board of Trade	(504) 529-4601
Marine Exchange	(504) 528-7870
Port Chaplain	(504) 891-6677
Pilots Bar	(504) 831-6615
Crescent River Port Pilots	(504) 392-8801
New Orleans- Baton Rouge Steamship Pilots Association (NOBRA)	(504) 832-1199
Associated Federal Pilots	(504) 456-0787

9230.2 Fire Departments

The Louisiana Office of State Fire Marshall Public Safety Services has maintains a Fire Department Directory. The Fire Department Directory can be found at http://sfm.dps.louisiana.gov/sfm_directory.htm.

9230.3 Law Enforcement

Acadia Parish Sheriff	(337) 788-8700
Assumption Parish Sheriff	(985) 369-7281
Iberia Parish Sheriff	(337) 369-3714

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lafayette Parish Sheriff	(337) 232-9211
Lafourche Parish Sheriff	(958) 449-4420
Saint Martin Parish Sheriff	(337) 394-3071
Saint Mary Parish Sheriff	(337) 828-1960
Terrebonne Parish Sheriff	(985) 876-2500
Vermilion Parish Sheriff	(337) 898-4409

9230.4 Emergency Medical Services

Galliano: Lady of the Sea

Emergency room capacity - 5 beds with 4 overflow beds in recovery room.

Emergency room 24 hour number (985) 632-8256

Emergency room decontamination capabilities for crude oil/oil products hospital utilize fire department HAZMAT team.

Helicopter landing- helicopter pad on ground level.

Houma: South LA Medical Center

Emergency room capacity- 25 patients

Emergency room number- (985) 873-1312

Emergency room decontamination capabilities for crude oil/oil products-limited.

Helicopter landing - helicopter landing on ground next to ER.

Houma: Terrebonne General

Emergency room capacity- 25 patients

Emergency room 24 hour number (985) 873-4151

Emergency room decontamination capabilities for crude oil/oil products patient.

Helicopter landing on roof.

Morgan City: Teche Regional Hospital

Emergency room capacity- 10 patients

Emergency room 24 hour number (985) 384-2200 or 380-4436

Emergency room decontamination capabilities for crude oil/oil products-2 patients.

Helicopter landing- helicopter pad located on top of the hospital.

Franklin: Franklin Foundation Hospital

Emergency room capacity - 5 patients

Emergency room 24 hour number (337) 828-0760

Emergency room decontamination capabilities for crude oil/oil products-2 patients.

Kaplan: Abrom Kaplan Memorial Hospital

Emergency room capacity - 6 patient rooms with 18 army cots and designated space for them in case of a disaster.

Emergency room 24 hour number (337) 643-8300

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Emergency room decontamination capabilities for crude oil/oil products- decontamination shower.
Helicopter landing- helicopter pad available 24 hours a day.

Abbeville: Abbeville General Hospital

Emergency room capacity- 7 room capacity normal, but can handle additional patients during emergency.
Emergency room 24 hour number (337) 893-5466 or (337) 893-5440
Emergency room decontamination capabilities for crude oil/oil products - decontamination shower.
Helicopter landing- helicopter pad able to handle larger (huey helicopter).

Raceland: St. Anne Hospital

Emergency room capacity - 6 persons
Emergency room 24 hour number: (985) 537-6841
Emergency room has no decontamination capabilities.
Helicopter landing - located on ground next to emergency room.

Thibodaux: Thibodaux General Hospital

Emergency room capacity - 15 persons
Emergency room 24 hour number: (985) 447-0746
Emergency room has no decontamination capabilities.
Helicopter landing - located on ground next to emergency room.

Name	Phone	Capabilities
East Jefferson General Hospital	(504) 454-4000	HAZMAT and Decon, Helipad
Ascension Hospital	(225) 621-1200	Helipad
Baton Rouge General Hospital	(225) 387-7000	HAZMAT and Decon Helipad
Our Lady of the Lake	(225) 765-6834	HAZMAT and Decon, Helipad, Hyperbaric
River West Hospital	(504) 687-9222	HAZMAT and Decon, Helipad
West Jefferson Medical Center	(504) 347-5511	HAZMAT and Decon, Helipad
OCHSNER Medical Center	(800) 231-5257	HAZMAT and Decon, Helipad
Tulane Medical Center	(504) 988-5800	HAZMAT and Decon, Helipad
University Medical Center (LSU)	(504) 903-3000	
St. Charles Hospital	(985) 785-6242	HAZMAT and Decon
St. James Parish Hospital	(225) 869-5512	HAZMAT and Decon, Helipad
River Parish Hospital	(985) 652-7000	HAZMAT and Decon, Heliport

Hyperbaric 9230.4.1 Chambers

Name	Phone	Capabilities
Jo Ellen Smith	(504) 363-7663	(1) Multiplace Chamber, (3) Monoplace Chambers
Ascension Hospital	(225) 621-1200	(2) Monoplace Chambers
Emergency Physicians' Center Marrero	(985) 796-0904	(4) Monoplace Chambers
Terrebonne General Medical Center	(985) 873-4141	(2) Monoplace Chambers
OSHNER Northshore Medical Center	(985) 649-7070	(2) Monoplace Chambers
Our Lady of the Lake	(225) 765-6834	(2) Multiplace Chambers

9230.4.2 Air Medical Services

Name	Phone
Air Med Services, L.L.C. (Acadian)	(800) 259-3333
Air Ambulance	(504) 522-3442

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Air Care West Jefferson Medical Center
Priority EMS Inc

(504) 347-5511
(504) 366-2992

9230.5 Hazardous Substance Response Teams

HAZMAT Unit Jefferson Parish

New Orleans Fire Department HAZMAT Unit

9230.6 Explosive Ordinance Detachments

New Orleans Police Bomb Squad

(504) 827-8505

Jefferson Parish Bomb Squad

(504) 364-5300

9240 Private Resources

9240.1 Oil Spill Response Organizations (OSRO) and Management Organizations

Contractor	City	State	COTP Zone	Day Phone
American Pollution Control (AMPOL)	New Iberia/ Harvey	LA	New Orleans	(800) 482-6765
Bertucci Industrial Services	Jefferson	LA	New Orleans	(800) 966-0303
Bisso Marine Company, INC	New Orleans	LA	New Orleans	(504) 866-6341
Bodin Oil Recovery Inc./ B&B Fire & Safety	Abbeville	LA	Lake Charles	(877) 660-3473
Clean Channel Association	Houston	TX	Houston/Galveston	(713) 534-6195
Clean Harbors Environmental	Baton Rouge/ Sulphur/ New Iberia	LA	New Orleans	(800) 645-8265
Coral Marine Services Inc	Morgan City	LA	Morgan City	(800) 640-0829
Diamond Services Corporation	Amelia/Morgan City	LA	Morgan City	(800) 879-1162
Eagle/SWS Construction & Environmental Services	Panama City	FL	Mobile	(850) 234-8428
Environmental Equipment Inc	Houma	LA	Morgan City	(888) 998-3100
Environmental Safety & Health Consulting Services Inc (ES&H)	Lafayette/ Belle Chasse/ Morgan City/ Houma/ Golden City/ Sulphur/ LaPlace/ Bossier City	LA	New Orleans/ Morgan City	(877) 437-2634
First Responder Inc	Thibodaux	LA	Morgan City	(800) 914-9111
Ferguson Harbor Inc	Pearl	MS	Mobile	(601) 936-6321
Garner Environmental (GES)	New Orleans/ Port Arthur/Houston	LA/TX	New Orleans/ Port Arthur/ Houston-Galveston	(800) 424-1716
Heritage Environmental Services LLC	Houston	TX	Houston-Galveston	(877) 436-8778
Industrial Cleanup Inc	Garyville	LA	New Orleans	(225) 673-6847
Jones Environmental Inc	Bossier City	LA	New Orleans	(985) 876-0420

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L&L Environmental Inc	Lake Charles	LA	Lake Charles	(337) 436-6385
Lawson Environmental Services LLC	Houma	LA	Morgan City	(985) 876-0420
Miller Environmental Services Inc	Sulphur	LA	Morgan City	(337) 882-9800
Marine Spill Response Corp. (MSRC)	Buras, Belle Chase, Morgan City, Leeville, Lake Charles, Golden Meadow, Venice, Harvey, New Orleans	LA	New Orleans/ Morgan City/ Lake Charles	(800) 645-7745
National Response Corp. (NRC)	New Orleans	LA	New Orleans	(800) 899-4672
O' Brien's Response Management Inc	Slidell	LA	New Orleans	(985) 781-0804
Oil Mop Environmental Solutions	Belle Chase/ Port Allen/ New Iberia/ Morgan City/ Houma/ St. Rose	LA	New Orleans/ Morgan City	(800) 645-6671
Petron Inc	Alexandria	LA	Morgan City	(800) 551-6678
Premier Industries	Harvey	LA	New Orleans	(504) 362-5440
Phillips Service Corp.	Reserve	LA	New Orleans	(985) 536-7612
The Shaw Group	Baton Rouge	LA	New Orleans	(800) 537-9540
SWS Environmental Services	Gonzales	LA	Morgan City	(877) 742-4215
TAS Environmental Services LP	Bossier City	LA	Lower Mississippi River	(888) 654-0111
T & T Marine Services	New Orleans	LA	New Orleans	(409) 744-1222
USA Environmental LA	Westlake	LA	Lake Charles	(337) 439-6700
U.S. Environmental Services	Meraux/ Venice/ Geismar/ New Orleans	LA	New Orleans	(888) 279-9930
Wild Well Control Inc	Spring	TX	Houston/ Galveston	(281) 353-5481
Wintex Construction	Port Arthur	TX	Port Arthur	(903) 342-3518
Worley Companies	Hammond	LA	New Orleans	(888) 887-2197

9240.2 Hazardous Substance Contractors

Contractor	Level	City	State	COTP Zone	Day Phone
American Pollution Control Inc	B	New Iberia	LA	New Orleans	(337) 365-7847
ES & H Environmental	A	LaPlace	LA	New Orleans	(888) 422-3622
L&L Environmental Inc	A	Metairie	LA	(New Orleans	(337) 436-6385
Oil Mop Environmental Solutions	Belle Chase/ Port Allen/ New Iberia/ Morgan City/ Houma/	LA	New Orleans/ Morgan City	(800) 645-6671	Oil Mop Environmental Solutions

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Phillips Service Corp.	St. Rose Reserve	LA	New Orleans	(985) 536-7612	Phillips Service Corp.
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9240.3 Media (Television, Radio, Newspaper)

Media contacts can be found in Appendix M, Joint Information Center Manual.

9240.4 Fire Fighting/Salvage Companies/Divers

Fire Fighting, Salvage, and Diving Companies can be found in the Southeast Louisiana Salvage and Marine Fire Fighting Plan.

9240.5 Wildlife Rescue Organization

A list of Wildlife Rescue Organizations located in Louisiana State can be found in Appendix H, Wildlife Response Plan.

9240.6 Volunteer Organizations

The Volunteer Plan can be found in Appendix L. The Volunteer plan contains Volunteer Organization contacts.

9240.7 Maritime Associations/Organizations/Cooperatives

American Waterways Operators	(504) 524-3366
Greater New Orleans Barge Fleeting Associations (GNOBFA)	(504) 737-6993
Steamship Association	(504) 522-9392
Clean Gulf Associates	(888) 242-2007

9240.8 Academic Institutions

Texas A&M Center for Marine Training and Safety (TEEX)

Louisiana State University
Tulane University
University of New Orleans
Delgado
Xavier

9300 Draft Incident Action Plan (IAP)

A draft IAP can be found at USCG Homeport: <https://homeport.uscg.mil/mycg/portal/ep/browse.do?channelId=-17668>.

9400 Area Planning Documentation

Area Planning Documentation, including spill and discharge history can be found in Appendix B, Planning Scenarios.

9500 List of Agreements

Memorandums of Agreement/Understanding (MOA/MOU) can be found in Appendix T.

9600 Conversions

Conversions can be found at www.conversiontables.info/.

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9700 List of Response References

A list of response references can be found in Appendix W, U.S. Coast Guard- Relevant Instructions, Guidelines, Procedures, and Practices List.

9800 Reserved

9900 Reserved for Area/District

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Appendix A
Southeast Louisiana
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Background

The Oil Pollution Act of 1990 directed that Area Committees be established to plan for community responses to oil discharges and hazardous substance releases. The Federal Register Notice (FR5 15002) dated April 24th, 1992, designated coastal zone areas for AC responsibility. Each Captain of the Port Zone is designated as an area where an Area Committee must be established.

Area Committee Responsibilities

Each Area Committee, under the direction of the Federal On-Scene Coordinator (FOSC), shall:

- Prepare the Area Contingency Plan for their area.
- Work with State and local officials to enhance the contingency planning of those officials and to assure preplanning of joint response efforts, including appropriate procedures for:
 - Mechanical recovery
 - Dispersal
 - Shoreline cleanup
 - Protection of sensitive environmental areas
 - Rehabilitation of fisheries and wildlife
 - Marine salvage and firefighting
- Work with State and local officials to expedite decisions for the use of dispersants and other mitigating substances and devices including burning agents.

The AC shall address the desirability of using appropriate dispersants, surface washing agents, surface collecting agents, and bioremediation agents or miscellaneous oil spill control agents listed in the National Contingency Plan Product.

Composition of Area Committees

The pre-designated FOSC will chair the Area Committee, and direct and coordinate the Area Committee's efforts.

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The FOSC is responsible for appointing government officials to serve as members of the Area Committee.

Southeast Louisiana Area Committee Member Agencies

U.S. Coast Guard	U.S. Environmental Protection Agency
Bureau of Safety and Environmental Enforcement	National Oceanic and Atmospheric Administration
U.S. Fish and Wildlife	
U.S. Army Corps of Engineers	Department of Interior

State Government

Louisiana Oil Spill Coordinators Office	Louisiana Department of Fisheries and Wildlife
Louisiana Department of Environmental Quality	Governor's Office of Homeland Security and Emergency Preparedness
Louisiana State Historical Preservation Officer	Louisiana Department of Natural Resources

Local Government

Vermilion Parish	Terrebonne Parish
Lafayette Parish	Lafourche Parish
Iberia Parish	Assumption Parish
Saint Martin Parish	Acadia Parish
Saint Mary Parish	

Industry and OSRO

Apache	AMPOL
BP	Clean Harbor

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Chevron	Airborne Support
Energy XXI	ES&H
Forest Oil	Hilcorp Energy
MSRC	O'Brien's
OMIES	National Response Corporation
Shell	TPIC
The Response Group	Lawson Environmental
USES	Equilon
LOOP	
El Paso	

Southeast Louisiana Area Committee Meetings

The Southeast Louisiana Area Committee meets at least once a year.

Southeast Louisiana Area Committee Subcommittees and Charters

Community Outreach Subcommittee

Subcommittee Meetings: The Subcommittee will meet 3 times yearly.

Mission Statement: Provide leadership in the development and implementation of a Southeast Louisiana Area Volunteer and Public Outreach policy to support responders at incidents and catastrophic events. Working cooperatively, we also intend to develop the next generation of outreach tools & methods for the best possible communication with the public.

Guidelines:

- The Subcommittee chair will forward proposed changes to the objectives to the Southeast Louisiana Area Committee for approval.
- The Chair is responsible for regular communication with the designated

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Southeast Louisiana Committee contact, including providing meeting minutes, updates and recommendations. Meetings will be held at least quarterly, prior to each AC meeting.

- The Subcommittee chair will assign a member to oversee and coordinate the completion of each action item and identify a due date. This information will be included on the Subcommittee progress report provided for each AC meeting.

Scope:

The demands of an incident may exceed the resources of responding government agencies. During such events, affiliated and unaffiliated volunteers can support response efforts in many ways, but the use of volunteers during an oil spill event is *not* automatic. The decision to employ volunteers will require analyzing the benefits of implementing them in a response versus safety and liability issues associated with their participation. In any stage of the incident, the UC may make the decision whether volunteers will be employed and the capacities in which they can serve.

Objectives:

When the UC approves the use of volunteers, the UC will have the option of:

- Establishing a Volunteer Coordinator in the Planning Section if interest is low.
- Assigning a Volunteer Unit Leader in the Planning Section if there is moderate interest, or;
- Expanding the Command Staff to include a Volunteer Officer VO.
- Assuring proper registration, tracking, and implementing of volunteers, according to UC guidance.
- Identifying necessary skills and establishing appropriate training opportunities.
- Coordinating use of volunteers with the Resource Unit Leader.
- Coordinating with the JIC to advise the general public of:
 - Need (if any) for volunteers.
 - Upcoming volunteer information sessions.
 - Volunteer registration sites and processes.
 - Limited roles volunteers may fill during the response.

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- Needed professions (i.e., healthcare, veterinary, etc.)
- Potential health risks to convergent volunteers (i.e., picking up oiled rocks and wildlife).
- Potential for volunteers to hinder response operations.
- Identifying and securing equipment, materials and supplies to support volunteer operations.
- Activating standby contractors for various training needs, as necessary.
- Activating pre-identified and pre-trained volunteers, as necessary.
- Coordinating with the Logistics Section Chief for volunteer housing and meal accommodations.
- Assisting volunteers with special needs, as possible.
- Maintaining Unit/Activity Log (ICS Form 214).

Incident Deliverables: During the preparation for the tactics meeting phase of the planning “P”, the Resource Unit Leader, Planning Section Chief, and Operations Section Chief will determine the specific roles, site locations, safety requirements and required number of volunteers needed in the applicable operational period from the VUL. Volunteers shall only be deployed through direct written tasking from the UC during the tactics meeting via the IAP process. The UC will supply logistical support to volunteers while operationally deployed (regardless of status or condition), engage in logistical support, and continue said relationship with volunteers regarding any issue resulting from volunteerism during a spill. Volunteers will not report directly to the Command Post for registration and training, but will be registered, trained and deployed from a pre-identified location.

Responders must be adequately trained in hazardous substance response and will operate within the level of their training, expertise, and capabilities as described in 29 Code of Federal Regulations, Part 1910.120.

Geographic Response Plan Subcommittee

Purpose: Provide a coordinated forum for the development and maintenance of Geographic Response Plan processes and products in the Southeast Louisiana area.

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Mission Statement: Mitigate harm to resources at risk due to releases of oil through the development, testing, and periodic update of tactical geographic response strategies, designed for implementation during the an oil spill.

Guidelines:

Flexibility is provided to the Subcommittee to modify the objectives to best accomplish the Charter's mission.

The Chair/Co-Chair is responsible for regular communication with the designated Steering Committee POC, including providing meeting minutes, updates, and recommendations in changes to the Southeast Louisiana Area Contingency Plan.

Objectives:

- Coordinate the development and maintenance of GRPs to ensure consistency of form and content and to promote efficient GRP distribution to the response community.
- Help to educate the spill response community and public on the purpose, limitations, and role of GRPs.
- Utilize available geographic information relative to the Endangered Species Act, the National Historic Preservation Act, and other State and Federal laws as appropriate in the development of the GRPs.
- Incorporate information from other Subcommittees into the development of the GRPs where available and as appropriate.
- Develop procedures for review/revision and field verification of existing GRPs as required to address changes in risks, targeted resources, and maintain current information on response resources.
- Encourage the continued development of inland GRPs.
- Evaluate lessons learned during actual incidents or exercises and take appropriate actions in the development or revision of GRPs.
- Incorporate identified economic resources into the GRPs consistent with the policies/guidance present in the National Response Framework and the Southeast Louisiana Area Contingency Plan.

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- Coordinate the review of sections of the Southeast Louisiana Area Contingency Plan pertaining to geographic response planning to address necessary changes (including Executive Committee approval where required) within the annual revision schedule.

Offshore Worst Case Discharge Subcommittee

Purpose: Provide a coordinated forum for the development and maintenance of offshore worst case discharge plan processes and products in the Southeast Louisiana Area Contingency Plan.

Mission Statement: Mitigate harm to resources at risk due to discharges of oil and release of hazardous materials through the development, testing, and periodic update of source control, containment and clean up strategies designed for implementation during a worst case discharge that affects the MSU Morgan City FOSC zone.

Guidelines:

Revise the MSU Morgan City ACP to consider all actions necessary to mitigate a WCD from offshore facilities.

Key references to accomplish this are oil spill response plans (OSRPs) that may include multiple WCD scenarios, including procedures for responding to and supporting operations for an uncontrolled well blowout lasting 30 days. Begin the review process by first reviewing OSRPs containing the largest WCD volumes.

No later than 15 December 2011, edit the appropriate section of the ACP to address subsea containment strategies, protection of sensitive areas, waste disposal planning, dispersant options, response equipment and personnel capacity.

Objectives:

- Review offshore OSRPs containing the largest WCD volumes. (Already complete - spreadsheet attached.)
- Edit the appropriate section of the ACP to address:
 - subsea containment strategies
 - waste disposal planning
 - dispersant options
 - response equipment and personnel capacity
- No later than 15 December 2011, provide to NOLA Sector Commander completed draft edits for the appropriate sections of the ACP.
- With Sector Commander concurrence, assist the incorporation of these changes into all Gulf of Mexico Area Plans (the One Gulf Plan) and the Regional Response Plan as appropriate.

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Response Science and Technology Subcommittee

Mission Statement: Provide overall leadership and technical assistance on improving the ability of responders to effectively use appropriate response technologies as oil spill response tools so that the environment and natural resources may be better protected.

Guidelines:

- The subcommittee Chair/Co-Chair will coordinate review and approval of proposed or modified response technologies by the RRT Chairs/Co-Chairs.
- The Chair/Co-Chair is responsible for providing meeting minutes, updates, and recommendations. Meetings will be held on a quarterly basis.
- The subcommittee Chair/Co-Chair will assign a member to oversee and coordinate the completion of each action item and identify a due date. This information will be included on the Subcommittee progress report provided for each RRT meeting

Subcommittee Charter Objectives:

- Recruit interested candidates with appropriate backgrounds to the response technologies subcommittee.
- Ensure response technology lessons learned during actual incidents and exercises are incorporated into contingency plans and regional training opportunities.
- Further the review of spill response tools in coordination with the RRT to help reduce environmental impacts.
- Facilitate the exchange of information on response equipment and response technologies within the regional response community.
- Support the standardization of response equipment terminology and encourage the testing and evaluation of new or innovative response equipment and technologies within the regional response community.

Marine Salvage and Firefighting

Purpose: Provide a coordinated forum for the development and maintenance of Marine Salvage and Firefighting plan processes and products in the Southeast Louisiana Area Contingency Plan.

Mission Statement:

Mitigate harm to resources at risk due to discharges of oil and release of hazardous materials through the development, testing, and periodic update of tactical geographic response strategies, designed for implementation during the an oil spill.

Guidelines:

Salvage and marine firefighting actions can save lives, property, and prevent the escalation of potential oil spills and hazardous material releases to worst case

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discharge scenarios. Flexibility is provided to the subcommittee to modify the objectives to best accomplish the Charter's mission.

Each subcommittee will have a point of contact (POC) from MSU Morgan City to assist in coordination between the subcommittee and the area committee.

The Chair/Co-Chair is responsible for regular communication with the designated MSU Morgan City POC, including providing meeting minutes, updates, and recommendations for changes to the Southeast Louisiana Area Contingency Plan.

Objectives:

- Review current draft to ensure that it meets the requirements of NVIC 2-10 and Title 33, Code of Federal Regulations, Part 155, Subpart I – Salvage and Marine Firefighting.
- Update resource list and contact information to ensure currency.
- Ensure that the plan is position and title specific.
- Work with stakeholders to identify a realistic exercise of the plan to ensure compliance with the National Preparedness for Response Exercise Program (PREP) guidelines.

Training and Exercise

Purpose: Provide a coordinated forum for the development and maintenance of the Training and Exercise plan processes and products in the Southeast Louisiana Area Contingency Plan.

Mission Statement: Our mission is to ensure the highest state of readiness of the spill response community within our area of responsibility. We will strive to accomplish this by developing comprehensive and useful contingency plans, preparing the response community through training and exercises, developing coordination mechanisms to facilitate effective responses, and educating our stakeholders and the public.

Guidelines:

The subcommittee will function as an efficient organization for ensuring effective implementation of the plan in our Area. Our regulatory members and non-regulatory participants will include all stakeholders representing the federal, state, and local levels and the maritime, natural resource and academic communities.

This subcommittee will ensure that the responders will be adequately trained in oil and hazardous substance response and will operate within the level of their training, expertise, and capabilities as described in 29 Code of Federal Regulations, Part 1910.120.

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The Chair/Co-Chair is responsible for regular communication with the designated MSU Morgan City POC, including providing meeting minutes, updates, and recommendations in changes to the Southeast Louisiana Area Contingency Plan.

Objectives:

- Recruit interested parties to serve on the subcommittee.
- Nominate a chair person to head the training subcommittee.
- Ensure all responders are adequately trained on 29 Code of Federal Regulations, Part 1910.120 and are knowledgeable in all hazards associated with a response.
- Ensure all subcommittee members are informed of future training.
- Update resource list and contact information to ensure currency.
- Ensure that the plan is position and title specific.
- Work with stakeholders to identify a realistic exercise of the plan to ensure compliance with the National Preparedness for Response Exercise Program (PREP) guidelines.

Contents of the Southeast Louisiana Area Contingency

Plan The Southeast Louisiana Area Contingency Plan (SELA ACP) is organized in alignment with the Incident Command System, but also has enough flexibility built within to accommodate incident specific needs while maintaining standardization and consistency.

The Southeast Louisiana Area Contingency Plan is required to contain sufficient guidance to ensure activities directed by the FOSC are conducted in compliance with applicable statutes and regulations. The Southeast Louisiana Area Contingency Plan shall:

- Be implemented in conjunction with the National Contingency Plan.
- Be adequate to guide actions to remove a worst-case discharge, and mitigate or prevent a substantial threat of such a discharge.
- Describe the area covered by the plan, including the areas of special economic or environmental importance.

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- Describe the area covered by the plan, including the areas of special economic or environmental importance.
- Describe responsibilities of an owner or operator and Federal, state, and local agencies in removing, mitigating, or preventing a substantial threat of a discharge.
- List equipment available to an owner or operator and Federal, State, and local agencies.
- Describe the procedures to be followed for obtaining an expedited decision regarding the use of alternative response technologies, i.e. dispersants.

Southeast Louisiana Area Contingency Plan Revision Schedule

The Southeast Louisiana Area Contingency Plan is on a triennial plan review cycle. The Southeast Louisiana Area Contingency Plan shall be verified per Code of Federal Regulation Title 40 Part 300.210.

Participation in the National Preparedness for Response Exercise Program (PREP)

The Southeast Louisiana Area Committee is required to follow the PREP guidelines.

This section represents the **minimum** guidelines for ensuring adequate response preparedness of the Southeast Louisiana Area Committee and the Southeast Louisiana Area Contingency Plan. If the Southeast Louisiana Area Committee believes additional exercises or an expansion of the PREP exercises are warranted to ensure enhanced preparedness, they are **highly encouraged** to conduct these exercises.

The PREP exercises should be viewed as an opportunity for continuous improvement of the Southeast Louisiana Area Contingency Plan and the area response system. The Southeast Louisiana Area Committee is responsible for addressing any issue that arise from evaluation of the exercises and for making changes to the Southeast Louisiana Area Contingency Plan as necessary to ensure the highest level of preparedness.

Southeast Louisiana Area Contingency Plan Exercises

Notification Exercise

Frequency: Quarterly

Initiating Authority: FOSC

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Participating Elements: Key elements of the unified command (appropriate federal, state, and government agencies).

Scope: Exercise and test communication between the FOSC and key elements of the unified command.

Objectives: Ensure that the key elements of the unified command know whom to call in the event of a discharge or release within the area.

Certification: Self-certification

Verification: Verification to be conducted by USCG Eighth District or the Region VI Regional Response Team (RRT).

Record retention: 3 Years (USCG), 5 Years (EPA)

Evaluation: Southeast Louisiana Area Committee

Credit: The Southeast Louisiana Area Committee should take credit for this exercise when conducted in conjunction with another exercise or for an actual event when all exercise objectives are met, the exercise/response is evaluated, and a proper record is generated.

Spill Management Tabletop Exercise

Frequency: Annually

Initiating authority: USCG Eighth District or Region VI RRT

Participating elements: Area spill management team (USCG and Louisiana state response team(s))

Scope: Exercise the spill management team's organization, communication, and decision-making in managing a spill response.

Objectives: Exercise the spill management team in a review of:

- Knowledge of the Southeast Louisiana Area Contingency Plan,
- Proper notification,
- Communication systems,
- Ability to access response equipment,

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- Coordination of organization of agency personnel with responsibility for spill response,
- Ability to effectively coordinate spill response activity with the National Response Framework infrastructure,
- Ability to access information in the Southeast Louisiana Area Contingency Plan for location of sensitive areas, resources available within the area, unique conditions of the area, etc, and
- Exercise the response management system identified in the Southeast Louisiana Area Contingency Plan, and to the maximum extent possible, the unified command.

At least one spill management tabletop exercise in a triennial cycle should involve simulation of a worst-case discharge scenario.

Certification: Self-certification

Verification: Verification to be conducted by USCG Eighth District or the Region VI Regional Response Team (RRT).

Record retention: 3 Years (USCG), 5 Years (EPA)

Evaluation: Southeast Louisiana Area Committee

Credit: The Southeast Louisiana Area Committee should take credit for this exercise when conducted in conjunction with another exercise or for an actual event when all exercise objectives are met, the exercise/response is evaluated, and a proper record is generated.

Equipment Deployment Exercises

Frequency: Annually

Initiating authority: USCG Eighth District or Region VI RRT

Participating elements: Local area response community (appropriate federal, state, and local agencies)

Scope: Deploy and operate response equipment. The equipment must be in a quantity that would be necessary to respond to an average most probable discharge.

All response personnel must be included in a comprehensive training program, and all response equipment in a comprehensive maintenance program. Credit should be taken for deployment of equipment during training. The maintenance program must ensure

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that the equipment is periodically inspected and maintained in good operating condition in accordance with the manufacturer's recommendations and best commercial practices.

Objectives: Demonstrate the ability of the response personnel to deploy and operate the equipment. Ensure the equipment is in proper working order.

Certification: Self-certification

Verification: Verification to be conducted by USCG Eighth District or the Region VI Regional Response Team (RRT).

Record retention: 3 Years (USCG), 5 Years (EPA)

Evaluation: Southeast Louisiana Area Committee

Credit: The Southeast Louisiana Area Committee should take credit for this exercise when conducted in conjunction with another exercise or for an actual event when all exercise objectives are met, the exercise/response is evaluated, and a proper record is generated.

Area Exercises Frequency: Quadrennially

Initiating authority: USCG, EPA, or industry

Participating elements: Appropriate Federal, state, and local government, and industry, and other members of the response community

Scope: Area exercises will exercise the area Response Community.

Objectives:

- Exercise the Southeast Louisiana Area Contingency Plan, along with select industry response plans.
- Exercise the response management system identified in the Southeast Louisiana Area Contingency Plan and, to the extent possible, the unified command with the appropriate participants.
- Exercise the area and industry spill management teams.
- Deploy adequate response equipment for the exercise scenario. At a minimum, the scenario must involve exercise of Worst Case discharge capability.

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Format: The total annual exercise schedule would consist of the following-

- 6 government-led exercises
- 14 industry –led exercises
- Total= 20 area exercises per year
- Area exercises should be approximately 8-12 hours in duration
- Exercise scenario shall be developed by the exercise design team.
- To simulate realism, the exercise should be conducted in the command post that would be utilized for a spill response, whenever possible.
- The exercise may be real or limited compressed time, and may start at any point during an incident, as determined by the Exercise Design Team. Flexibility should be allowed, to ensure the exercise objectives are met.
- Lessons learned from the exercise should be incorporated into the PREP Lessons Learned System (e.g. CGSAILS), whenever possible.

Certification: The FOSC will certify completion of the area exercise. In certifying the area exercise, the FOSC will consider the following:

- The area the exercise was conducted.
- The area exercise met the objectives outline in the PREP guidelines.
- The area response community was exercised for spill response preparedness.

Industry plan holders should take credit for all the exercises completed during the area exercise. These exercises shall be self-certified by the plan holder.

Verification: Verification will be done by the National Scheduling Coordinating Committee.

Record retention: 3 Years (USCG), 5 Years (EPA)

Evaluation: Joint evaluation team to be comprised of the federal government (USCG, EPA, PHMSA, BSEE).

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Scheduling: Scheduling of area exercises will be done by the National Strike Force Coordination Center, utilizing input from the FOSC, Area Committee, and RRT VI, in consultation with industry. A three year schedule of PREP area exercises will be published in the federal register as a public forum for government and industry input to the scheduling process.

ACP Comments/Corrections/Suggestions

If you have any questions regarding this document or find any errors, please notify one of the following agencies:

- U.S. Coast Guard MSU Morgan City Contingency Planning.
- Louisiana State Oil Spill Coordinators Office.

Comments/Corrections/Suggestions Form

Directions:

Fill in your name, address, agency, and phone number. Fill in the blanks regarding the location of information in the plan being commented on. Make Comments in space provided. Add extra sheets as necessary. Submit to:

Address: Commander
U.S. Coast Guard
MSU Morgan City
Response
800 David Drive
Morgan City, LA 70380

Email: brian.k.black@uscg.mil

Name: _____ Title: _____ Agency: _____

Address: _____

City: _____ State/Province: _____ Zip/Postal Code: _____

Phone: (____) _____ E-Mail: _____

Site: _____ Page: _____

Location on page (Chapter, section, paragraph) (e.g. 2.1, paragraph 3):

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Comments: _____

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Chapter 9000
Appendix B
Planning Scenarios

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Planning Scenarios

Introduction

This Appendix of the Southeast Louisiana Area Contingency Plan has been developed by the MSU Morgan City Federal On-Scene Coordinator (FOSC), in consultation with the Southeast Louisiana Area Committee, and is based on an assessment of all potential sources of discharges in this area meeting the provisions of 40 CFR Part 300.210(c) of the National Contingency Plan. The Area Contingency Plan is intended to be the fundamental element for building confidence that the plan addresses the necessary elements for planning a successful response within the area.

At a minimum, this Appendix will address the following area planning elements:

- Oil spill discharge and hazardous substance release history;
- A risk assessment of potential sources of discharges within the area;
- A description of planning assumptions describing a realistic assessment of the nature and size of possible threats and resources at risk;
- Planning scenarios that provide for a Worst Case Discharge (WCD), a Maximum Most Probable Discharge (MMPD), and an Average Most Probable Discharge (AMPD) from a vessel, offshore facility (outer continental shelf activity and near shore production fields), or onshore facility (fixed and mobile) in the area, as applicable.

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Scenario Development

As required by the Oil Pollution Act of 1990, a most probable discharge, a maximum most probable discharge, and a worst case discharge are presented in this appendix of the Southeast Louisiana Area Contingency Plan. In addition, The Coast Guard requires inclusion of an offshore oil exploration/production WCD scenario be included in area contingency plans (Coast Guard General Message, Subject: Regional and Area Contingency Plan Preparedness for a Worst Case Discharge, COM COGARD Washington DC 112024Z Jan 11) where offshore continental shelf activity is present. The below definitions can be found in 33 CFR Parts 154 and 155, and 40 CFR Part 300.5, as appropriate.

Average Most Probable Discharge

The Coast Guard has determined Average Most Probable Discharge as the lesser of 50 barrels or 1% of a Worst Case Discharge for an offshore or onshore facility/pipeline/marine terminal, or the lesser of 50 barrels or 1% of cargo from a Tank Vessel during cargo transfer operations. This value was adopted for consistency with Federal Vessel and Facility Contingency Plans.

Maximum Most Probable Discharge

The Coast Guard has defined Maximum Most Probable Discharge as the lesser of 1,200 barrels or 10% of the volume of a Worst Case Discharge for an offshore facility or onshore facility/pipeline/marine terminal; 2,500 barrels of oil for a vessel with an oil cargo capacity equal to or greater than 25,000 barrels; or 10% of the vessel's oil cargo capacity for vessels with a capacity less than 25,000 barrels for Tank Vessels. These values were adopted for consistency with Federal Vessel and Facility Contingency Plans.

Worst Case Discharge

As defined by section 311(a) (24) of the Clean Water Act, the definition of a Worst Case Discharge in the case of a vessel is a discharge in adverse weather conditions of its entire cargo, and in the case of an offshore facility or onshore facility/pipeline/marine facility, the largest foreseeable discharge in adverse weather conditions. This definition has been adopted for consistency with Federal Vessel and Facility Contingency Plans.

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Risk Assessment

The possibility exists for a WCD to occur anywhere in the Southeast Louisiana Area (as defined in Chapter 1000, Section 1500) given the high volume of deep-draft vessels (tank and non-tank vessels), the prevalence of oil and gas support vessels, offshore facilities (drilling rigs), oil and petrochemical terminals, and tug/tank barge composites. In addition, the unpredictable and sudden severe weather during transitional seasons, river fog in the winter and afternoon thunderstorms during the summer increase the risk.

Offshore Facilities

There are over 150 Offshore Facilities in the MSU Morgan City's FOSC Zone, excluding those operating in the MSU Morgan City area of responsibility. These facilities are any structure, equipment, or device, other than a vessel, which is used for one or more of the following purposes: Exploring for, drilling for, producing, storing, handling, and transferring, processing, or transporting oil offshore. A Mobile Offshore Drilling Unit is classified as an offshore facility when engaged in drilling or downhole operations as defined in 30 CFR Part 254.6. Oil exploration/drilling presents the greatest potential volume oil spill. A possible WCD scenario is the uncontrolled release with unknown potential volume from a crippled Drilling Rig/uncontrolled wellhead for a period of over thirty days. A similar incident occurred in April 2010 with the explosion and Sinking of the MODU DEEPWATER HORIZON, creating an estimated 65,000 barrel a day discharge. The wellhead was capped almost three months after the initial incident, and total discharge has been estimated at 4.9 million barrels of crude oil.

The MSU Morgan City FOSC Zone also includes hundreds of nearshore oil production fields. Most of these were drilled by major oil companies decades ago and have been resold to smaller companies or abandoned. The infrastructure in these fields is often poorly documented and abandoned and provides a major source of oil spills.

Onshore Facilities/Pipelines/Marine Terminals

The MSU Morgan City FOSC Zone is home to over 60 fixed, including 6 major refineries, and 13 Mobile Onshore Facilities transferring oil and/or hazardous materials in bulk. Onshore fixed oil storage facilities present the greatest potential volume oil spill: a possible scenario of a WCD at an Onshore Facility is multiple tank failures during hurricane conditions. A similar incident occurred at Murphy Oil during Hurricane Katrina, discharging over 25,000 barrels of crude oil. Some of the common products handled at the largest of these facilities are:

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- Unleaded Gasoline
- Diesel Fuel
- Crude Oil
- #2 Fuel Oil
- #6 Oil.

Tank and Non-Tank Vessels

Over the last decade, the MSU Morgan City FOSC Zone has had an average of 6930 Non-Tank vessel and 2750 Tank Vessel arrivals each year. A WCD for a vessel is defined as loss of a vessel's entire cargo in adverse weather conditions. There is a significant volume of oil that is transported, stored, or consumed as fuel within in the MSU Morgan City area. The largest foreseeable vessel discharge could result from a collision between two vessels. Vessels account for approximately 80% of the Serious Marine Incidents in the MSU Morgan City FOSC Zone over the last 6 years.

Spill Activity Statistics

For this report, the USCG MISLE database and local unit records were analyzed for the MSU Morgan City FOSC Zone. Data extracted involved all potential sources of spills within the area. A data pool of 3,994 incidents was analyzed for a period of seven years based on current spill activity records. Mystery sheens were not included in this analysis.

Based on an analysis of this data, the most frequent product reported spilled in the navigable waters was Oil, Petroleum Based. The primary source was determined to be Off-Shore Facilities, accounting for almost 40% of reported incidents, and the average quantity discharged was determined to be approximately 50 gallons. Taken together, these products comprise most of the reported spills in the area.

Off-Shore Facilities were determined to be the primary source of spills during this evaluation period. However, spills from reporting sources tended to be small (minor) spills, which were punctuated by an occasional large (medium or WCD) spill. The primary source producing the largest volume discharged over the last five calendar years is On-shore Waterfront Facilities.

The most frequent volumes spilled were between 0.1 Gallons to 100 Gallons.

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Vulnerability Analysis

The MSU Morgan City FOSC Zone includes many areas that are considered vulnerable to the effects of an oil spill. The potential effects of the spill could affect human health, property, and the environment. Information taken from real world events and spill trajectories has shown that a WCD from any source could have a devastating effect on fish, wildlife, and sensitive environments in the area. The analysis shows that the following items could be vulnerable from the effects of a major oil spill in the area:

- Water intakes (drinking, cooling, or other)
- Businesses
- Residential areas
- Wetlands and other sensitive environments
- Fish and Wildlife
- Endangered flora and fauna
- Recreational areas
- Marine transportation system
- Utilities
- Other areas of economic importance (beaches, marinas)
- Unique habitats or historical sites

A WCD from a tank vessel or an offshore/onshore facility would most likely impact these vulnerable and sensitive environments, which are identified and described in Appendix S, Geographic Response Plans of the ACP. The strategies and tactics used to protect, recover, and mitigate the effects of a WCD are also addressed in the Geographic Response Plans.

Planning Assumptions

The probability of a WCD occurring in the area is low. However, vessel transits, navigational hazards, and the operational activities associated with transfer, handling, and storage of oil, along with the activities associated with offshore oil

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and gas exploration within the area provide high consequence situations for a WCD. Natural disasters such as tropical storms and other severe weather events increase the likelihood of a major spill occurring in the area.

The following assumptions are made for the WCD planning scenarios:

- The ability to respond to a WCD will be beyond the ability of the Southeast Louisiana Area Committee, the Local Community, and local spill response resources.
- A Unified Command will be established as soon as possible.
- Responders will be adequately trained in oil/hazardous substance response and will operate within the level of their training, expertise, and capabilities as described in 29 CFR Part 1910.120.
- The applicable Facility/Vessel/Pipeline/Off-Shore response plan will be implemented.
- A WCD scenario will draw major media and governmental interest.

Meteorological Conditions

The Gulf of Mexico is influenced by a maritime subtropical climate controlled primarily by the clockwise circulation around the semi permanent area of high barometric pressure commonly known as the Bermuda High. The Gulf of Mexico is located to the southwest of this center of circulation. This proximity to the high pressure system results in predominantly east to southeasterly flow in the region. Two important classes of cyclonic storms are occasionally superimposed on this circulation pattern. During the winter months, December through March, cold fronts associated with cold continental air masses influence mainly the northern coastal areas of the Gulf of Mexico. Behind the fronts, strong north winds bring drier air into the region. Tropical cyclones may develop or migrate into the Gulf of Mexico during the warmer months. These storms may affect any area of the Gulf of Mexico and substantially alter the local wind circulation around them. In coastal areas, the sea breeze effect may become the primary circulation feature during the summer months of May and October. In general, however, the subtropical maritime climate is the dominant feature in driving all aspects of weather in this region; as a result the climate shows very little diurnal or seasonal variation.

Tropical cyclones (hurricanes and tropical storms) are severe but infrequent, with the season extending from June 1 through November 30. Extra-tropical cyclones (low-pressure systems) occur frequently during winter and spring and are likely to

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produce occasional rough conditions in the area during this time. Extreme weather conditions during an actual spill may inhibit aerial surveillance of a slick and oil recovery operations.

Planning Scenarios

Given the applicable conditions described above, the WCD, MMPD, and AMPD volumes from all potential sources is calculated and listed in the table below. The MMPD and the AMPD scenario volume is calculated based on a fixed number established for an offshore facility, an onshore facility/pipeline/marine terminal, or a percentage of the WCD rate from each potential source. For tank and non-tank vessels, the MMPD and the AMPD scenario volume is calculated based on a fixed number, a percentage of the cargo capacity, or the cargo transfer rate.

Therefore, the MMPD and the AMPD spill volumes from an offshore facility or onshore facility/pipeline/marine terminal is calculated as:

- 1,200 barrels or 10% of the WCD volume when calculating the MMPD.
- 50 barrels or 1% of the WCD volume when calculating the AMPD.

The MMPD and the AMPD spill volume from a tank/non-tank vessel is calculated as:

- 2500 barrels with a cargo capacity greater than or equal to 25,000 barrels, or 10% of the cargo capacity when calculating the MMPD.
- The lesser of 50 barrels or 1% of cargo from the vessel during cargo transfer operations when calculating the AMPD.

Offshore Facility WCD Scenario

Offshore Scenario

Although there are numerous offshore facilities operating within the MSU Morgan City FOSC Zone, the Shell drilling operations at Mississippi Canyon Block 807 was selected as the Offshore WCD even though the facility operates in the Morgan City FOSC Zone. MC807 is located about 75 miles south of Venice, Louisiana in the Gulf of Mexico. The following information regarding a WCD from MC 807 has been taken from the Shell Gulf of Mexico Regional Oil Spill Response Plan

MC 807 Drilling Operations	Calculations (BBLS)
First 24 Hours =	~ 465,000 bbls
30 Day Average (per day) = (estimated blowout rate from the exploratory well calculated with Prosper computer model)	~365,000 bbls

*There is often a very significant change in rate as time proceeds which is illustrated by the differences between 24-hour, 30-day average and volume calculated until a well is killed in a potential blow out. Especially at the very high rates that can be calculated in the Deepwater Gulf of Mexico, several reservoir phenomena combine to create this behavior. At very short times, e.g. during the first 24 hours, the pressure profile in the reservoir changes from the moment when a well first starts flowing to a less abrupt pressure profile with time. As a result, the rate declines. At somewhat longer time scales, effects such as reservoir voidage and the impact of geological boundaries can cause the rate to drop continuously. These phenomena are often not as apparent at these same time scales in production wells since those rates are much lower and other mechanical factors, such as choke setting, can serve to reduce or even eliminate these effects. Simulation and material balance models can include these effects and form the basis of the BOEMRE Notice to Lessees No.2010-N06 estimated for 24 hour and 30 day rates as well as maximum duration volumes.

Applied Science Associates (ASA) conducted a deepwater blowout simulation for The Response Group to better determine subsurface and surface evaporation and dispersion rates. Below is a table outlining the applicable evaporation and dispersion quantities:

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Mississippi Canyon Block 807		Calculations (BBLs)
i.	30 Day Average WCD =	~365,000 bbls
ii.	Subsurface dispersion- 25% (Water Depth + ~3,000)	- 91,000 bbls
iii.	REMAINING WCD AFTER SUBSURFACE DISPERSION	274,000 bbls
iv.	Surface dispersion and evaporation – 25%	- 68,000 bbls
TOTAL REMAINING		~ 206,000 bbls

The WCD volume of an estimated 365,000 bbls a day of crude oil poses a significant risk to MSU Morgan City FOSC Zone and the entire Gulf Region. Plaquemines Parish has been identified as the most probable/greatest threat of impact within the Gulf of Mexico in the event of a WCD from MC 807. Plaquemines Parish has a total area of 2,429 square miles, of which 845 square miles is land and 1,584 square miles is water. Plaquemines Parish includes two National Wildlife Refuges: Breton National Wildlife Refuge and Delta National Wildlife Refuge. This area is also a nesting ground for the brown pelican, an endangered species.

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Following this Worst Case Discharge Response are maps and status boards that outline equipment, personnel, materials, and support vessels as well as temporary storage equipment to be considered in order to cope with an initial spill of approximately 365,000 bbl a day. The list estimates individual times needed for procurement, load out, travel time to the site, and deployment.

The status boards outline the equipment that would be mobilized for a response with de-rated recovery capacity and response times. These resources would be used wherever adequate slick concentration is located, and weather permitting. Under adverse weather conditions, the primary MSRC and CGA equipment (major response vessels and skimmers) is still effective and safe in sea states of 6-8 ft. If sea conditions prohibit safe mechanical recovery efforts, then natural dispersion and airborne chemical dispersant application (visibility and wind conditions permitting) may be the only viable response option.

Shell has contracted with Marine Spill Response Corporation (MSRC), Clean Gulf Associates (CGA), and American Pollution Control Corporation (AMPOL) as primary OSROs.

Upon notification of the spill, Shell would request a partial or full mobilization of resources, including, but not limited to, dispersant aircraft and skimming vessels. The Qualified Individual, Person in Charge, Incident Commander, or designee may contact other service companies if the Unified Command deems such services necessary to the response effort.

Tables below outline equipment as well as temporary storage equipment to be considered in order to cope with an initial spill of approximately 365,000 bbls/day. The list estimates individual times needed for procurement, load out, and travel time to the site and deployment.

Upon notification of a release and mobilization of the response, either a fixed-wing aircraft or helicopter would be dispatched as promptly as possible (considering available daylight hours, weather conditions and other safety factors) to conduct visual surveillance at the spill source. If necessary and safe the surveillance could be supplemented through use of vessels as well. The effectiveness of many response technologies (such as in-situ burning, dispersant application, and mechanical recovery) should be enhanced through collaboration with air-based spotters, who can guide these systems to the oil concentrations and coordinate simultaneous operations (SIMOPS). Air-based spotters should be equipped with air to marine/ground communication equipment to facilitate communications with marine- and land-based response assets. Vessel locations should also be monitored in real-time using vessel-tracking technologies (such as

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Automated Identification System (AIS), GPS-based tracking, cell phone data, etc.), which can facilitate vessels being deployed for optimal recovery.

Offshore Response

In the event of a WCD from Shell's MC 807 facility, offshore response strategies will include attempting to skim free floating oil utilizing available OSRO Oil Spill Response Vessels (OSRVs), Oil Spill Response Barges (OSRBs), Vessels of Opportunity (VOO), and Quick Strike OSRVs, which have a combined de-rated recovery rate of approximately 478,000 bbls/day. Temporary storage associated with the identified skimming and temporary storage equipment equals approximately 480,000 bbls. As with any spill, additional cascading response equipment would be mobilized to the site from various OSRO bases. An offshore response would consist of simultaneous operations of approved dispersant application, containment booming, mechanical recovery, and in-situ burning. In the event that an offshore response is necessary, the following strategies will be implemented:

- Mobilize capability to regain control of, and plug the well (e.g., <http://www.marinewellcontainment.com/>)
- Commence drilling relief well as a contingency
- Mobilize mechanical recovery resources, including vessels (both OSRVs and VOOs), barges, ocean booming, skimming equipment, and spotter/surveillance aircraft. Begin deploying mechanical recovery resources as close to the source as possible to contain and collect concentrated oil in a timely and effective manner. Radio communication will be established between spotter aircraft and other surveillance systems (including AIS) with skimming vessels and barges to direct vessels to locations of concentrated oil to ensure maximum effectiveness and efficiency of mechanical recovery equipment.
- Mobilize dispersant resources to approved locations for both aerial and boat application, in areas where oil cannot be mechanically recovered. Subsea dispersant application equipment may be mobilized at the discretion of the RRT, and requires approval from the RRT. Because large quantities of dispersants will likely be applied on the surface as well, RRT approval should be sought early in the response for ongoing use of dispersants.

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- Mobilize in-situ burn resources outside the vicinity of the source to collect and burn oil in heavily concentrated locations. Fire boom will be deployed in a U-configuration.
- Mobilize offshore vessels equipped with remote sensing technologies (radar, infrared camera) to aid in night time operations and slick tracking. Remote sensing technologies assist skimming vessels in identifying thick areas of oil to enhance encounter rate.
- Maintain an effective and well coordinated response effort to control the source of the discharge, which may involve drilling a relief well, up to the point when the Federal On-Scene Coordinator determines the response effort complete.

Mechanical Cleanup Methods

Mechanical oil spill response uses physical barriers (boom) and mechanical devices (skimmers) to redirect and remove oil from the surface of the water. Offshore response strategies will include attempting to skim utilizing the LOUISIANA RESPONDER, MISSISSIPPI RESPONDER, CGA 200 HOSS Barge, and GULF COAST RESPONDER OSRVs, two AMPOL Response Vessels, and multiple skimming packages with a total de-rated skimming capacity of approximately 478,000 bbls. Temporary storage associated with the identified skimming and temporary storage equipment equals approximately 480,000 bbls. ***SAFETY IS FIRST PRIORITY. AIR MONITORING WILL BE PUT IN PLACE AND OPERATIONS DECLARED SAFE PRIOR TO ANY CONTAINMENT/ SKIMMING ATTEMPTS.***

- Skimming systems will deploy boom in a variety of different configurations. Generally, boom will be deployed in a J-configuration in a single skimming unit, which requires only one assist vessel to attend the boom. These single skimming units will locate heavily concentrated oil, with assistance from spotters and remote sensing technologies, to enhance encounter rate and effectively recover the oil. Boom will be deployed in a U-configuration when skimming vessels or barges have access to two assist vessels. This configuration maximizes the swath width and containment capacity. Boom may be deployed in a U-configuration with an open apex to funnel oil to awaiting skimming vessels.
- VOOs equipped with skimming systems will be deployed to locations with recoverable oil. For locations with light oil that cannot be recovered mechanically, VOOs will be equipped with sorbent materials to recover light oil

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- In order to increase encounter rate, slick containment systems will be directed to locations of heavily concentrated oil by spotter aircraft and vessels with remote sensing technology. Once the oil has been contained within the booms, the oil should be directed into the path of a skimming vessel. Boom also may be configured into a U-configuration with an open apex to funnel oil to awaiting skimming vessels.
- Oil that escapes the above assets and moves shoreward will be collected by VOOs that deploy sorbent boom, collection nets, or other types of equipment that absorbs surface oil. These assets will be deployed as task forces that can rapidly respond to light oil.

Operational Limitations of Response Equipment

MSRC OSRV	8 foot seas
VOSS System	4 foot seas
Expandi Boom	6 foot seas, 20 knot winds
Dispersants	Winds more than 25 knots Visibility less than 3 NM, or Ceiling less than 1,000 ft.

Dispersant Application

Depending on proximity to shore and water depth, dispersants may be a viable response option. ***Use of dispersant in non-preapproved areas will require approval by RRT VI prior to application.*** Because surface application of large quantities of dispersants is likely, RRT VI approval for ongoing dispersant application should be sought in pre-approved areas as well. However, RRT VI consultation should not delay initial surface dispersant use in pre-approved areas if appropriate. If appropriate, and approved, 4 to 5 sorties from three DC-3s will be made within the first 12 hour operating day of the response. Assuming a 1:20 application rate, 90% effectiveness, and 4 to 5 sorties per day, these aerial systems could disperse approximately 7,700 to 9,600 barrels of oil per day based on the NOAA Dispersant Planner. Additionally, there could be 3 to 4 sorties (318

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gallons per sortie) from a BE90 King Air and 3 to 4 sorties (3,250 gallons per sortie) from a Hercules C-130A within the first 12 hour operating day of the response. Using a 1:20 application rate, 90% effectiveness, and assuming 3-4 sorties per day, the systems could disperse approximately 4,600 to 6,100 barrels of oil per day based on the NOAA Dispersant Planner. For continuing dispersant operations the CCA's Aerial Dispersant Delivery System (ADDs) would be mobilized. The ADDs has a dispersant spray capability of 5,000 gallons per sortie.

Vessel dispersant application may be another available response option. If appropriate, vessel spray systems can be installed on offshore vessels of opportunity using inductor nozzles (installed on fire-water monitors), skid mounted systems, or purpose-built boom arm spray systems. Vessels can apply dispersant within the first 12-24 hours of the response and continually as directed. This is particularly effective in reducing VOCs in and around well containment operations on the surface.

Shell has contracted with Marine Well Containment Company for a subsea dispersant package. Subsea dispersant application has been found to be highly effective at reducing the amount of oil reaching the surface; However, approval is required from the appropriate Regional Response Team (RRT) prior to use. Additional data collection, laboratory tests and field tests will help in facilitating the optimal application rate and effectiveness numbers. For planning purposes, Shell assumes a 1:100 application rate, at 90% effectiveness (based on accepted industry dispersant effectiveness standards), and a system flow rate of 8-11 gallons per minute (approximately 11,500 to 16,000 gallons of dispersant per day). Using these assumptions, the system has the potential to disperse approximately 24,500 to 34,000 barrels of oil per day.

In-Situ Burning

Open-water in-situ burning (ISB) also may be used as a response strategy, depending on the circumstances of the release. ISB services may be provided by the primary OSRO contractors. ISB operations will not be conducted without the appropriate RRT approval. If appropriate conditions exist and approvals are granted, one or multiple ISB task forces could be deployed offshore. Task forces typically consist of two to four fire teams, each with two vessels capable of towing fire boom, guide boom or tow line with either a handheld or aerially-deployed oil ignition system. At least one support/safety boat would be present during active burning operations to provide logistics, safety and monitoring support. Depending upon a number of factors, up to 4 burns per 12-hour day could be completed per ISB fire team. Most fire boom systems can be used for approximately 8-12 burns before being replaced. Fire intensity and weather will be the main determining factors for actual burns per system. Although the actual amount of oil that will be

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removed per burn is dependent on many factors, recent data suggests that a typical burn might eliminate approximately 750 barrels. For planning purposes and based on the above assumptions, a single task force of four fire teams with the appropriate weather and safety conditions could complete four burns per day and remove up to ~12,000 bbls/day. In-situ burning nearshore and along shorelines may be a possible option based on several conditions and with appropriate approvals, as outlined in Section 19 of the Shell Gulf of Mexico Regional Oil Spill Response Plan, In-situ Burn Plan. In-situ burning along certain types of shorelines may be used to minimize physical damage where access is limited or if it is determined that mechanical/manual removal may cause a substantial negative impact on the environment. All safety considerations will be evaluated. Additional information on ISB is presented in Section 19 of the Shell Gulf of Mexico Regional Oil Spill Response Plan, In-situ Burn Plan. In addition, Shell will assess the situation and can make notification within 48 hours of the initial spill, to begin ramping up fire boom production through contracted OSRO(s) as discussed in Section 19 of the Shell Gulf of Mexico Regional Oil Spill Response Plan, In-situ Burn Plan. There are potential limitations that need to be assessed prior to ISB operations. Some limitations include atmospheric and sea conditions; oil weathering; air quality impacts; safety of response workers; and risk of secondary fires.

Source Control/Subsea Containment

The first source control response in a subsurface well blowout would be to activate the blowout preventers and close the well. Wild Well Control and Marine Well Containment Company (MWCC) would be notified in the event of a blowout. The first step is to determine if the blowout well can be capped and killed by bull-heading or circulating down existing tubulars. A pre-emptive relief well planning team would immediately be formed. The relief well team would locate and secure the appropriate rig(s) to conduct relief well operations, if needed. If the well cannot be capped, the relief well(s) operations would start as soon as possible. If the well can be capped but not killed, then using a snubbing or coil tubing unit for a circulating kill, drilling a relief well, or starting both operations simultaneously may be the next response options. Subsea containment resources would be mobilized in the event of an uncontrolled well blowout. Subsea containment incorporates simultaneous operations to cap or contain the flow of oil within the well, contain the oil outside of the well and collect at surface facilities or vessels and chemically disperse the oil at the well head. Refer to the Control and Containment status board for resources and response times.

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Nearshore and Shoreline Protection

If the spill went unabated, shoreline impact would depend upon existing environmental conditions. Nearshore response may include the deployment of shoreline boom on beach areas, or protection and sorbent boom on vegetated areas. Strategies would be based upon surveillance and real time trajectories provided by Shell contractors that depict areas of potential impact given actual sea and weather conditions. Strategies from the Southeast Louisiana Area Contingency Plans, The Response Group and Unified Command would be consulted to ensure that environmental and special resources would be correctly identified and prioritized to ensure optimal protection. The Response Group shoreline response guides depict the protection response modes applicable for oil spill clean-up operations. Each response mode is schematically represented to show optimum deployment and operation of the equipment in areas of environmental concern. Supervisory personnel have the option to modify the deployment and operation of equipment allowing a more effective response to site-specific circumstances.

Mechanical Cleanup Methods

Near shore mechanical recovery resources will be deployed to contain and collect oil prior to reaching the shoreline, minimizing the amount of oil that may impact the shoreline. In areas of shallow water, it may be possible to collect or corral the oil with ocean boom and take it to deeper water or low-current areas that have better skimmer access and higher recovery rates. Sorbent boom and snare boom may be utilized to recovery light sheens and more viscous oils. Sorbent boom is designed primarily to absorb oil, although it can act as a protective measure against thin oil sheens under very quiet water conditions. Snare boom (pom-poms tied onto a line) is effective as a sorbent of more viscous oils under higher wave and current conditions. In any current, sorbent boom can contain only the thinnest sheens. When used with conventional booms, sorbents can be placed outside of the boom to pick up small amounts of escaping oil, or inside the boom to absorb small amounts of contained oil.

Shoreline Protection

The Response Group shoreline response guides depict the protection response modes applicable for oil spill clean-up operations. Each response mode is schematically represented to show optimum deployment and operation of the equipment in areas of environmental concern. Supervisory personnel have the option to modify the deployment and operation of equipment allowing a more effective response to site-specific circumstances. Booming strategies will be implemented to exclude oil from impacting priority resources, and may be diverted to collection areas for recovery. The following are various types of boom that may be deployed to protect the shoreline:

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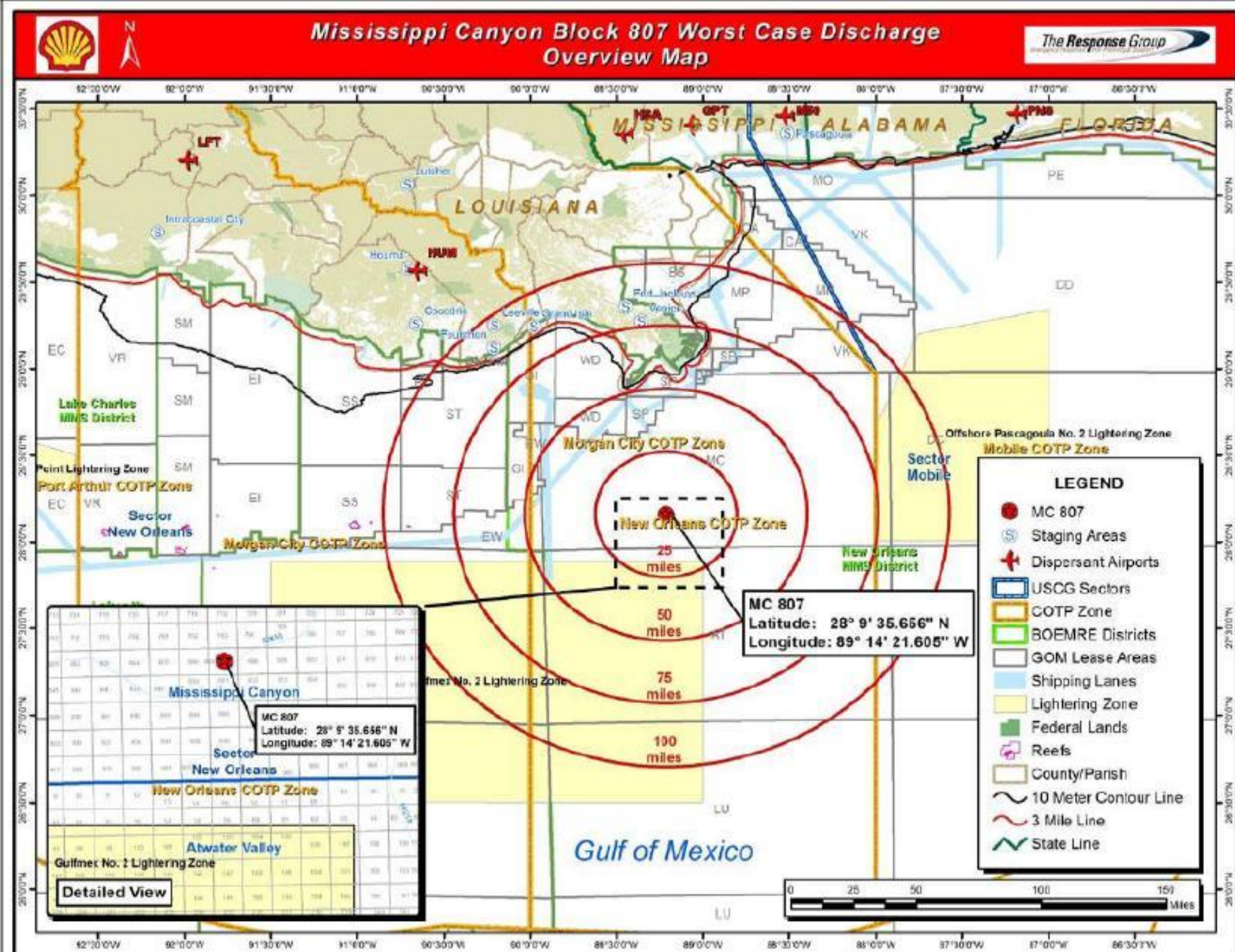
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- **Near Shore Boom:** When oil threatens impact shoreline or marshes, this medium size boom (~18") can be deployed to deflect or contain oil, or prevent impact to sensitive areas.
- **Bottom-seal Boom:** This boom is designed for deployment in very shallow water where traditional boom may foul on the bottom during low water levels. This boom's special features allow it to conform to the substrate, so that it can continue to act as a barrier to oil during changing tides or lower water levels. Bottom seal boom uses ballast tubes that are filled with water and actually lay on the bottom to provide a seal against oil passage. Shallow water boom is effective in higher-current areas because the shallow skirt minimizes the drag in the current
- **Inland Boom:** Inland boom is the smallest conventional boom and is designed for deployment in very shallow water; as the draft is only 6-12 inches. It is normally deployed in more protected waters where there is little to no wave action.

Wildlife Support

If wildlife is threatened due to a spill, MSRC and CGA have resources available for Shell, which can be utilized to protect and/or rehabilitate wildlife. Wildlife support resources are identified in the Shoreline Protection & Wildlife Support status board.

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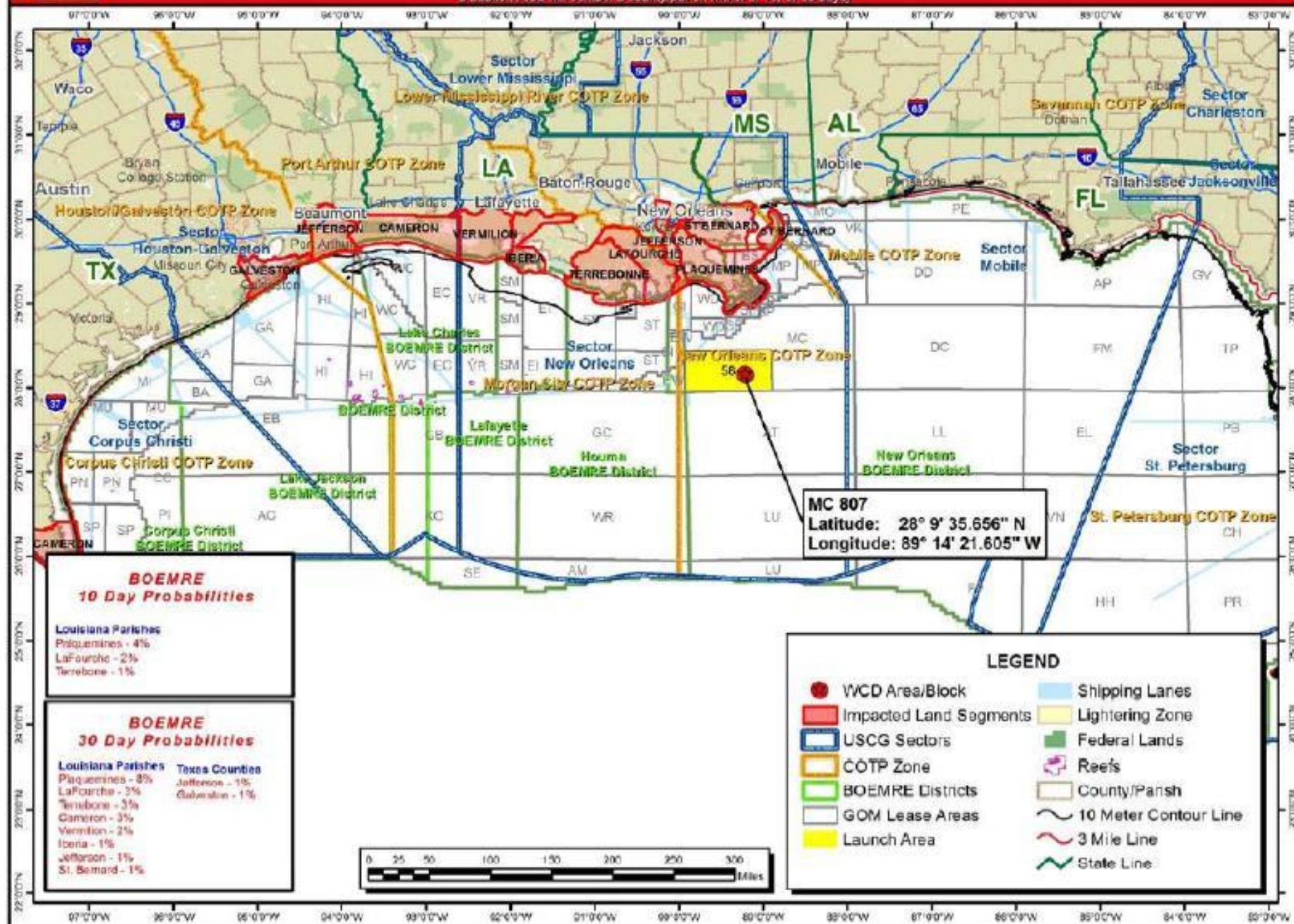


Mississippi Canyon Block 807 Worst Case Discharge

BOEMRE Launch Area #58 Probability Map

(Probabilities expressed as percent chance) that an oil spill started within a Launch Area will contact a county/parish within 3, 10, or 30 days

The Response Group



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Additional Support for a blowout lasting 120 days:

- Ocean Barge to transport recovered oil from offshore skimming systems and temporary storage barges to onshore disposal sites (identified in Area Contingency Plans and approved by the State)
- Additional OSRO personnel to relieve equipment operators
- Vessels for supporting offshore operations
- Field safety personnel
- Continued surveillance and monitoring of oil movement
- Helicopter, video cameras
- Infra red (night time spill tracking) capabilities
- Logistics needed to support equipment:
 - Parts trailers and mechanics to maintain skimmers and boom
 - Staging areas
 - Fueling facilities
 - Decontamination stations
 - Dispersant stockpile transported from Houston to Houma
 - Communications equipment and technicians
- Logistics needed to support responder personnel:
 - Food
 - Berthing
 - Additional clothing/safety supplies
 - Decontamination stations
 - Medical aid stations
 - Safety personnel

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Offshore Facility MMPD

Under development.

Offshore Facility AMPD Scenario

Under development.

Onshore Facility/Pipeline/Marine Terminal WCD Scenario

Of the onshore facilities handling oil and or hazardous substances in bulk in the MSU Morgan City FOSC Zone, Marathon Petroleum Garyville Refinery has the largest potential WCD, equaling 500,000 bbls.

Onshore Facility/Pipeline/Marine Terminal MMPD Scenario

Under development

Onshore Facility/Pipeline/Marine Terminal AMPD Scenario

Under development

Tank/Non-Tank Vessel WCD Scenario

Under development

Tank/Non-Tank Vessel MMPD Scenario

Under development

Tank/Non-Tank Vessel AMPD Scenario

Under development

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In-Situ Burn Policy

In-Situ Burning Introduction

This is the Southeast Louisiana Area Committee in-situ burn policy for coastal and applicable inland waters. It describes the established water zones for pre-authorized and conditional in-situ burning (ISB), protocols for conducting ISB operations, applicable to all burns throughout the MSU Morgan City boundaries.

The Southeast Louisiana Area Committee believes that this ISB Policy represents a conservative approach, and that institution of this policy will help to ensure a more rapid and effective response to oil spills within the Southeast Louisiana Area Committee area of responsibility. Questions, concerns, and recommendations relating to this policy may be addressed to the Chair or Co-Chair of the Response, Science, and Technology Subcommittee.

Purpose

This policy implements Subpart J of the National Oil and Hazardous Substances Contingency Plan (NCP) and provides pre-authorization for the use of ISB on oil spills by the predestinated FOSC on oil discharges impacting federal waters within the Southeast Louisiana Area Committee boundaries.

The Southeast Louisiana Area Committee recognizes that in some instances the physical collection and removal of oil is infeasible or inadequate, and the effective use of ISB as an oil spill response technique must be considered. Pre-authorization within the set guidelines of this policy allows the Unified Command (UC) to employ in-situ burning to: (1) prevent or substantially reduce a hazard to human life, (2) minimize the environmental impact of the spilled oil or, (3) reduce or eliminate economic or aesthetic losses which would otherwise presumably occur without the use of this technique.

Scope

The USCG, EPA, DOI, DOC, and the coastal states of RRT VI have adopted ISB as an approved tool to remove spilled or discharged oil from ocean and coastal waters within the jurisdiction of RRT VI. This policy covers protocols under which ISB is pre-authorized for use by the Unified Command within the boundaries of the Southeast Louisiana Area Committee. This document also contains decision-making guidance and procedures for the potential use of ISB on inland waters under the jurisdiction of the Southeast Louisiana Area Committee.

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In-Situ Burning Policy

The purpose of the policy is to define the conditions under which burning may occur on a pre-approved or case-by-case basis and to define conditions under which burning will not be allowed. The complete policy defines the procedure for arriving at the decision to burn or not to burn, describes the regulatory and statutory framework, and provides background information on logistics, environmental impacts, health and safety, and monitoring. The policy applies to all marine waters and inland areas covered by the Southeast Louisiana Area Contingency Plan.

It is the policy of the Southeast Louisiana Area Committee to use, and in certain cases encourage, ISB provided that requirements specified herein have been met. A primary consideration in the decision to burn is the protection and safety of human life. The authority to approve a burn rests with the Unified Command (UC), who must determine that an application to burn conforms to these guidelines. The decision to burn or not to burn must be made expeditiously.

Pre-approval areas are defined as those areas which are more than three miles from significant population centers. All other areas will be considered on a case-by-case basis. Monitoring and sampling will be conducted where there is potential for people to be exposed to the smoke. As general guidance, people should not be exposed to the smoke. As general guidance, people should not be exposed to small particles (PM-10) in concentrations that exceed 15 milligrams per cubic meter of air averaged over one hour. The concentrations should never exceed 15 milligrams per cubic meter averaged over 24 hours.

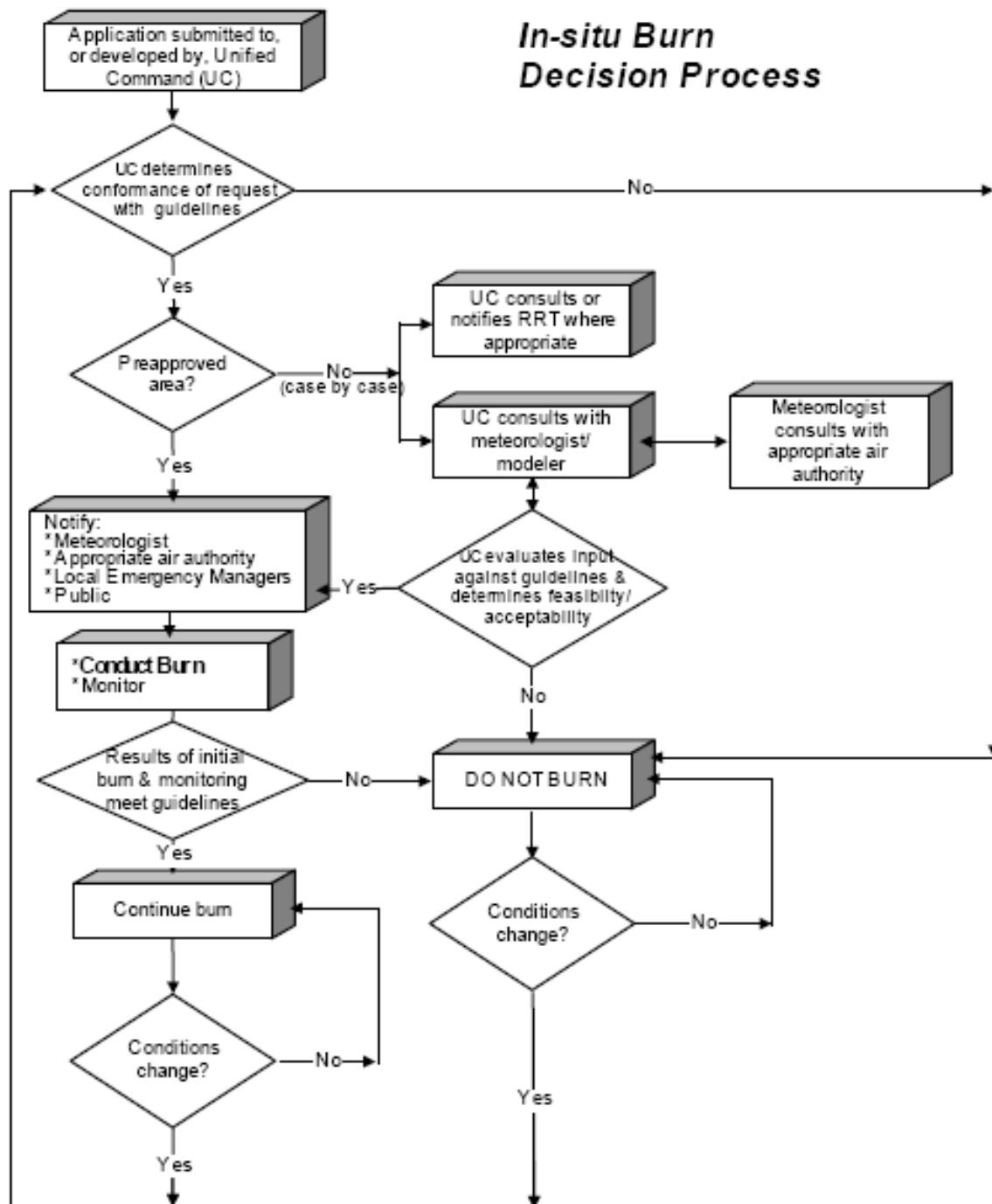
Authorization Procedures

These guidelines provide a common decision-making process to evaluate the appropriateness of using ISB during a response. The process is based on the premise that a rapid decision is essential if ISB is ever to be used since oil emulsifies (becomes mixed with water) and is more difficult to ignite as time goes on.

Under these guidelines, authorization to use ISB rests with the UC. The UC consists of federal, state, tribal, and local government and the responsible party on-scene coordinators, as appropriate. The UC, as part of the Incident Command System, is responsible for overseeing the entire response effort, which includes the decision to use ISB. The decision process is greatly expedited by the use of the UC structure, by establishment of a single application (see attached checklist and worksheet located after the decision process flowchart), and mutually agreed upon operational controls. The following figure summarizes the ISB decision process.

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In-Situ Burn Decision Process

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In-Situ Burning Application

The following checklist and worksheet are provided as a summary of important information to be considered by the UC in reviewing any request to conduct ISB in response to an oil spill in marine and in-land waters under the jurisdiction of the Southeast Louisiana Area Committee. The flowchart shown in the above figure summarizes the process for making a burn decision. The decision to burn must consider whether this tool will offer a greater level of efficiency in removing oil on the water and/or reducing oil impacts to sensitive resources. Next, the decision must evaluate whether it is practical, feasible, and safe to burn given the spill and conditions involved.

The application process begins with a simple preliminary feasibility analysis. If that analysis concludes that ISB may be feasible, the application checklist and window-of-opportunity worksheet shall be completed. The checklist is divided into several sections of information about the spill, weather, proposed burning plan, and potential impacts. When completed, the checklist and worksheet will identify the window-of-opportunity when ISB would be allowed based on environmental, public health, and operational constraints. Note that the checklist must be updated for each new burn scenario proposed. It is important to note that even if the checklist and worksheet fail to show that ISB is appropriate at one point in time (i.e., a “NO” answer), changes in environmental or other factors may make ISB a feasible option at a later time.

Authorization procedures will differ depending upon whether the spill location is in a pre-approval area or is decided on a case-by-case basis. Regardless of location, the UC directs actions that will provide for maximum environmental protection while ensuring human safety.

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Preliminary Feasibility Analysis for In-Situ Burn

1. Operational Feasibility	2. Public Safety Impact	3. Environmental Impact
A. Do the oil type, state, volume spilled and anticipated encounter rate indicate a window of opportunity for successful containment & burning? Yes <input type="checkbox"/> No <input type="checkbox"/>	A. Do prevailing and forecasted winds and atmospheric conditions indicate a window of acceptably low risk of possible heavy smoke exposure to populated areas? Yes <input type="checkbox"/> No <input type="checkbox"/>	A. Do natural resource managers concur that a successful in-situ burning operation will likely result in an acceptable impact to resources of concern? Yes <input type="checkbox"/> No <input type="checkbox"/>
B. Do prevailing and forecasted weather and sea conditions indicate a window of opportunity for successful containment & burning? Yes <input type="checkbox"/> No <input type="checkbox"/>	B. Will equipment and trained personnel be available to conduct air monitoring in at-risk populated areas if burning is attempted? Yes <input type="checkbox"/> No <input type="checkbox"/>	
C. Will equipment and trained personnel be available to conduct in-situ burning operations if an opportunity to use this tactic occurs? Yes <input type="checkbox"/> No <input type="checkbox"/>		
If the answer to all questions in section 1 is yes, this tactic may be operationally feasible. Consider mobilizing necessary resources and proceed to section 2.	If the answer to all questions in section 2 is yes, the risks to public safety may be acceptable. Consider mobilizing necessary resources and proceed to section 3.	If the answers to all questions in section 3 are yes, the environmental impacts may be acceptable. Consider mobilizing necessary resources and proceed with application.
If any of the answer in any of the above sections is no, approval of an in-situ burning application is unlikely <u>at this point of time</u> , unless conditions change. If the possibility of employing this tactic exists, consider mobilizing the necessary resources early in the response.		

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In-Situ Burn Application Checklist

Spill Data

Date of incident (month/date/year):_____ Time of incident:_____

Name of incident/responsible party:

Location of incident:_____ Latitude_____ N Longitude_____ W

Type(s) of oil spilled:

Estimated volume of oil spilled into water: _____

Estimated Volume of oil at risk of spilling: _____

Release status: Stopped___ Intermittent___ Continuous___ Outflow Rate___

Forecasted surface area of spill at time of projected burn:

Continuous slick___ Large patches___ Ribbon/streamers___

Will oil concentrations be sufficient to burn? Yes ___ No___

Is oil thickness sufficient to burn? Yes ___ No___

Anticipated oil trajectory (attach NOAA forecasts if available):

Forecasted oil distance/direction to nearest land at time of projected burn:

Expected areas and times of shoreline oil impact:

Estimated percentage of natural dispersion and evaporating during:

First 24 hours_____ Second 24 hours_____

Oil emulsification at this time: Unknown___ None___ Light (0-20%)___

Moderate (21-50%)___ Heavy (over 50%)___

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Distance (in statute miles) and direction to nearest population center (> 100 people per sq. mile): _____

Name of nearest population center: _____

Weather/Environmental Conditions at time of projected Burn

Temperature: Air: _____ F Water: _____ F

Wind Conditions: Speed _____ Direction (from) _____

Are prevailing and forecasted winds less than 25 knots? Yes _____ No _____

Tide state: Flood _____ Ebb _____ Slack Water _____

Sea State: Calm _____ Choppy _____ Swell (in feet) _____

Waves: Less than 1ft _____ 1-3ft _____ >3ft _____ Direction (from) _____

Other weather/sea condition information: _____

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Proposed Burning Plan Worksheet

Location of the proposed burn relative to the spill site:

Location of the proposed burn relative to nearest ignitable slick(s):

Location and direction of the proposed burn relative to nearest land:

Can accidental fires be avoided? Yes _____ No _____

If yes, what actions are planned? _____

Can ignition/burn occur at a safe distance from other response operations and public, recreational, and commercial activities? Yes _____ No _____

Method(s) used to notify residents living within the potential smoke plume trajectory:

Method(s) used to notify mariners and aircraft pilots:

Method(s) used to avoid impacts to marine life in vicinity of burn:

Type of ignition system proposed for use: _____

When will ignition system, fire-resistant boom, and deployment equipment/vessel be on-scene and available for use: _____

How will ignition be carried out? _____

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If a heli-torch ignition system is to be used, is the helicopter qualified for offshore flight and does it meet FAA certification requirements? Yes _____ No _____

Method used to collect/concentrate oil, if any: _____

Amount of fire boom available for use at time of proposed burn: _____ Ft
Number of boom-towing vessels and support vessels available: _____

Proposed location of oil containment relative to spill source: _____

Proposed burning strategy:

___ Immediate ignition at or near source

___ Ignition away from source after containment and movement to safe location

___ Controlled burning in boom or natural collection site at or near shore

___ Possible need for multiple ignition attempts

Are floating debris and other safety hazards acceptable: Yes _____ No _____

Are sufficient numbers of trained personnel available on-scene to conduct safe and effective burn: Yes _____ No _____

Estimated amount of oil to be burned: _____

Estimated duration of burn: _____

Method of collecting burned oil residue: _____

Estimated amount of burned oil residue to be collected: _____

Proposed interim storage and disposal of burned oil residue: _____

Back-up plan for collection contained oil if burn fails: _____

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Burn Impacts

Is adequate air modeling support available: Yes _____ No _____

Do prevailing conditions and air modeling results indicate that PM-10 standards can be met: Yes _____ No _____

Will visibility remain safe at sensitive locations (e.g., airports, freeways):

Yes _____ No _____

Are adequate air support and burn monitoring equipment on-scene and available:

Yes _____ No _____

How will operational impacts to wildlife in vicinity be monitored:

Name of Application Preparer: _____

Date/Time Submitted to Planning Section Chief: _____

Approval by Planning Section Chief: _____

Unified Command Decision:

_____ Approval to implement burn plan

_____ Approval to conduct small pilot burn

_____ Burn Plan disapproved at this time

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Window of Opportunity Worksheet

Spill Name: _____ **Spill Time and Date:** _____

This worksheet should be filled out in conjunction with the in-Situ Burning Application Checklist. Fill in top based on time of Incident (e.g., if Incident is at 0300, fill that in for hour 1; 0400 for hour 2, etc.) For each worksheet item, mark in each time segment where the items applies. The likely window-of-opportunity equates to those time segments where all items are marked.

Window of Opportunity				
Feasibility Factors	Hr. 1 Time	Hr. 2 Time	Hr. 3 Time	Hr. 4 Time
Operational Outlook				
1. Oil thickness \geq 2-3 mm				
2. Oil emulsion \leq 25-50%				
3. Wind Speed \leq 25 knots				
4. Wave height \leq 3-5 feet				
5. Visibility \geq 500 ft vertically & \geq 0.5 mile horizontally				
6. Trained personnel on-scene & ready				
7. Equipment on-scene & ready				
Planning Concerns				
8. Operation poses acceptably low risk to populated areas				
9. Burn poses acceptable risks to resource likely impacted				
Public Safety Concerns				
10. Public notification and controls addresses				
11. Air monitoring equipment & support are set up & ready				

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Pre-Approval

Once the UC determines that the application to burn conforms to the PM-10 standard, the UC should then determine if the spill location is in a “pre-approval area”. If a potential burn site is in a pre-approval area, then the meteorologist, appropriate air pollution control authority, local emergency manager, and the public are notified. Preparations will be made for monitoring the burn immediately following notification. (Note: Pre-approval refers to certain locations where burning is allowed with minimal steps to be taken to conduct the burn. Several prior procedures must still be undertaken, including application submittal and approval, notifications, and submission of an ISB Operations Plan.

Case-by-Case Approval

If the UC determines that the application conforms to the guidelines but is not in a pre-approval area, then approval to burn is considered on a case-by-case basis. The UC notifies the RRT. In cases where the RRT’s expertise is needed, the RRT will be consulted. At this stage, the UC consults with the meteorologist to obtain weather data and information on the potential concentrations of pollutants that may reach a populated area from both burned and unburned oil. The meteorologist consults with the appropriate air pollution control authority for more information. Data will also be obtained from a predictive smoke plume model whenever possible. Modeling information will not be relied upon exclusively but considered as a part of the information package. The UC then evaluates all available information and determines the feasibility and acceptability of in-situ burning based on these guidelines. If the decision is yes, then the same procedures apply as those for pre-approval areas. If the decision is no, then the burn will not be conducted. If conditions change, the application will be re-evaluated.

Not Allowed

If the application to burn is not in conformance with these guidelines, ISB operations will not be allowed. Conditions will be monitored in case there is a change which would make ISB appropriate and feasible. While no geographic areas have been excluded from the consideration to use ISB, it is very unlikely that it would be approved in a heavily populated area because of the increased potential for exposing people to high levels of particulates. However, even in highly populated areas, burning may still be approved in unique circumstances, especially when volatiles from the unburned oil pose a serious threat to human health.

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In-Situ Burning Oil Spill Response Checklist

1. Spill Data (to be completed by the Responsible Party and submitted to the FOSC)
 - a. Name of incident: _____
 - b. Date and time of incident: Month/Day/Year _____ Time_____
 - c. Incident: Grounding_____ Transfer Operations _____ Collision _____
Blowout _____ Pipeline Rupture _____ Explosion _____ Other _____
 - d. Did spill source ignite? Yes _____ No _____
Is the source still burning? Yes _____ No _____
 - e. Spill Location: Latitude _____ Longitude _____
 - f. Distance (in miles) and direction to nearest population _____
 - g. Product(s) released: _____
 - h. Product(s) easily emulsified? Yes _____ No _____ Uncertain_____
 - i. Product(s) already emulsified upon discharge? Yes _____ No_____ Light
emulsion (0-20%) _____ Moderate emulsion (21-50%) _____ Heavy
emulsion (> 51%) _____ Unknown _____
 - j. Estimated volume(s) of product discharged _____ gals/bbls
_____ gals/bbls
_____ gals/bbls
 - k. Estimated volume(s) of product that could still be discharged:
_____ gals _____ bbls _____
_____ gals _____ bbls _____
 - l. Discharge status: Continuous ____ Estimated rate _____
Intermittent ____ Estimated rate _____
One time only; discharge secured ____
 - m. Estimated area of spill:
Date/Time _____ Surface area_____ Sq. Miles (Stat ____ Natu ____)

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Date/Time _____ Surface area _____ Sq. Miles (Stat _____ Natu _____)
Date/Time _____ Surface area _____ Sq. Miles (Stat _____ Natu _____)

2. Weather and Water conditions at time & location of spill

(To be completed by responding party and submitted to FOSC)

- a. Temperature: Air _____ (deg. F) Water _____ (deg. F)
- b. Weather: Clear _____ Partly Cloudy _____ Heavy Overcast _____
Rain _____ (Heavy _____ Moderate _____ Light _____)
Fog _____ (type & amount at spill source _____)
(type & amount at burn site _____)
- c. Tidal conditions: Slack tide _____ Flood _____ Ebb _____
- d. Dominant Surface Current (net drift):
Speed _____ (knots)
Direction (t) _____ (true compass heading)
- e. Wind speed: Knots _____ Wind direction (from) _____
- f. Expected transition time between on-shore & off-shore breeze

- g. Sea state: Flat clam _____ Light wind-chop _____
Wind-waves: <1 ft _____ 1-3 ft _____ >3ft _____
Swell (est. height in ft) _____
- h. Water depth (in feet): _____
- i. Other considerations:
General visibility _____ Rip
Tides/eddies _____ Floating
Debris _____ Submerged
Hazards _____

Note: The NOAA Scientific Support Coordinator (SSC) shall be consulted for the weather and water conditions and predicted oil behavior.

The Responsible Party has the option of also submitting information on predicted oil behavior.

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3. Proposed burning plan (to be completed by the Responsible Party)
- a. Location of proposed burn with respect to spill source:

 - b. Location of proposed burn with respect to nearest ignitable oil slick(s):

 - c. Location of proposed burn with respect to nearest land:

 - d. Location of proposed burn with respect to commercial fishing activity, vessel traffic lanes, drilling rigs, and/or other marine activities/facilities:

 - e. Risk of accidental (secondary fires):

 - f. Risk of reducing visibility at nearby airstrip(s) or airports(s):

 - g. Distance to, location and type of nearest population center(s) (e.g., recreational site, town, city, etc.):

 - h. Methods that will be used (prior to ignition) to notify residents in areas where smoke could conceivably drift into or over such areas:

 - i. Type of igniter proposed for use:

 - j. Helicopter(s) needed to deploy igniters? No ____ Yes ____
Name of company and type of helicopter to be used:

 - k. FAA approval already granted to company for use of igniter:
Yes ____ No ____
Awaiting FAA Approval or verification of prior approval ____

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- l. Burning promoters or wicking agents proposed for use?
Yes ____ No ____
If yes, give type and amount: _____
- m. Describe proposed method of deployment for igniter(s):

- n. Burning promoter(s):

- o. Wicking agent(s):

- p. Describe method for oil containment, if any:

- q. Proposed location of oil containment relative to spill source:

- r. Proposed burning strategy:
____ Immediate ignition at or near source
____ Ignition away from source after containment and movement
to safe location
____ Ignition of uncontained slick(s) at a safe distance
____ Controlled burning in boe, or natural collection site at/near shore
____ Possible need for multiple ignition attempts
- s. Estimated amount of oil to be
burned: _____
- t. Estimated duration of each burn: _____
Total possible burn period: _____
- u. Estimated smoke plume trajectory:

- v. Method for collection burned oil residue:

- w. Proposed storage & disposal of burned oil residue:

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4. Weather and water condition forecast from time of spill (to be completed by NOAA SSC)

a. Wind speed (knots)

24- hour projection: _____

48- hour projection _____

b. Wind direction (from)

24- hour projection: _____

48- hour projection _____

c. Sea Conditions: _____

24-hour projection:

Flat calm ____ Light wind-chop ____ Wind-waves <1 ft ____

1-3 ft ____ >3 ft ____ Swell (est. height in ft) _____

48-hour projection:

Flat calm ____ Light wind-chop ____ Wind-waves <1 ft ____

1-3 ft ____ >3 ft ____ Swell (est. height in ft) _____

d. Tidal information:

Date _____ High (time/height) ____/____
Low

Date _____ High (time/height) ____/____
Low

Date _____ High (time/height) ____/____
Low

Date _____ High (time/height) ____/____
Low

e. Predicted dominant current (net drift):

Speed (knots) ____ Direction (to): ____

5. Predicted oil behavior (to be completed by NOAA SSC)

a. Unburned oil forecast: Estimated trajectory (attach sketch if necessary):

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b. Expected area(s) and time(s) of land fall:

Location _____ Date/time _____
Location _____ Date/time _____
Location _____ Date/time _____
Location _____ Date/time _____

c. Estimated percent naturally dispersed and evaporated:

Within first 12 hours: _____
Within first 24 hours: _____
Within first 48 hours: _____

6. Resources at risk (to be completed by Environmental Unit or resource agencies)

a. Biological Resources:

Are marine mammals, turtles, or concentrations of birds
noted in the burn area? Yes _____ No _____

If yes:

_____ Endangers/threatened species

_____ Non-endangered/threatened species

Comments _____

b. Historic and archaeological resources: _____

c. Commercial harvest areas: _____

7. FOSC evaluation of response options (to be completed by FOSC)

a. Is in-situ burning likely to result in the limitation of significant volumes of
spilled oil? Yes _____ No _____

b. Will the use of in-situ burning interfere with (or in any way reduce the
effectiveness of) mechanical recovery and/or dispersant application?
Yes _____ No _____

If yes, do the potential benefits of burning outweigh the potential
reductions in effectiveness of mechanical/dispersant use?

Yes _____ No _____

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- c. Can in-situ burning be used safely, and with an anticipated overall reduction in environmental impact (compared with the decision not to burn)?

8. FOSC's Decision regarding in-situ burning (to be completed by FOSC)

- a. _____ Do not conducted in-situ burn
- b. _____ In-situ burn may be conducted in limited or selected areas
- c. _____ In-situ burn may be conducted as requested

Note: If the FOSC approves in-situ burning, local media and residents in areas within the potential smoke plume trajectory must be notified prior to initiating the burn.

Signature of FOSC: _____

Printed name of FOSC: _____

Time and date of decision: _____

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Operational Requirements

The RP shall submit an ISB operations plan to coordinate operations, along with a safety plan for ISB operations to be conducted. This plan will allow for the safe controlled operations to be conducted during a response. This plan will also allow for safe controlled operations limiting the chances of exposure to toxic gases/or smoke for response personnel and the public. It also will address the protective measures used to limit response personnel to heat, flame, and/or flammable environments that may be encountered by personnel on-scene.

Response Organization

Burn Group Supervisor

The Burn Group Supervisor (ISB-BGS) provides the coordination link between all burn operations, the Operations Section, the Incident Commander/Unified Command. The ISB-BGS will ensure that Deflection, Burn and Reserve Asset task forces are coordinated during the operation. A Deputy may be established and will have all responsibilities and credentials of the ISB-BGS.

Task Force Leaders

Task Force Leaders will manage personnel associated with a task force and report to the ISB-BGS. Examples of Burn Group Task Forces are Burn Task Force, Deflection Boom Task Force, and Reserve/Supply Task Force.

Technical Specialists

Technical Advisers provide spotting, aerial surveillance, and field operations coordination.

Air Operations

Other than designated surveillance/spotter aircraft, no aircraft will be allowed in the immediate airspace with burning operations are active. Pilots of helicopters or fixed-wing aircraft used for aerial surveillance during the burn will brief the ISB-BGS on intended operations, and receive permission from the ISB-BGS before entering the airspace.

SMART as Part of the ICS Organization

SMART activities are directed by the Operations Section Chief in the Incident Command System. It is recommended that a "group" be formed in the Operations Section that directs the monitoring effort. The head of this group is the Monitoring Group Supervisor (ISB-MGS). Under each group there are monitoring teams. At a minimum, each monitoring team consists of two trained members: a monitor and assistant monitor. An additional team member could be used to assist with sampling and recording. The

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monitor serves as the team leader. The teams report to the ISB-MGS who directs and coordinates team operations, under the control of the Operations Section Chief.

Vessel Requirements

Burn Task Force

Vessels used in the Burn Task Force will meet the following criteria:

- Ability to tow at low speeds without loss of safe navigational ability.
- Accommodations that will support the vessel's crew and oversight crew for at least 48 hours without the need to return to port for fuel or supplies. This time requirement can be extended based upon incident needs.

Deflection Booming Task Force

Vessels used in the Deflection Booming Task Force will meet the following:

- Ability to tow at low speeds without loss of safe navigational ability.
- Accommodations that will support the vessel's crew and task force personnel for at least 48 hours without the need to return to port for fuel or supplies. This time requirement can be extended based upon incident needs.
- Deck space that will allow for storage of multiple pieces of equipment without the loss of safe work space on deck.

Reserve/Supply Task Force

Vessels used in the Reserve/Supply Task Force will meet the following:

- Have the ability to tow at low speeds without losing the ability to maneuver.
- Provide adequate accommodations that will support in-situ burn operations for a minimum of 48 hours of continuous sea operations at sea without returning port for fuel or supplies. This time requirement can be extended based upon incident needs.
- Provide adequate deck space for the storage of multiple pieces of equipment without the loss of safe work space on deck.
- Able to get underway immediately upon direction from the Burn Group Supervisor or applicable Task Force Leader

Primary Control Ship

The ISB Primary control ship, capable of providing a fire fighting and command platform shall meet the following criteria:

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- Have the ability to maintain station and provide fire fighting support should a fire fighting situation arise.
- Have an enhanced bridge with electronics capable of supporting vessels and extended ISB command and control.
- Provide adequate accommodations that will support ISB operations for a minimum of 48 hours of continuous sea operations at sea without returning to port for fuel or supplies. This time requirement can be extended based upon incident needs.
- Provide adequate deck space for the storage of multiple pieces of equipment without the loss of safe work space on deck.
- Able to get underway immediately upon direction from the ISB-BGS or applicable Task Force Leader.

Responsibilities of Vessels

Primary Control Ship

In charge of coordinating all on water assets and maintaining overall safety of the ISB operations.

Deflection Task Force

In charge of maintaining positions and condition of the deflection boom.

Burn Task Force

In charge of maintaining positions and condition of the fire boom. The Burn Task Force will also be the source of ignition of the ISB operations.

Reserve/Supply Task Force

Will maintain continuous readiness during burn operations and deliver supplies as needed.

In-Situ Burn Operations Plan

The RP shall submit an ISB Operations Plan. This plan will outline the concept of operations for conducting ISB sorties to minimize the potential for shoreline impacts from an incident in accordance with the Region VI ISB Plan and other guidelines (e.g., SMART).

Burn Control

In order to maintain organization throughout the response effort, the RP's ISB Operations plan will address the following:

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Burn Feasibility

This will first be assessed by the aerial observation. The aerial observer will ensure that the amount of collected oil can be ignited without causing radiant heat that may harm the personnel on the stern of the Burn Task Force vessels.

Once the above criteria are met, the aerial observer will then advise the Primary Control Ship as to the best burn area location. The Primary Control Ship will relay the location to the burn team and coordinate the secondary burn team to take the place of the departing team. The Primary Control Ship will stay at a safe location from the burn, but still monitor the burn operations with firefighting equipment on stand-by.

This process will be rotated throughout the operational period as long as favorable conditions remain. Burn operations will start at sunrise and continue until night fall. If a fire is burning prior to sunset, burning operations may continue until complete.

Igniters

A trained person shall deploy the igniter and follow safety recommendations of the manufacturer.

Pre-Ignition Checks

Once final approval for ISB operations to commence is given, all vessels in the Burn task force will ensure the following:

- All personnel on the Fire Boat Team will ensure they are in the proper PPE.
- Surrounding area is clear of vessel traffic not related to the ISB operations.
- Ensure emergency procedures are clearly established for all involved personnel.
- All firefighting appliances are in place and in good working order.

Decontamination Procedures

All booms retrieved at the end of the ISB operations will receive adequate decontamination to minimize contamination of vessel decks before being stowed for transit. Due to the nature of the operations, full decontamination of all booms will likely not take place until termination of ISB operations.

Once ISB operations have been terminated decontamination will take place using established procedures for general decontamination of equipment following manufacturer's recommendations in accordance with the incident's Incident Action Plan (IAP).

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Vessels involved with ISB operations will undergo adequate decontamination while on their return voyage to ensure that they do not bring contamination back to areas not previously affected by the incident.

Small boats will receive gross decontamination once stowed on board and will be fully decontaminated using procedures established by the IAP once operations are terminated.

Emergency Procedures

In case of a vessel casualty, the vessel will notify the Primary Control Ship of the nature of the casualty and the vessel will follow their established casualty procedures.

If a casualty should occur during towing operations, the affected vessel shall contact their partner vessel in the task force and cooperate to determine the safest actions needed to terminate the towing operations.

If a casualty affecting the steering or propulsion should occur during burning operations the task force will take the following actions:

- Vessel experiencing the casualty will maintain, as possible, course, and speed.
- Alert both Primary Control Ship and partner vessel as to the nature of the casualty.
- The affected vessel will continue to run the water cooling pump.
- The partner vessel will then release tow line and water cooling line.
- Once free from lines the partner vessel will then render aid by pulling along side of the disabled vessel and taking it in tow (depending on sea state) while maintaining a slow (1 to 2 knot) speed forward. Pumping of cooling water to the fire boom is maintained from the disabled vessel until the previously contained oil is released and extinguished.

Termination of Burn

The ISB-BGS should plan to allow a burn to complete once it has ignited. However, premature termination of a burn may be necessary if responder health is threatened due to a wind or weather shift, or a secondary ignition of another slick is a possibility. The fire may be extinguished prematurely by both towing vessels accelerating ahead at several knots (2-3 knots), forcing the oil beneath the boom, and removing it from the combustion zone. A secondary option is to release the towline from one of the towing vessels while the other moves ahead at 2-3 knots; this allows the oil to spread out quickly to a thinness that cannot support combustion. The RP's ISB Operations Plan should include more detail on terminating a burn.

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In-Situ Burning Operational Checklist

This list is provided as a condensed checklist of critical conditions, concepts, or pieces of equipment that will be considered by the Responsible Party, prior to the initiation of an in-situ burn in the MSU Morgan City Boundaries, as defined in Chapter 1000 of the Southeast Louisiana Area Contingency Plan.

Approval and Notification Considerations

_____ Approval “checklist” completed and submitted to FOSC/SOSC/RRT.

_____ Any other burn plan or permit/approval requests completed and submitted to appropriate agencies.

_____ All approvals received from federal, state, and local organizations.

_____ U.S. Coast Guard notified regarding Notice to Mariners for proposed burn time and location in which no unauthorized vessels would be allowed.

_____ FAA notified regarding Notice to Aviators for proposed burn time and locations in which no unauthorized aircraft would be allowed.

_____ Local public radio and television announcements of intent to burn, along with information on estimated times, duration of burn(s), potential affected areas, possible health effects, and unauthorized zones for public use. (Coordinated through JIC).

_____ State or local emergency service groups on standby for any possible assistance in notifying or evacuating certain populations.

Oil and Environmental Conditions:

_____ Oil type & conditions- sufficiently combustible under existing weather conditions.

_____ Visibility- suitable for vessels and aircraft in carrying out burn
Consideration given to number of daylight hours left to initiate burn.

_____ Sufficient time available to mobilize response personnel transport and deploy equipment to ignite and complete burn(s).

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- _____ Timing and conditions appropriate for consideration of night-time burn(s).
Possibility of night-time oil collection with burns initiated at daybreak.
- _____ Burning operations safe and practical in light of spill status (ignited versus non-ignited, proximity to shore mobile, or fixed structures, etc.).
- _____ Burning safe and practical in light of vessel traffic lanes.
- _____ Burning safe and practical in light of spill source stabilization efforts.
- _____ Burning safe and practical in light of any personnel evacuation efforts.
- _____ Burning compatible with mechanical cleanup operations.
- _____ Burning compatible with dispersant application techniques.
- _____ Burning compatible with shoreline protection and cleanup activities.

Personnel Requirements:

- _____ All personnel trained and qualified for burning operations.
- _____ All personnel briefed and familiar with burn plan.
- _____ Full response team(s) and supervisor(s) for vessels on location or en route.
- _____ Qualified Pilot and support personnel for aerial support functions on location or en route(e.g. reconnaissance, Heli-torch operations, etc.).
- _____ Backup Fire Control Team on location or en route.
- _____ Everyone has protective clothing, respirators, flotation devices, etc.

Vessel Requirements:

- _____ Two fire boom towing vessels available for each U-configuration.
- _____ One fire control vessel available for each burn region. More than one vessel possibly needed should individual burns be widely separated.
- _____ Backup support vessel(s) as needed for personnel transport; refueling, operations, recovery and storage of burn residue; transport, deployment and recovery of fire boom, boom towing vessels; etc.

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Aircraft Requirements:

- _____ Helicopter(s) as appropriate for number of burns anticipated, modes of ignition to be employed, and distances to be covered from staging area(s) to assigned region(s) of coverage.
- _____ Fixed- wing aircraft as appropriate to supplement helicopter operations involving oil reconnaissance mission, direction of vessels to collection sites, monitoring of smoke plume trajectories, etc.

Fire Boom and Igniter Requirements:

- _____ Inspected and ready-to-deploy fire containment boom (typically 500 ft to 1,000 ft per U configuration), along with long tow lines (typically 500 ft to 800 ft per tow vessel), towing bridles, and anchoring systems as appropriate.
- _____ Backup fire containment boom (500 ft to 1,000 ft per U configuration) along with additional lengths of boom for any modes of deployment (e.g., containment at spill source, deflection booming into designated near shore burns sites, exclusion booming, etc.)
- _____ Inspected and ready-to-deploy Heli-torch(es) as needed for any aerial ignition activities (backup drums available for rapid turn-around).
- _____ Batch mixers for gelling large quantities of fuel mix for Heli-torch(es) if necessary (backup fuel supplies such as Jet-A, gasoline, or crude oil, and gelling mix)
- _____ Supply of hand-held igniters at least 10 per vessel and helicopter) for potential use (backup supply of at least 200 igniters or a means of acquiring/constructing additional units on short notice).

Communications Requirements:

- _____ Dedicated radio links and equipment with specific frequencies for air-to-air and air-to-surface communications.
- _____ Dedicated radio links and equipment with specific frequencies for vessel-to-vessel and vessel-to-command communications.
- _____ Repeater stations as appropriate for distant or blocked communication paths.

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Fire Safety Considerations:

- _____ Possible use of dedicated personnel/vessels with vapor emission monitoring equipment (explosimeter).
- _____ Backup fire fighting vessels (if necessary) for unique situations involving a burning spill source and/or unusual potential exposures of personnel/vessel to burning oil.
- _____ Small fire fighting packages (extinguishers, monitors, foam, etc.) aboard the boom towing boats for backup use in the event of an emergency on or near one of the response vessels.

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Hazard Evaluation

Exposure Limits for Emissions

Since burning will almost always provide for the greatest degree of environmental protection, a key issue is for the UC to ensure that pollutants from ISB emissions do not have a significant adverse impact to human health. Airborne particulates are considered, by most experts, to be the main airborne health hazard associated with ISB emissions, particulates are small pieces of solid carbon or liquid hydrocarbon suspended in the air. Particulate matter is a by-product of incomplete combustion.

The primary pollutant concern is particulates less than 10 microns in diameter (PM-10). This is the small particulate matter contained in the smoke plume. PM-10 can reach the deep portion of the lungs. The median size of particulates in the smoke from oil fires is 0.5 microns posing a definite hazard to respiration.

It is generally accepted that other pollutants dissipate reaching background levels well before PM-10. An ISB smoke plume usually stays above ground level, hundreds of thousands of feet, but can reach the ground under certain atmospheric conditions. Studies show that the ground level concentrations of PM-10 nearby an ISB usually remain below safety levels (except for areas directly in the smoke plume). For most individuals, exposure to inert particulates becomes a problem only at high concentrations. However, some individuals may develop problems at levels much lower than that.

An exposure standard for PM-10 has been established for these guidelines. ISB operations will not be approved if there is a significant risk that the standard would be exceeded where people are located. Background levels will be taken into consideration when determining risk.

The standard incorporated a cap for PM-10 exposure not to exceed 15 milligrams per cubic meter (mg/m³) averaged over an 8-hour period. The UC should ensure that an approved burn is within this standard. The UC must also weigh the risk to people of the volatiles that evaporate from unburned oil. In some cases, it may be less harmful to people to burn the oil rather than let part of it evaporate.

Permissible Exposure Limits (PEL) for PM-10: For response personnel, the following exposure limits apply: OSHA permissible exposure limit (PEL): 15 milligrams per cubic meter (mg/m³) total particulate 8 hour mean, 5 mg/m³ respirable particulates (PM-10) 8 hour mean.

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A meteorologist, responsible for evaluating weather data and information in the area proposed for an in-situ burn, will incorporate this standard in assessing health risks.

Symptoms of Overexposure: Excessive PM-10 will burden the respiratory tract and cause breathing difficulties.

Type of Gas	Hazard Description	Exposure Limits	Symptoms of Overexposure
Particulate Matter < 10 microns (PM-10): Particulates less than 10 microns (millionths of a meter) in diameter can reach the deep portion of lungs (the critical gas exchange area) and become a burden on the respiratory system. Thus the air quality standards are expressed as a fraction of particulates smaller than 10 micron in diameter.	The median size of particulates in the smoke from oil fires is 0.5 microns, posing a definite hazard to respiration. Studies show that the ground level concentrations of PM-10 nearby in-situ burn events usually remain below safety levels (except for the area directly in the smoke plume). For most individuals, exposure to inert particulates becomes a problem only at high concentrations. However, some individuals may develop problems at levels much lower than that	OSHA PEL: 15 milligrams per cubic meter (mg/m ³) total particulate 8 hour mean. 5 mg/m ³ respirable particulates (PM-10) 8 hour mean	Excessive PM-10 will burden the respiratory tract and cause breathing difficulties
Polycyclic Aromatic Hydrocarbons (PAH): A group of hydrocarbons found in both unburned oil and the smoke plume. PAH's have very low vapor pressure, and most are not very flammable. In ISB PAH's adsorb to particulates. Studies show that concentrations in the smoke remain below exposure limits.	Some PAHs are suspected carcinogens over a long-term exposure: the target organs being the skin and lungs. The hazard is minimal in ISB events. Because of the high temperatures most PAHs are burned in the combustion process and the concentration is usually higher in the oil than in the smoke.	OSHA PEL: 0.2 ppm for 8 hours (for volatile PAH)	None. (Suspected carcinogen)
Carbon Dioxide (CO₂): Colorless, odorless gas produced by burning fossil fuels.	High levels CO ₂ may be detected at ground level.	OSHA PEL: 5000 ppm for 8 hours.	Headache, dizziness, restlessness, parasthesia, dyspnea, sweating, malaise,

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			increased heart rate, elevated blood pressure, coma, asphyxia, convulsions.
Sulfur Dioxide (SO₂): Colorless nonflammable poisonous gas with a pungent odor. The concentration emitted in a burn is directly related to the sulfur content of the oil.	Toxic gas and a corrosive irritant to eyes, skin, and mucous membranes by forming sulfuric acid on these moist surfaces. The gas may reach the deep portion of the lungs. Studies indicate SO ₂ emissions remain below exposure limits during ISB events.	OSHA PEL: 2 ppm for 8 hours NAAQS: 0.14 ppm for 24 hours	Irritation of eyes, skin, mucous membranes, and respiratory system.
Nitrogen Dioxide (NO₂): Toxic gaseous byproduct of oil combustion. It is normally a red-brown gas with an irritating order.	Extremely toxic to humans by inhalation. It is less soluble than sulfur dioxide. It can reach the deeper portions of the lungs. Small concentrations can cause pulmonary edema, which can be delayed. NO ₂ is also a strong irritant to eyes and respiratory and respiratory tract. Studies of ISB events have shown that concentrations of NO ₂ in smoke emissions remain below 0.02 ppm.	OSHA PEL: 1 ppm for 8 hours. NAAQS: 0.053 ppm for 24 hours	Irritation of eyes, skin, and mucous membranes
Carbon Monoxide (CO): Product of incomplete combustion of oils. It is a colorless, odorless gas that is toxic to humans.	The toxicity of CO is acute, it has a high affinity to hemoglobin in the blood, displacing oxygen and ultimately causing oxygen deprivation in the body's cells. The hazard of carbon monoxide from burn emissions is minimal. Data so far suggest that concentrations in oil fire smoke remain below exposure limits.	OSHA PEL: 35 PPM for 8 hours NAAQS: 9 ppm	Headache, nausea, dizziness, confusion, at high concentrations asphyxia and death.

Precautions

Using respirators and eye protection (i.e. full-face respirator P100 cartridge) suitable for protection from particulate matter will reduce exposure. The best precaution, however, is to avoid overexposure altogether. Vessels and personnel should be kept out of the smoke plume.

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Environmental Monitoring for Chemical Hazards

To ensure the health and safety of responders, the incident Site Safety Plan and/or the ISB Safety and Health plan must restrict all responders and response vessels from entering the smoke plume or from approaching the fire perimeter. Data analyzed from the Newfoundland Offshore Burn Experiment (NOBE) demonstrated that PM-10 levels were low upwind and outside of the smoke plume. Until further experience is gained, however, it is strongly recommended that the PM-10 levels be monitored for responder's health and safety. Even though data on other ISB gaseous emissions suggest that concentrations do not seem to pose a risk if responders and vessels remain at safe distances and upwind from the burn, concentrations of monoxide are high at ground levels close to the burn. If for some reason, a responder must move close-in to the burn, proper personnel protective equipment and monitoring must be administered. Monitoring equipment will be calibrated and maintained in accordance with the manufacturer's instructions (electronic equipment will be calibrated before each day's use).

Zones of potential hazardous substances may be encountered based upon wind and weather patterns. Projected extent and direction of plume of oil vapors prior to burn and smoke plume during the burn (along with other applicable hazards found during the site survey) will be noted (i.e., noted on incident maps)

Burn Hazards

Serious burn hazards exist in any ISB application. All potential hazards shall be identified and mitigated prior to ignition.

Although safe practices should eliminate the possibility of a responder getting burned during an ISB, contingencies for such a scenario must be identified. Depending on the severity of the burn, damage inflicted will vary from superficial reddening of the skin to extensive surface blistering and death of underlying tissue. However serious, the correct first aid treatment is to cover the burned surface with loosely applied, dry, sterile dressings. To reduce the dangers of infection, handling the burned area must be reduced to a minimum and any temptation to clean the burn resisted. All burns of more than a trivial nature shall be referred to the hospital.

Other Hazards

Heat Proximity

Exposure of personnel to uncomfortable or dangerous levels of heat can be minimized or eliminated with proper considerations for vessel placement during a burn. Vessels should come no closer than five fire diameters for any extended length of time.

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Heat Stress

In an ISB event, the combination of hot weather and flam radiation can pose potentially dangerous situations for response personnel. Certain safety problems are common to hot environments. Heat tends to promote accidents due to slippery palms, dizziness, lower mental alertness, or fogging of safety glasses. If the victim is conscious and able to drink fluids, provide caffeine-free, cold liquids, preferably water.

Heat Stroke

Heat stroke is a serious condition which occurs when the body's temperature regulatory system fails and sweating becomes inadequate. A heat stroke victim's skin is hot, usually dry, red, or spotted. Body temperature is usually 105 degrees or higher, and the victim may be mentally confused, delirious, or unconscious. Unless the victim receives quick and appropriate treatment, brain damage, and/or death can occur. Any person with signs or symptoms of heat stroke requires immediate hospitalization; however, first aid should be administered immediately with the intent to lower the body temperature. Move the victim to a cool area, thoroughly soak the clothing with cold water, and vigorously fan the victim.

Heat Exhaustion

Heat exhaustion is caused by the loss of large amounts of body fluid and salt through sweating. A victim suffering heat exhaustion usually still sweats, but experiences weakness or fatigue, giddiness, nausea, or headaches. Severe cases may exhibit vomiting or unconsciousness. The skin is clammy and moist, the complexion is pale or flushed, and the body temperature is normal. Treatment requires rest in a cool place and intake of liquids (caffeine-free).

Burn Operations

Boom Deployment

Boom deployment will be consistent with the boom's instruction manual. Deployment of the boom in an ISB response situation will be made easier and safer with planning and training of personnel in advance of any response effort. Preparations for the following considerations should be completed in advance:

- Ensure that the boom is properly stored in the tray or storage container as specified so deployment is feasible without snagging or twisting. A single twist of the boom can render it nearly useless for oil containment at or near the twist. Attempting to untwist the boom by hand after deployment presents a hazard to personnel.
- During deployment, anticipate drag forces induced by vessel movement and natural and currents. Avoid standing on or holding down boom during

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adjustments. Use proper tie-downs and anchor points to eliminate tension in the portion of the boom on which work is being done.

- Ensure that all tie-downs, towlines, tow posts, etc., are strong enough to withstand the average and peak drag forces that may be experienced by the fire resistant boom in tow.
- Provide adequate communications between the boom-towing vessels and the personnel tending the boom out of its container or tray. Dedicated radio links and hand signals should be pre-designated in case of an emergency.

Boom Towing

Boom towing will be consistent with the boom instruction manual. The following are safety considerations during towing operations:

- To avoid overexposure to the intense heat of the flames, all vessels must remain at least 3-5 times the fire diameter from the flame perimeter. Downwind of the burn, the minimum approach distance will be necessarily greater to avoid emission exposure to personnel. For operations using 660 feet or less of boom, use tow lines approximately equal to the length of the boom. For boom lengths greater than 660 feet tow lines may be less than the length of the boom. This allows for adequate distance between the towing vessels and the burning oil contained in the bottom third of the boom in a “U” configuration. Also, ensure that strength of tow lines can withstand the maximum anticipated tension forces induced by the drag force of the boom.
- Ensure that qualified aerial support is prepared with established communications line to inform all responders of the location of the boom-towing vessel’s relative to the target oil slick; other oil slicks in the same general area; other vessels in the area; and the anticipated region of influence from combustion products.
- Prior to ignition, ensure that all personnel on-site are positioned upwind or crosswind from the target slick.
- If response operations commence at or near the spill source, personnel and equipment will be positioned at a safe distance from any potential explosion or premature ignition of oil at or within the source.
- **Contained oil should be ignited only after all pre-burn checks and requirements, as outlined in the FOSC approval applications and operational checklists are met and confirmed via radio link with all vessel commanders and key participants.**

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Boom and Boat Handling

Refer to the instruction manual for boom and boat handling instructions. Proper attention to the status of the burn, the speed and position of the towing vessels, and the proximity of the burn, the speed and position of the towing vessel, and the proximity of the burn to other vessels, slicks, etc., must be maintained for quick response to dangerous situations. The boom-towing vessels will have a pre-determined plan of communication and action for defined situations, such as: modification of the rate of burn (by modifying the size); requests of and offers for assistance to the sister towing vessel; and termination of the burn.

Monitoring

Monitoring should always be incorporated as part of standard ISB operations; however, in some cases, especially in remote areas, it may be difficult or not possible to monitor. Information from monitoring, sampling, and computer modeling will be continuously evaluated to ensure the burn is conducted safely and to gather historical data to enhance our knowledge of in-situ burning. Weather and sea conditions will also be continuously monitored, and, if conditions become unfavorable, the burn may be extinguished.

Monitoring Program

To ensure health and safety Special Monitoring of Applied Response Technologies (SMART) protocols will be used. Refer to Chapter 9000 Appendix I, Special Monitoring of Applied Response Technologies (SMART) for more information.

The Southeast Louisiana Area Committee has also adopted the current U.S. Coast Guard (USCG) National Strike Force monitoring program for ISB operations to allow for timely utilization of this response tool and to insure the availability of the monitoring results to the UC and the Federal and State Trustees involved in the response. This program is designed for assets and logistical capabilities that are provided in this area by the USCG Gulf Strike Team (GST) and the Scientific Support Coordinator's (SSC) scientific support team.

The GST has been chosen for this task because of their proven ability to quickly respond to the UC's technical needs during an oil spill incident with properly trained and equipped personnel and logistical support. Having a government agency accomplish this task is partially dictated by the operational need for such monitoring data sets to remain in the public domain in order to ensure timely availability and objective presentation of the data to the UC.

The GST will perform the actual on-site monitoring to collect the raw data with the guidance of the SSC's scientific support team. The SSC's scientific support team will

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assist in monitoring, analysis of the data, and forwarding of the results to the UC in a timely manner.

The monitoring program is designed to enhance the decision making process undertaken by the UC during the use of ISB in fulfillment of his/her responsibility to ensure appropriate and timely response to mitigate the effects of oil spills, as established by the Clean Water Act and defined by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. This monitoring program is established to attempt to provide the FOSC with logical “Continue/Discontinue” input during actual operations involving ISB.

Since the monitoring protocols are constantly undergoing revision and change due to improvements and enhancements made to the available technology and monitoring practices, the actual monitoring procedures and processes are held under separate cover. The current monitoring protocol is available within incident specific planning documents available to the UC and the Southeast Louisiana Area Committee.

Monitoring Procedures

General considerations

In general, SMART is conducted when there is a concern that the general public may be exposed to smoke from the ISB operations. It follows that monitoring should be conducted when the predicted trajectory of the smoke plume indicates that the smoke may reach population centers, and the concentrations of smoke particulates at ground level may exceed safe levels. Monitoring is not required, however, when impacts are not anticipated.

Execution of ISB has a narrow window of opportunity. It is imperative that the monitoring teams are alerted of possible ISB operations and a SMART operation as soon as burning is being considered, even if implementation is not certain. This increases the likelihood of timely and orderly SMART operations.

Sampling and Reporting

Monitoring operations require deployment of one or more monitoring teams. SMART recommends at least three monitoring teams for large-scale burning operations. Each team uses a real-time particulate monitor capable of detecting the small particulates emitted by the burn (PM-10), a global positioning system, and other equipment required for collecting and documenting the data. Each monitoring instrument provides an instantaneous particulate concentration as well as the time-weighted average over the duration of the data collection. The readings are displayed on the instrument’s screen and stored in its data logger. In addition, particulate concentrations are logged manually every few minutes by the monitoring team in the recorder data log. The monitoring teams are deployed at designated areas of concern to determine ambient

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concentrations of particulates before the burn starts. During the burn, sampling continues and reading are recorded both in the data logger of the instrument and manually in the recorder data log. After the burn has ended and the smoke plume has dissipated, the teams remain in place for some time (15-30 minutes) and again sample for a record ambient particulate concentrations.

During the course of the sampling, it is expected that the instantaneous readings will vary widely. However, the calculated time-weighted average readings are less variable, since they represent the average of the readings collected over the sampling duration, and hence are a better indicator of particulate concentration trend. When the time-weighted average readings approach or exceed the Level of Concern (LOC), the team leader conveys this information to the ISB Monitoring Group Supervisor (ISM-MGS) who passes it on to the Technical Specialist in the Planning Section (SSC, where applicable), which reviews and interprets the data and passes them, with appropriate recommendations, to the UC.

Monitoring Locations

Monitoring locations are dictated by the potential for smoke exposure to human and environmentally sensitive areas. Taking into account the prevailing winds and atmospheric conditions, the location and magnitude of the burn, modeling output (if available), the location of population centers, and input from state and local health officials, the monitoring teams are deployed where the potential exposure to the smoke may be most substantial (sensitive locations). Precise monitoring locations should be flexible and determined on a case-by-case basis. In general, one team is deployed at the upwind edge of a sensitive location. A second team is deployed at the downwind end of this location. Both teams remain at their designated locations, moving only to improve sampling capabilities. A third team is more mobile and is deployed at the discretion of the ISB-MGS. It should be emphasized that, while visual monitoring is conducted continuously as long as the burn takes place, air sampling using SMART is not needed if there is no potential for human exposure to the smoke.

Level of Concern

The Level of Concern (LOC) for SMART operations follows the National Response Team (NRT) guidelines. As of March 1999, the NRT recommends a conservative upper limit of 150 micrograms of PM-10 per cubic meter of air, averaged over one hour. Furthermore, the NRT emphasizes that this LOC does not constitute a fine line between safe and unsafe conditions, but should instead be used as an action level. If it is exceeded substantially, human exposure to particulates may be elevated to a degree that justifies precautionary actions. However, if particulate levels remain generally below the recommended limit with few or no transitory excursions above it, there is no reason to believe that the population is being exposed to particulate concentrations above the EPA's National Ambient Air Quality Standard (NAAQS). It is important to keep in mind that real-time particulate monitoring is one factor among several, including smoke

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modeling and trajectory analysis, visual observations, and behavior of the smoke plume. **The UC must determine early on in the response what conditions, in addition to the LOC, justify termination of a burn or other action to protect public health.** The UC should work closely with local Public Health organizations in determining burn termination thresholds.

When addressing particulate monitoring for ISB, the NRT emphasizes that concentration trend, rather than individual readings, should be used to decide whether to continue or terminate the burn. For SMART operations, the time-weighted average generated by the particulate monitors should be used to ascertain the trend. The NRT recommends that burning not take place if the air quality in the region already exceeds the NAAQS and if burning the oil will add to the particulate exposure concentration. SMART can be used to take background readings to indicate whether the region is within the NAAQS, before the burn operation takes place. The monitoring teams should report ambient readings to the UC, especially if these readings approach or exceed the NAAQS.

Information Flow and Data Handling

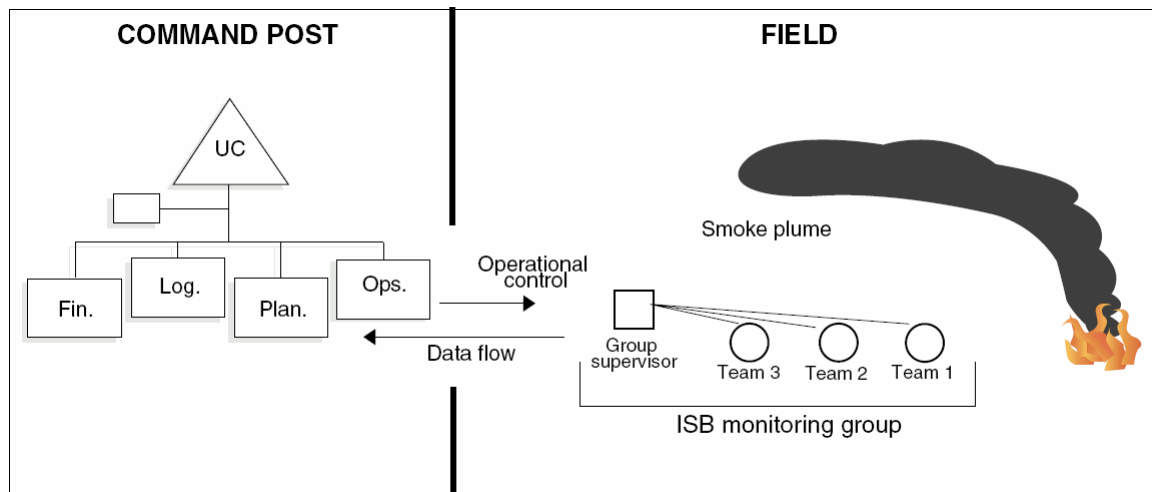
Communication of monitoring results should flow from the field ISB-MGS to those persons in the UC who can interpret the results and use the data. Typically, this falls under the responsibility of a Technical Specialist on ISB operations in the Planning Section of the command structure. The observation and monitoring data will flow from the Monitoring Teams to the ISB-MGS. The ISB-MGS forwards the data to the Technical Specialist. The Technical Specialist or his/her representative reviews the data and, most importantly, formulates recommendations based on the data. The Planning Section Chief communicates these recommendations to the UC.

Quality assurance and control should be applied to the data at all levels. The Technical Specialist is the custodian of the data during the operation, but ultimately the data belongs to the UC. The UC should ensure that the data are properly archived, presentable, and accessible for the benefit of future monitoring operations.

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The below figure depicts command, control, and data flow during ISB monitoring operations.



For more information regarding SMART including training, equipment lists, etc., please refer to Chapter 9000 Appendix I Special Monitoring of Applied Response Technologies (SMART).

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SOUTHEAST LOUISIANA AREA COMMITTEE Dispersant Use Policy

Introduction

Following an oil spill, response actions should be designed to minimize environmental impact. While physical control and recovery techniques are the traditional response measures, other countermeasures also need to be considered. Dispersants are chemicals that operate at the water-oil interface and, by reducing the surface tension, cause all or part of the slick to be dispersed into the water column. Scientific studies indicate that using dispersants can, under certain conditions, significantly reduce the negative short-term and long-term environmental impacts of oil spills.

The Southeast Louisiana Area Committee believes that this Dispersant Use Policy represents a conservative approach to dispersant use, and that institution of this policy will help to ensure a more rapid and effective response to oil spills within the Southeast Louisiana Area Committee area of responsibility. Questions, concerns, and recommendations relating to this policy may be addressed to the Chair or Co-Chair of the Response, Science, and Technology Workgroup.

Purpose

This policy implements Subpart J of the National Oil and Hazardous Substances Contingency Plan (NCP) and provides pre-authorization for the limited use of dispersants by the predestinated USCG Federal On-Scene Coordinator on oil discharges impacting federal waters within the Southeast Louisiana Area Committee boundaries. The Southeast Louisiana Area Committee members agree that, in certain circumstances, the complete physical containment, collection, and removal of oil discharges may not be possible. The use of dispersants may therefore be considered to prevent a substantial threat to public health or welfare, or to minimize serious environmental damage. This policy establishes criteria under which dispersants may be applied to the waters under federal jurisdiction within the Southeast Louisiana Area Committee boundaries or as established.

Scope

The USCG, EPA, DOI, DOC, and the coastal states of the RRT VI have adopted the use of dispersants as an approved tool to respond to discharged oil on coastal waters within the jurisdiction of RRT VI. This policy includes protocols under which dispersant use must be conducted by the Unified Command within the boundaries of the Southeast Louisiana Area Committee.

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Offshore dispersant application to remediate oil spills occurring in the Southeast Louisiana Area Committee boundaries will be conducted in accordance with this policy. The pre-approval to authorize the use of dispersants provided by this policy is in effect for the Pre-designated Federal On-Scene Coordinator only.

Dispersant Use Policy

Areas within the Southeast Louisiana Area Committee area of responsibility fall into three different zones with respect to dispersant use: a pre-approval zone, case-by-case approval zones, or no dispersant use zones. The FOSC will determine whether to authorize the use of dispersants in pre—approval zones or request RRT approval of dispersant use in case-by-case approval zones through the information gathering and decision-making process outlined in this policy. It is expected that any FOSC Checklists and supplemental documentation will be completed by the Technical Specialist within the Environmental Unit, with input from appropriate members of the Operations Section and other Natural Resource Trustee agencies, as needed.

The decision to use dispersants is best made within the 24-36 hours after a discharge has occurred.

Dispersant Pre-Approval Policy

The objective of the RRT VI FOSC Dispersant Pre-approval Guidelines and Checklist is to provide for environmentally safe and effective dispersant operation. The programmed checklist approaches allows the FOSC to quickly arrive at a logical GO/NO-GO decision. This gives the dispersant operation the opportunity to begin in a timely manner that is consistent with attempting to maximize the effectiveness of dispersant use as a countermeasure to reduce the impact of oil spills. The general criteria for evaluating the approval for use of dispersants in marine waters “from the ten-meter isobaths or three nautical miles”, whichever is farthest from the shoreline, to 200 nautical miles from the coastline of an island shoreline EXCEPT for waters designated as a part of a National Marine Sanctuary and any Tribal Usual and Accustomed marine area or waters within three miles of any Tribal Usual and Accustomed marine areas or waters.

The Region VI RRT has developed a near shore environmental dispersant expedited approval process and checklist.

The RRT VI OSC Pre-Approved Dispersant Use Manual can be found in this Section following the Southeast Louisiana Area Committee Policy. The FOSC has been directed to use the decision –making process as defined in the OSC Pre-approved Dispersant Use Manual to determine the applicability of dispersants as a response option for a specific spill response. The RRT **SHALL** be notified by the FOSC of an approval to initiate dispersant operations within **three hours** after the approval has been given to

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the Responsible Party. It is required that the RRT be convened within three hours of the completion of the first dispersant spray drop, and that a debrief/after-action report will be given to the RRT by the FOSC and the SSC immediately following the completion of the pre-approved dispersant operations. Pre-approval is for aerial application only. If other application techniques (e.g., vessel) are desired in the pre-approval area after aerial application has begun, consultation with and approval of the RRT is required before those techniques can be applied.

Pre-approval is only for those dispersants that are listed on the most current NCP Product Schedule and that have been specified in the NCP Product Schedule Listing to be suitable for aerial application. Pre-approval allows for maximum dispersant spray coverage of suitable slick areas. Multiple sorties and passes are authorized to continue unless a decision is made by the RRT, when convened, to cease operations.

The RP or the FOSC must have established the appropriate contractual relationships required for aerial application of dispersants as part of the pre-planning process. If contracts must be established during the spill response, activation of the dispersant pre-approval is inappropriate. There should be sufficient time to consult with the RRT in accordance with the Region VI Regional Contingency Plan (RCP), Subpart H (Authorization for The Use of Dispersants in Non-Life Threatening Situations).

Dispersant Case-by-Case Approval Policy

According to the National Contingency Plan, 40 CFR Part300,910(b), in all areas outside of the pre-approved zone, FOSC authorization to use dispersants requires the concurrence of the EPA and State representatives to the RRT with jurisdiction over the waters threatened by the release or discharge, and consultation with the DOI and DOC representatives to the RRT. It is the policy the Southeast Louisiana Area Committee to also consult with appropriate Tribal governments with off reservation treaty rights in the navigable waters threatened by a release or discharge, when practicable. Upon activation of the Region VI RRT, the FOSC should forward the completed "FOSC Dispersant Authorization Checklist" and supplemental documentation, and any/all supporting information to the RRT for consideration in their concurrence and consultation process. Oil trajectory, potential impact area, and the respective sensitivities of the resources at risk in those areas should be considered. A decision from the RRT on dispersant use is expected within 3 hours of activation.

The Dispersant Case-by-Case Approval Zones are as follows:

- All marine waters that are seaward of the shoreline but shoreward of the 10 meter isobaths, whichever is further.
- Waters designated as part of a National Marine Sanctuary and waters that are a part of a Tribal Usual and Accustomed marine area.

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- Marine waters within 3 miles of the borders of a Tribal Usual and Accustomed marine area In consideration of the use of dispersants within 3 miles of a Tribal Usual and Accustomed marine area, the Southeast Louisiana Area Committee will consult with the applicable Tribal Government.

This is not a pre-authorization. RRT VI authorization for dispersant use is required for use in the near-shore environments listed in this section.

The FOSC may authorize the use of any dispersant without obtaining concurrence through the case-by-case approval policy process when, in the judgment of the FOSC, their use is necessary to prevent or substantially reduce a hazard to human life.

No Dispersant Use Policy

There are some areas in the Southeast Louisiana Area Committee area of responsibility where the Southeast Louisiana Area Committee has determined it is not appropriate to use dispersants. In these areas, dispersants may be used only if, in the judgment of the FOSC, they are required to prevent or substantially reduce a hazard to human life.

The No Dispersant Use Zones are as follows:

- Inland bays
- Estuaries

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FOSC Case-by Case Dispersant Authorization Checklist

Y	N	N/A	
			Dispersability: Available technical information or expertise suggests that the spilled product is dispersible and will still be dispersible in the time frame of anticipated application of dispersants.
			NCP Listed Dispersant: The dispersant to be used is listed on the current NCP Product Schedule and is considered appropriate for the oil type and conditions.
			Inadequacy of other options: Mechanical response equipment alone is not deemed adequate (due to the magnitude of the spill, availability, or timelines) to protect potential resource at risk. Environmental trade-offs of dispersant use have been considered.
			Weather Conditions: Weather and sea conditions are conducive to dispersant application by the chosen system or platform (Generally, for aerial application: wind less than or equal to 25 kts, visibility greater than or equal to 3 statute miles, and ceiling greater than or equal to 1000 feet. Generally for boat application, a sea state that will allow the vessel to be used to conduct an effective and safe spray operation.)

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Y	N	N/A	
			<p>General Adequacy of Dispersant Spray System and Personnel Competency: In addition to any other requirements of the Region VI RRT and the Southeast Louisiana Area Committee, the general criteria for evaluating the suitability for use of any dispersant system should be the ability of the party or parties requesting approval to demonstrate to the satisfaction of the FOSC, the following:</p> <ul style="list-style-type: none"> • That the application system has been: <ul style="list-style-type: none"> ○ Specifically designed for its intended purpose, or ○ If not specifically designed for dispersant use, had been tested and deemed to be effective and appropriate, or ○ By some other specific means of documentation or experience, reasonably deemed to be effective and ○ Appropriate under the circumstances. • That the design and operation of the application system can reasonably be expected to apply the chemical dispersant in a manner consistent with the dispersant manufacturer's recommendations, especially with regard to dosage rates and concentrations. • That the operation will be supervised or coordinated by personnel who have experience, knowledge, specific training, and/or recognized competence with chemical dispersants and the type of system to be used
			<p>Aerial Application Operational and Technical Issues: In the case of Aerial Application of dispersants:</p> <ul style="list-style-type: none"> • The FOSC must ensure that the Responsible Party's dispersant operation provides for a dispersant controller over the spray zone able to effectively direct the dispersant aircraft in carrying out the dispersant operation, including avoiding the spraying of birds and marine mammals that may be in the area. • Aircraft spray systems must be capable of producing dispersant droplet sizes that provide for optimal dispersant effectiveness as described in ASTM guidelines or as supported by peer-reviewed research.

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Y	N	N/A	
			Boat Application Operational Technical Issues: If the system involves spray arms or booms that extend out over the edge of a boat and have fan type nozzles that spray a fixed pattern of dispersant, the dispersant operator has confirmed that application will comply with the following ASTM standards as appropriate: a) ASTM F 1413-92 Standard Guide for Oil Spill Dispersant Application Equipment: Boom and Nozzle Systems b) ASTM F 1460-93 Standard Practice for Calibrating Oil Spill Dispersant Application Equipment Boom and Nozzle System C) ASTM F 1737-96 Standard Guide for Use of Oil Spill Dispersant Application Equipment during Spill Response: Boom and Nozzle Systems.
			Fire Monitor Operational and Technical Issues: If the system involves the use of a fire monitor and or fire nozzle to apply the dispersants from a boat, the dispersant operator has confirmed that application will comply with ASTM Standard F 2465-05 for fire monitors and has provided the information in paragraph 7 of the Standard titled "Information to be provided by the user" to ensure that the fire monitor meets the standard and is acceptable for use. The specific fire monitor system(s) intended for use must have been specifically designed for dispersant application and/or must have been specifically calibrated via field trial for dispersant use.
			SMART Deployment: The FOSC has activated Special monitoring of Applied Response Technologies (SMART), including a SMART observer, at a minimum, to fly over the response zone to visually assess effectiveness of the dispersant applications (Tier I). See Chapter 9000, Appendix I Special Monitoring of Applied Response Technologies.
			Wildlife Observation: A specialist in aerial surveillance of wildlife or oil, preferably from a Trustee agency, is available to observe wildlife that should be avoided in the potential dispersant application area. If possible, wildlife observations should be conducted immediately prior to dispersant application.

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Y	N	N/A	
			Endangered Species Act (ESA) and Essential Fish Habitat 9EFH) Consultations: Endangered Species Act (ESA) consultation has been initiated in accordance with implementation of the 2001 “Interagency Memorandum of Agreement Regarding Oil Spill Planning and Response Activities under the Federal Water Pollution Control National Oil and Hazardous Substances Pollution Contingency Plan and the Endangered Species Act.”

*If the answer to any item on the checklist is “N”, explanation and justification for authorization of dispersant use must be included in the After-Action Report.

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In addition to the FOSC Dispersant Authorization Checklist and the Supplemental Document, the appropriate Technical Specialists within the Environmental Unit will prepare a map outlining the area proposed for dispersant application, including any pertinent information.

For case-by-case dispersant decisions, once the RRT has made a decision on the use of dispersants, Technical Specialists within the Environmental Unit will also prepare a Decision Memo to capture the specific details, conditions, constraints and any other pertinent information from the RRT linked to the used dispersants. This memo, addressed to the FOSC from the key RRT members (EPA Co-Chair, affected State representative, and the representatives from the DOC and DOI), will then be signed by each key member of the RRT involved in the decision and sent to the FOSC.

Subsurface Dispersants

Subsurface Dispersant Application Policy

The RP shall implement an approved Dispersant Plume Characterization Plan for Subsurface Dispersant Application. Part 1 of the plan is a “Proof of Concept” to determine if subsurface dispersant operations are chemically dispersing the oil plume. Once the “Proof of Concept” test is complete, the results will be reviewed by the FOSC/RRT VI for a decision to proceed or not to proceed with Part 2 of the plan. Part 2 of the plan involves robust sampling to detect and delineate the dispersed plume. Part 3, entitled “Subsurface Injection of Dispersant”, outlines the operational procedures. Additional guidance will be provided by the RRT VI.

At least 24 hours prior to the testing, use and/or application of any subsurface dispersants, the RP shall provide a Dispersant Application Plan that identifies the dispersants to be used, describes the methods and equipment used to inject the dispersants to be used, describes the methods and equipment used to inject the dispersant, plume model to assure representative sampling, proposed method of visual observation, process for determining the effectiveness of subsurface injection, the specific injection rate (i.e., gallons/minute), the total amount to be used for the duration of the test, the total length of time that dispersant is injected, and the plan for sampling and monitoring, as approved by the Environmental Unit. Dispersants must be on the approved NCP product schedule and suitable for this use.

All data shall be provided to the FOSC and RRT VI within 24 hours of the information being received. This data includes real time monitoring, laboratory analysis, documented observations, photographs, video, and any other information related to subsurface dispersant application.

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The RP shall conduct Part 1 monitoring and collect the data outline below to determine dispersed plume concentration and transport. The RP shall conduct Part 2 monitoring and collect the data outlined below, which will be sustained and more comprehensive, to address plume fate and effects from the dispersed plume and chemical dispersants based on the results of Part 1 and iterative hydrodynamic modeling output.

The RP shall commence Part 1 monitoring when subsurface application of dispersants is initiated.

Part 1

The RP shall design and implement a part 1 monitoring plan to determine the factors needed to calculate dispersion effectiveness, namely, percent oil, water, and dispersant. This phase of sampling should determine the factors to predict buoyancy; namely droplet sizes, density (or specific gravity) along the thermal gradient of the water column, and kinematic viscosity.

Part 2

If Part 1 is successful and continuous subsea injection proceeds, the RP shall design and implement a Part 2 monitoring plan to collect and report, on a daily basis, the data and information described below. The RP shall submit this plan to the FOSC/RRT VI for approval and shall begin implementation upon notice from the FOSC. The RP shall continue implementation of this plan until further notification from the FOSC.

The RP's monitoring plan shall include a more thorough oil analysis, to enable the EPA to determine whether the dispersed plume is toxic to aquatic life. This plan shall be designed and implemented to determine whether the dispersed oil will hang in the water column and eventually come in contact with the benthos as it approaches land. The RP has the option of conducting this particular monitoring and analysis as part of Part 1 if so desired.

Example

PART 1- Proof of Concept- Data Collection Requirement

- Towed Fluorometer at 1 meter
- Laser In-Situ Scattering and Transmissometry (LISST) Particle Analysis at various intervals from surface to 550 meters
- Dissolved Oxygen at various intervals from surface to 550 meters
- CTD- Conductivity, Temperature, and Depth at various intervals from surface to 550 meters

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- Water sampling from surface to 550 meters for polycyclic aromatic hydrocarbon (PAH) analysis
- Aerial Visual Observation (Weather permitting)

PART 2- Characterization Plan Data Collection Requirement

- Cast Fluorometer- surface to sea floor
- LISST Particle Analysis at various intervals from surface to sea floor
- Dissolved Oxygen at various intervals from surface to sea floor
- CTD- Conductivity, Temperature, and Depth at various intervals from surface to sea floor
- Water sampling from surface to 550 meters for PAH analysis
- Aerial Visual Observation (Weather permitting)
- Rototox toxicity testing
- UV-Fluorescence testing to meet objectives

PART 3- Subsurface Injection of Dispersant- Parameter Requirements

- Type of dispersant to be used
- Rate of dispersant injection
- Process for monitoring pumping rate
- Procedures for FOSC to start and stop injection

Evaluation Criteria to Determine Operational Shut-Down of Subsurface Dispersant Application

The FOSC will immediately convene the RRT VI when either of the following conditions is reported:

1. If there is a significant reduction in dissolved oxygen from background to below 2 mg/L; or

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2. If the EPA's interpretation of the toxicity test reveals excessive exertion of a toxic response. To determine a measurable toxic response, the RP must first perform a rangefinder test since the collection of the sample will be directly from the toxic plume, and any sample from the plume will likely kill 100% of the test population. Therefore, the rangefinder must first be conducted to determine an order of magnitude dilution that gives a measureable response. Then, a more refined dilution procedure must be done to get the final LC50* answer. This result will be compared to a NOAA plume model that would predict when or where exertion of that toxic response would take place. The EPA and NOAA will interpret the results of the toxicity test to inform determination of a shutdown decision.

**LC stands for "lethal Concentration". LC values usually refer to the concentration of a chemical. LC50 is the concentration that will be lethal to 50% of the test animals in a given time (usually 4 hours).*

The RRT will evaluate the conditions above, in addition to all relevant factors including shoreline, surface water, and other human health and ecological impacts, to determine whether subsurface dispersant application should be shut down.

Limitations to Address

The RP shall include in its monitoring plan provisions to address and minimize the impact of the following challenges:

1. Timely transport of samples to labs where necessary, may be subject to weather and/or operational delays.
2. Sampling in the deep sea environment may pose challenges due to equipment limitations and malfunctions.

Environmental Tradeoff Assessment for Subsurface Dispersant Use

RRT VI trustee agencies have, in the past, discussed the pending impacts of the oil emulsion and surface-dispersed oil on fisheries, marshes and wetlands, and near shore marine life on the coastal shelf.

Particular focus was spent on threats to sperm whales, concluding that the whales are at risk at the surface (from inhalation of volatiles and direct contact with slicks) as well as from diving through dispersed oil in deep water or consuming squid that may be exposed to deep water dispersed oil plumes. A risk of damage from oil exposure will be shifted to organisms in this environment. Diving studies from recent sperm whale studies in the GOM identified the 400-600 m (1312-1969 ft) depth range as the most consistent for feeding sperm whales. If oil/dispersant from the deepwater dispersion stays below this level, direct impacts to whales should be reduced.

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Subsurface Dispersants Monitoring

The immediate goal of subsurface dispersant monitoring is an integrated sub-surface sampling strategy in order to produce actionable information and products to effectively inform operational decisions such as boom deployment or dispersant application during the response phase of the incident. The resulting data and information (e.g., maps; model outputs; informational releases) will have extended value as a foundation for the subsequent assessment and monitoring phases of an incident response. An additional outcome will be extended science and operational knowledge in the chemical, physical, and biological realms.

The primary objectives of subsurface dispersant monitoring is:

- Characterize and determine the distribution of subsurface oil beyond the immediate area of the oil release;
- Identify changes in oil characteristics and transport associated with response measures at the release point;
- Support verification of oil fate and transport models; and
- Provide context for longer-term integrated ecosystem assessment of oil spill impacts.

To achieve these objectives three immediate actions are required in the short-term:

- Evaluation and validation of optimal oil detection methodologies in this incident zone;
- The capture of continued ocean state conditions for forecast models; and
- Model parameterization, output, and feedback to inform response decisions.

Quality Assurance and Sampling Plan Requirements

The RP's plan shall include sample collection methodology, handling, chain of custody, and decontamination procedures to ensure the highest quality data will be collected. Discrete samples shall be tested at an approved lab(s). Duplicate samples shall be tested. All samples (or as practicably possible) shall be archived from potential future analysis. Where technically possible all samples shall be at least 100 ml.

The RP shall include the following components and criteria in its Sampling Plan:

1. An Introduction, to include project objective and project staff

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2. A brief site description and background
3. A description of the Sampling Approach and Procedures to encompass:
 - a. A brief overview of sampling activities, data quality objectives, and health and safety implementation strategies (frequently, this references another specific document, but must be included).
 - b. The actual sampling and/or monitoring approach, to ensure repeatability and consistent procedures. Describe sampling, monitoring, sampling, and field quality control procedures, spoil or waste disposal procedures resulting from this effort, as well as specimen/data handling issues.
 - c. Sample management- how the sample will be procures, handled, and delivered.
 - d. Sample instructions- preservation, containers, and hold times
4. The analytical approach- Lab tests to be run, any special instructions, how the data will be verified, and how data will be reported.
5. Quality Assurance-custody procedures, field records including logs, chain of custody, qualitative data handling including photographs.

Additional Requirements for Subsurface Sampling

- In addition to sampling of dispersant/oil and oil only waters, the RP shall also collect baseline data of waters without direct application of dispersant or oil.
- The RP shall allow the EPA/NOAA scientists flexibility within the sampling plan to direct the collection of additional data based on field observations (at times and locations of their choice).
- The RP shall use Turner Designs C3 fluorometer (e.g. SMART protocol) to distinguish between oil impacted surface waters and those not impacted by oil.
- The RP shall use a CTD rosette package equipped with CDOM fluorometer and a 2-way communications wire to ensure the EPA/NOAA scientists can view profile data as the rosette package is deployed. In addition, the CTD rosette package must be capable of collecting discrete samples in the water column using the live feed data stream.

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- The RP shall deploy LISST from the vessel for continuous sampling of /surface waters during transits, in order to provide particle size counts information which potentially distinguishes between dispersed and non-dispersed oil.
- Discrete water samples shall be taken by the RP at predetermined depths as specified or directed by EPA/NOAA scientists for UV fluorescences.
- The RP shall provide 48 hour advance notice for departure and trip duration timelines to the FOSC and the RRT.
- Data reporting shall be conducted by the RP on a daily basis. This reporting shall include a sample tracking table. Data reporting shall be provided by the RP to the FOSC and the RRT.

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Subsurface Dispersant Monitoring Checklist

- ☐ Complete RRT VI dispersant checklist and send to the Federal On Scene Coordinator (FOSC). The FOSC will coordinate the request with the Regional Response Team (RRT) for approval.
- ☐ Draft a subsea dispersant plan and submit with the checklist to the FOSC.

The plan should address the following:

- ☐ Timing of the monitoring (when & where)
- ☐ Monitoring Objectives
 - Confirm location and extent of the subsurface plume.
 - Determine how much oil (total PAH) remains in the dispersed plume.
 - Collect physical oceanographic data to validate the sub-surface dispersed plume model.
- ☐ Monitoring Techniques:
 - Laser In-Situ Scattering and Transmissometry_(LISST-ST)
 - Ultra Violet (UV) Fluorescence
 - Toxicity testing (may be optional)
- ☐ Water Column Sampling
 - Total PAH analysis
 - Dissolved oxygen
- ☐ Physical oceanographic data collection
 - Initial Conductivity Temperature and Depth (CTD)
 - Acoustic Current Doppler Profilers (ACDP) for currents

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- ☐ Shutdown Criteria – Proposed criteria for shutting down subsea dispersant use
- ☐ Monitoring Vessel Schedule/Cruise Plan
- ☐ Reporting – provide for written reports daily of scientific observations w/associated data and sampling data as it is received to regulatory agencies as required.
- ☐ Coordinate a research vessel (e.g., R/V BROOKS McCALL, R/V PELICAN) w/embarked scientists to execute the above plan
- ☐ Plan for a regulatory agency representative (BSEE, USCG or EPA) to be embarked on the research vessel.
- ☐ Equipment for Subsea monitoring for research vessel:
 - ☐ CTD rosette package equipped with CDOM fluorometer w/2-way communication wire
 - ☐ Laser In-Situ Scattering and Transmissometry (LISST-ST)
 - ☐ Acoustic Current Doppler Profilers (ACDP)
 - ☐ Sea-Bird Electronics, Inc., SBE 25 SEALOGGER CTD (Conductivity, Temperature and Depth) to measure temperature, salinity, and dissolved oxygen (DO₂), with Niskin water samples taken at 1-m, 275 m, and 550 m depth.
 - ☐ A Sea-Bird 911 *plus* CTD with a Wet Labs ECO Colored Dissolved Organic Matter (CDOM)
 - ☐ FLCDRTD-1800 fluorometer and a Sea- Bird SBE 43 DO₂ sensor to measure continuous profiles of temperature, salinity, DO₂, and fluorescence

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Resources at Risk

Ecological implications of dispersing oil in deep water are known. Key points are:

- The Gulf is two “seas”, one above the other and each with its own currents and ecosystems. Unlike the warm, well-lit, active, surface layer (0 to 200 m; 0-656 ft), the deep water is cold (4C, 39 F at 1524 m; 5000 ft) and dark with turbulence (mixing) where currents intensify over the slope. A density interface exists between 800-1000 m (2625-3281 ft). This interface is expected to prevent movement of a dispersed oil plume above this depth.
- There is no photosynthetic activity in the deep sea and the animal and microbial life is entirely different including:
 - Many pelagic species of squid, fishes, crabs, jellyfish and small crustaceans unfamiliar to most of the general public and fishers
 - Mesopelagic and benthic communities dependent on flux of organic matter fallout from the upper waters
 - Many forms of cold-water coral and methane and sulfide processing seep communities on the sea floor.
- Toothed whales, notably sperm whales, are among the animals that dive into the deep to feed on cold water squids. Tuna, including blue fin, may also “go deep” to feed and/or spawn and spawning can reach a depth of 300 m (984 ft). The majority of sperm whale feeding is at 400-600 m (1312-1969 ft). It is expected that the dispersed plume at depth would not rise past the major density layer at around 800 m (2624 ft) depth, and thus not impact this activity. Similarly, sea turtles, of particular concern, the leatherback sea turtle, also dive relatively deep and feed on pelagic prey. However, this feeding activity would be far above 800 m (2625 ft).
- A specific concern is the large plankton-feeding whale shark that dives and feeds to depths up to 1000 m (3280 ft). This diving depth could overlap the water column containing dispersed oil, but only at the extreme range of the diving depth.
- Unique Benthic Communities: Maps for some species and bottom communities are available from BSEE and NOAA for determining where special habitats and protected areas occur in the region.

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- The deepwater environment is not oil-free in the GOM: naturally occurring oil seeps are estimated to discharge up to 40 million gallons (980,000 bbl) per year between a depth of 300-3000 m (984-9840 ft) in the entire Gulf of Mexico (NRC, 2003). The oil concentrations, types of hydrocarbons, and exposure durations to which the deep biota is naturally exposed are unknown.
- Unlike the surface layer, food webs of the deep are almost entirely dependent on flux of organic material sinking from the surface. They may be adapted to organic carbon that includes small amounts of petroleum hydrocarbons. In addition, there are numerous chemosynthetic communities on the sea floor living on methane and oil seeps and presumably naturally experiencing low levels of petroleum. These processes may allow them deal with a small additional flux of petroleum.

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Supplemental Documentation for Dispersants

The Technical Specialist within the Environmental Unit preparing the FOSC Dispersant Authorization Checklist will produce an itemized list of the rationale behind the “Y” or “N” decision for each of the Checklist items:

Item #	Supplemental Checklist	Rational Behind Y or N Decision
1.	Dispersability	
2.	NCP Listed Dispersant	
3.	Inadequacy of other options	
4.	Weather Conditions	
5.	General Adequacy of Dispersant Spray System and Personal Competency	
5a.	Application system designed for intended purpose	
5b.	Dosage rates and concentrations	
5c.	Experienced supervision, coordination	
6.	Aerial Application Operational and Technical Issues	
6a.	Dispersant controller over the spray zone	
6b.	Aircraft spray system dispersant droplet sizes	
7.	Boat Application Operational Technical Issues	
8.	Fire Monitor Operational and Technical Issues	
9.	SMART Deployment	
10.	Wildlife Observation	
11.	Endangered Species Act (ESA) and Essential Fish Habitat (EFH) Consultations	

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Suggested Incident After-Action Report Outline

Incident Overview

- Description of initial report (date, time, source, etc.)
- Spill source
- Spill location
- Estimated quantity and potential quantity of release
- Environmental conditions

Oil Slick Trajectory and Behavior

- Oil chemistry
- Expected movement of oil slick
- Expected weathering and behavior of product
- Observations of the same
- Observations of oil fate and movement

Completed FOSC Dispersant Authorization Checklist and Justification for Dispersant Use

- Potential impact areas and their respective sensitivities to impact
- Within pre-approval zone for RRT VI (If applicable)
- Potential for use of other recovery methods (e.g., mechanical recovery, in-situ burning)
- Weather and sea state
- Authorization checklist with explanation and justification when all items are not checked “Y” (Case-by-case)

Overview of Dispersant Operations

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- Type and product used
- Methods and rates of application
- Area of application
- Chronology of dispersant applications
- Estimates and observations of efficacy
- Sightings of marine birds and marine mammals
- Extenuating circumstances affecting deployment and any element (spotters, dispersant, SMART, etc.)
- Results from all SMART monitoring
- Post-application fate of the dispersed plume and surface slick

Chronology of Dispersant-Related Events

- FOSC Notification of the spill
- Reconnaissance aircraft requested
- Reconnaissance aircraft launch
- USCG Strike Team altered for SMART
- SMART en-route
- Reconnaissance aircraft on-scene and reports
- RP requested use of dispersants
- Source and field sample requested by FOSC
- Dispersant use approved under pre-approval guidelines (if applicable)
- Decision Memo from RRT (If not pre-approved)
- Dispersant contractor notified

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- Dispersant stock requested
- Dispersant stock en-route
- Dispersant stocks arrive at airport/dock
- Spotter aircraft/vessel launch
- Dispersant aircraft/vessel launch
- SMART vessel launch
- Spotter on-scene
- Dispersant aircraft/vessel on-scene
- SMART Vessel on-scene
- Source and “in-water” samples collected
- SMART sample begins
- First application
- Spotter aircraft/vessel option of efficacy
- SMART sampling results (go/no go)
- Additional applications, Spotter aircraft/vessel options, and SMART sampling (as required)
- Termination of dispersant operation

Overview of Dispersant Operations

- Amounts and times of dispersants applied
- Any extenuating circumstances affecting the deployment of any element (spotters, dispersant, SMART, etc.)
- Estimated and observations of efficacy

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- Any discrepancies between observations
- Any sightings of pelagic/migratory birds, sea turtles, or marine mammals.

Completed Checklists and Supporting Documentation as Appropriate

Special Monitoring of Applied Response Technologies (SMART) Protocols for Dispersants

Special Monitoring of Applied Response Technologies is a cooperatively designed monitoring program for in-situ burning and dispersants. SMART relies on small, highly mobile teams that collect real-time data using portable, rugged, and easy-to-use instruments during dispersant and in-situ burning operations. Data are channeled to the Unified Command to address critical questions about effectiveness and effects. Monitoring data can assist the Unified Command with decision-making for dispersant and in-situ burning operations.

It is the policy of the Southeast Louisiana Area Committee that the SMART protocols will be used, to the extent possible, for monitoring after the application of dispersants. Additional detail on the SMART protocols can be found in Chapter 9000, Appendix I. ***SMART does not monitor the fate, effects, or impacts of dispersed oil.*** To monitor the efficacy of dispersant application, SMART recommends three options, or tiers.

Tier I

A trained observer flying over the oil slick assesses dispersant efficacy and reports back to the Unified Command. Tier I monitoring, at a minimum, must be conducted during and dispersant application.

Tier II

Tier II provides real-time data from the treated slick. A sampling team on a boat uses a fluorometer to continuously monitor for dispersed oil one meter under the dispersant treated slick. The team records and conveys fluorometer data, with recommendations, to the Unified Command. Water samples will be taken for later chemical analysis at a laboratory.

Tier III

By expanding the monitoring efforts in several ways, Tier II provides information on the dispersed oil movement and fate. (1) Two fluorometers are used on the same vessel to monitor at two water depths; (2) Monitoring is conducted in the center of the treated slick at several water depths, from one to ten meters; and (3) A portable water laboratory provides data on water temperature, pH, conductivity, dissolved oxygen, and turbidity.

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NCP Product Schedule

A list of products currently listed in the NCP Product Schedule can be found at:
http://www.epa.gov/oem/content/ncp/product_schedule.htm

Public Outreach

Dispersant Risk Communications

The guidance below should provide interim guidance with respect to dispersant use outreach to federal, state and local public officials, local citizens, and communities. Area Committee members should provide training or information seminars or sessions to the public before a spill occurs. After a spill occurs, the Information officer and liaison officer should produce a dispersant communications plan with the following elements:

- Dispersant decisions and their use are under the direction of the FOSC in consultation with Federal and State environmental trustees.
- Dispersant - fate and transport of oil in marine waters.
- Dispersibility of oil in marine waters.
- Links between fate and transport and exposure and effects processes.
- Acute and chronic effects of exposure in the upper water column (and other areas as needed) with and without the use of dispersants.
- Biodegradation, evaporation, photo-oxidation, and sedimentation of oil in marine waters.
- Logistics of dispersant use.
- Actual areas where dispersant is being used, the actual times of deployments, concentrations, and accountability of how much dispersant was used.
- Tradeoff discussions.
- Comparisons to common household products used by the general public.
- Additional NRT or RRT provided documentation concerning dispersant use.

The general public should have access to local town meetings where the access to

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scientists and other experts will be made available to answer specific questions one-on-one.

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Decanting Policy

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SOUTHEAST LOUISIANA AREA COMMITTEE Decanting Policy

Introduction

When oil is spilled on the water, mechanical recovery of the oil is the principle approved method of responding. However, the mechanical recovery process and associated systems necessarily involve placing vessels and machinery in a floating oil environment. Incidental returns of oil into the response area, such as oil that falls back into the recovery area from vessels and machinery that are immersed and working in the oil, are an inevitable part of the mechanical recovery process. Similarly, separation or “decanting” of water from recovered oil and return of excess water into the response area can be vital to the efficient mechanical recovery of spilled oil because it allows maximum use of limited storage capacity, thereby increasing recovery operations.

This practice is currently recognized as a necessary and routine part of response operations. In addition, some activities such as those associated with oil recovery vessels, small boats, and equipment cleaning operations may result in incidental discharges. These activities may be necessary to facilitate response operations on a continuing basis and all of these activities are considered to be “incidental discharges.”

Decanting Policy

This policy addresses “incidental discharges” associated with spill response activities. “Incidental discharge” is defined as the release of oil and/or oily water within or proximate to the response area or the area in which oil recovery activities are taking place during and attendant to the oil spill response activities. Incidental discharge include, but are not limited to, the decanting of oily water, oil and oily water returns associated with runoff from vessels and equipment operating in an oiled environment and the wash down of vessels, facilities, and equipment used in the response. “Incidental discharges” as addressed by this policy, do not require additional permits and do not constitute a prohibited discharge. See 33 CFR 153.301 and 40 CFR 300.

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Criteria

During spill response operations, mechanical recovery of oil is often restricted by a number of factors, including the recovery system's oil/water recovery rate, the type of recovery system employed and the amount of tank space available on the recovery unit to hold recovered oil/water mixtures. In addition, the longer oil remains on or in the water, the more it mixes to form an emulsified mousse or highly mixed oil/water liquid, which sometimes contains as much as 70% water and 30% oil, thus consuming significantly more storage space. Decanting is the process of draining off recovered water from portable tanks, internal tanks, collection wells or other storage containers to increase the available storage capacity of recovered oil. When decanting is conducted properly most of the petroleum can be removed from the water.

The overriding goal of mechanical recovery is the expeditious recovery of oil from water. In many cases, the separation of oil and water and discharge of excess water is necessary for skimming operations to be effective in maximizing the amount of oil recovered and in minimizing overall environmental damages. Expeditious review and approval, as appropriate, of such requests is necessary to ensure a rapid and efficient recovery operation. In addition, such incidental discharges associated with mechanical recovery operations should not be considered decanting. In appropriate circumstances, the FOSC can pre-authorize incidental discharges because the discharges will be much less harmful to the environment than allowing the oil to remain in the water and be subject to spreading and weathering.

Therefore, the Southeast Louisiana Area Committee adopts the following policy in order to provide for an expeditious decanting approval process and provide clear guidance to the Unified Command, response contractors, and other members of the spill response community.

Oils Pre-Approved for Decanting and Associated Conditions

Pre-approval for on water decanting is authorized when pumping recovered oil and water ashore is not practical during the first 24-hours after initial spill discovery. Decanting authorization is granted for the oil products listed below.

All crude oils;

- Vacuum gas oil;
- Atmospheric gas oils;

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- Recycle oils not containing distillates;
- Bunker fuels;
- No. 6 fuel oils;
- Crude oils;
- Cutter stocks; and
- Coker gas oils.

Decanting of the listed oils is preapproved if the following conditions are met:

- Pre-approval is for the first 24-hours after spill discovery. Decanting requests for all the remaining operational periods will need to be completed and submitted to the Unified Command. The RP must fill out the Southeast Louisiana Area Contingency Plan decanting request and seek Unified Command approval prior to any ad Southeast Louisiana Area Contingency Planditional decanting approvals from the second operational period on;
- The Unified Command must be notified within one hour of decanting being initiated; and
- The RP assures the Unified Command that they are quickly obtaining adequate oil storage and skimming capacity within the first 24 hours and the responding Primary Response Contractor (PRCs) are expeditiously getting sufficient storage and skimming capacity, if available (worst case discharges may exceed these resources throughout the region) to alleviate the need for prolonged decanting.

The following criteria found in the current Decanting Authorization Form must be complied with:

- All decanting shall be done in a designated “response area” within a collection area, vessel collection well, recovery belt, weir area, or directly in front of a recovery system;
- Vessels employing sweep booms with recovery pumps in the apex of the boom shall decant forward of the recovery system;

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- Vessels not equipped with an oil/water separator should allow retention of oil help in internal or portable tanks before decanting commences;
- Containment boom needs to be deployed around the collection area, where feasible, to prevent loss of decanted oil or entrainment;
- Visual monitoring of the decanting shall be maintained at all times so discharges of oil in the decanted water are detected promptly;
- Where feasible, decant ahead of an operating skimmer recovery system so decanting occurs inside an enclosed boomed area; and
- Unified Command can revoke the pre-approval at any time if the above conditions are not met.

Shore-side container decanting (i.e. vacuum truck, portable tanks, etc.) is not authorized for pre-approval under this policy. Decanting in areas where vacuum trucks, portable tanks, or other collection systems are used for shore cleanup will be subject to filling out the decanting form contained in this policy prior to authorization and must comply with the same rules as vessels.

Oils Requiring Approval by Unified Command Prior to Decanting

During a response, when decanting has not been pre-approved for lighter oils, which are not listed above, it will be necessary for response contractors or the responsible party to request from the Unified Command written authority to decant while recovering oil so that the response operations do not cease or become impaired. The Unified Command will consider each request for decanting of lighter oils on a case-by-case basis. Prior to approving decanting, the Unified Command should evaluate the potential effects of weather including the wind and wave conditions, the quantity of oil spilled and the type of oil as well as available storage. The Unified Command should also take into account that recovery operations as enhanced by decanting will actually reduce the overall quantity of pollutants in a more timely and effective manner to facilitate cleanup operations.

The following criteria should be considered by the Unified Command in determining whether to approve decanting unless circumstances dictate otherwise:

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- All decanting should be done in a designated “Response Area” within a collection area, vessel collection well, recovery belt, weir area, or directly in front of a recovery system;
- Vessels employing sweep booms with recovery pumps in the apex of the boom should decant forward of the recovery pump;
- All vessels, motor vessels, and other equipment not equipped with an oil/water separator should allow retention time for oil held in internal or portable tanks before decanting commences;
- When deemed necessary by the UC or the response contractor a containment boom will be deployed around the collection area to minimize loss of decanted oil or entrainment.
- Visual monitoring of the decanting area shall be maintained so that discharge of oil in the decanted water is detected promptly; and
- Decanting in areas where vacuum trucks, portable tanks, or other collection systems are used for shore cleanup will be subject to the same rules as vessels.

The response contractor or responsible party will seek approval from the UC prior to decanting by presenting the UC with a brief description of the area for which decanting approval is sought, the decanting process proposed, the prevailing conditions (wind, weather, etc.) and protective measures proposed to be implemented. The UC will review such requests promptly and render a decision as quickly as possible. FOSC authorization is required in all cases and in addition SOSC authorization is required for decanting activities in state waters.

Other activities related to possible oil discharges associated with an oil spill event such as actions to save a vessel or protect human life which may include such actions as pumping bilges on a sinking vessel are not covered by this policy.

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Oil Spill Decanting Authorization Form

The federal and state OSCs, hereby approve the use of decanting as a means of expediting the recovery of oil during the following spill cleanup operations
Date(s) Approval Effective:
Name of Spill Incident:
Federally Defined Response Area:
Name of Requester:
Location and description of proposed decanting operation: (continue on additional pages if necessary):

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The decanting operation must meet the following conditions:

1. All decanting should be done in a designated "Response Area" within a collection area, vessel collection well, recovery belt, weir area, or directly in front of a recovery system.
2. Vessels employing sweep booms with recovery pumps in the apex of the boom shall decant forward of the recovery pumps.
3. Vessels not equipped with an oil/water separator should allow retention time for oil held in internal or portable tanks before decanting commences.
4. Containment boom must / need not (circle one) be deployed around the collection area to prevent loss of decanted oil or entrainment.
5. Visual monitoring of the decanting shall be maintained at all times so that discharge of oil in the decanted water is detected promptly.
6. Decanting in areas where vacuum trucks, portable tanks, or other collection systems are used for shore cleanup will be subject to the same rules as a vessel.
7. Additional Comments:

SIGNATURE:

Date:

Federal OSC

SIGNATURE:

Date:

State OSC

Note: When verbal authorization is given, a copy of this form must be immediately expedited to the requester (must be a person of authority in the response organization) to ensure that the conditions and limitations are clearly understood by all parties.

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Decision Memo

Decanting Approval Plan

Name of Spill Incident:
Federally defined response area:
Effective date(s) of approval:
Current storage capacity on site:

Name of Requestor:
Product Spilled:

The Federal and State OSC's hereby approve the use of decanting as a means of expediting the recovery of oil during the above mentioned spill response operation. The following approval provides authority to conduct decanting of oil so that response operations do not cease or become impaired. FOSC authorization is required in all cases, and SOSC authorization is required for decanting within state waters. The OSC should acknowledge that recovery operations enhanced by decanting will actually reduce the overall quantity of pollutants in a more timely and effective manner to facilitate clean-up operations.

The following criteria should be followed in order for decanting to proceed in an efficient manner:

- 1) All decanting should be done in a designated "response area" within a collection area, vessel collection well, recovery belt, weir area, or directly in front of a recovery system.
- 2) Vessels employing sweep booms with recovery pumps in the apex of the boom should decant forward of the recovery pump.
- 3) All vessels, motor vehicles, and other equipment not equipped with an oil/water separator would allow retention time for oil held in internal or portable tanks before decanting commences.
- 4) A containment boom must / need not (circle one) be deployed around the collection area to minimize loss of the decanted oil or entrainment.
- 5) Visual monitoring of the decanting area shall be maintained so that discharges of oil in the decanted water are detected promptly.
- 6) Tanks used for decanting will be tested prior to use to ensure there are no contaminants from previous activities and that the water is safe to discharge back into the environment.
- 7) Settling times for oil water separation on board skimmers is estimated to be:
- 8) Additional conditions:

Approval: (Check one) Yes _____ No _____

Environmental Unit Leader (Planning) _____

FOSC _____

SOSC _____

Reason for disapproval:

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Chapter 9000
Appendix F
Oil Spill Best
Management
Practices

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Oil Spill Best Management Practices

Open Water Habitats

Booming

Booms are flexible floating barriers that are placed on the surface of the water to control the spread of spilled oil and to protect ecologically sensitive areas. Oil spill containment booms generally have five operating components- flotation chamber, freeboard, skirt, tension member, and ballast. The overall height of the boom is divided between the freeboard, the portion above the surface of the water, and the skirt, the portion below the water surface. Boom heights range from approximately 6 inches to over 90 inches, to address different types of water bodies and environmental conditions. Flotation attached to the freeboard and ballast (e.g., chain, weights) attached to the skirt enable the boom to float upright in the water. In other words, the plane created by the boom is perpendicular to that of the surface of the water. Boom is typically made up of 50-foot sections. The sections, and the connectors between sections, provide flexibility both in boom length and shape. Depending on the specific booming strategy employed, boom is towed through the water, anchored in place (typically in water less than 100 ft deep), or attached to the shoreline or to a vessel.

There are four basic booming strategies contained in the Southeast Louisiana Area Contingency Plan: (1) Containment, where boom is used to contain and concentrate the oil until it can be removed; (2) Deflection, where boom is used re-direct floating oil away from sensitive areas; (3) Diversion, where boom is used to re-direct floating oil toward recovery sites that have slower flow, better access for equipment and personnel, and a way to remove the oil; and (4) Exclusion, where boom is used to keep oil out of a sensitive area. In addition, booming strategies can be used in combination with each other. Boom may also be used to enhance recovery of oil by skimmers (described in greater detail below). During a response, boom is typically in place for less than a week, depending on the spill. During that time, boom may be moved and repositioned to maximize its effectiveness at containing, excluding, diverting, or deflecting oil.

Boom can potentially be used in all open water habitats, depending on environmental conditions, but boom placement may be constrained by water depth and boat accessibility (except in the case of very small bodies of water,

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where boom may be deployed by hand). Boom may come in contact with the substrate in shallow water or along shore-lines. However, this is undesirable in most cases as typical floating boom that comes into contact with the substrate is likely to lay flat and lose its ability to contain oil. Boom designed for this specific purpose (i.e., to maintain containment after coming into contact with the substrate), known as intertidal or tidal seal boom, may be used for oil containment along shorelines. Like other boom, intertidal boom floats up and down over tidal cycles. However the skirt is replaced by one or two continuous tubes filled with water, which forms a seal with the substrate. As a result, a vertical plane is maintained by the boom attached to the shoreline typically comes in contact with substrate along shorelines for only a short distance, usually less than 10 feet, depending on the slope of the shoreline. In addition to shallow water depths, the effectiveness of booming strategies can be significantly reduced by wind, currents, waves, and the presence of large quantities of floating debris. For maximum boom effectiveness, the depth of the water should be at least 5 times the draft of the boom. Once deployed, boom is routinely checked and repositioned by response personnel using small boats to maximize its effectiveness in changing environmental conditions.

Removal of Floating Oil- Sorbents

The objective of this response is to remove floating oil by allowing it to adhere to pads or rolls made of oleophilic material. The dimensions of sorbent pads are typically 2 feet by 2 feet. Sorbent rolls are approximately the same width as pads and may be 100 ft long. The use of sorbents to remove floating oil is different from the use of skimmers in two ways: (1) the use of sorbents is a passive oil collection technique that requires no mechanized equipment, whereas skimmers may be attached to active vessels for oil collection and (2) sorbents are left temporarily in the affected environment to adsorb oil in a specific locale, whereas skimmers may transit in order to collect oil in a broader area.

Sorbents are most likely to be used to remove floating oil in near shore environments that contain shallow water. They are often used as a secondary method of oil removal following gross oil removal, such as skimming. Sorbents may be used for all types of oil, lighter oils absorb into the material and heavier oils adsorb onto the surface of sorbent material, requiring sorbents with greater surface area. Retrieval of sorbent material is mandatory, as well as at least daily monitoring to check that sorbents are not adversely affecting wildlife or breaking apart after lengthy deployments. However, sorbent materials generally do not remain in the environment for longer than one day.

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Removal of Floating Oil- Skimmers

The object of this response action is to recover floating oil from the water surface using mechanized equipment known as skimmers. There are numerous types or categories of skimming devices, including weir, centrifugal, submersion plane, and oleophilic. (1) Weir Skimmers use gravity to drain oil from the water surface into a submerged holding tank. Once in the holding tank, oil may be pumped away to larger storage facilities. (2) Centrifugal (also known as vortex) skimmers create a water/oil whirlpool in which the heavier water forces oil to the center of the vortex. Once in the center, oil may be pumped away from the chamber within the skimmer. (3) Submersion plane skimmers use a belt or inclined plane to push the oil beneath the water surface and toward a collection well in the hull of a vessel. Oil is scraped from the surface or removed by gravity and then flows upward into a collection well where it is subsequently removed with a pump. (4) Oleophilic (i.e., having an affinity for oil) skimmers may take on several forms (e.g., disc, drum, belt, rope, brush), but the general principle of oil collection remains the same; oil on the surface of the water adheres to a rotating oleophilic surface. Once oil has adhered to the surface it may be scraped off into containers or pumped directly into larger storage tanks.

Skimmers are placed at the oil/water interface to recover, or skim, oil from the water surface. Skimmers may be operated independently from shore, be mounted on vessels, or be completely self-propelled. To minimize the amount of water collected incidental to skimming oil, booming may be used in conjunction with skimming to concentrate the floating oil in a wedge at the back of the boom, which provides a thick layer of oil to the skimmer head.

In shallow water, hoses attached to vacuum pumps may be used instead of other skimming devices described earlier in this section. Oil may be removed from the water surface using circular hose heads (4 to 6 inches in diameter); however, this is likely to result in the intake of a large water-to-oil ratio and inefficient oil removal. Inefficient oil removal of this kind may also result in adverse effects to organisms in the surrounding water. Instead, flat head nozzles, sometimes known as “duckbills” are often attached to the suction end of the hose in order to maximize the contact between the oil and vacuum, minimizing the amount of water that is removed from the environment. Duckbills (very much like an attachment to a vacuum cleaner) are typically 18 inches or less in width and less than 2 inches in height. In other words, duckbills are relatively small and designed for maximizing the amount of oil removed from the water surface relative to the volume of water removed. Vacuum hoses may also be attached to small, portable skimmer heads to recover oil they have collected. Adequate storage for recovered oil/water mixtures, as well as suitable transfer capability,

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must be available. Recovery systems that use skimmers are often placed where oil naturally accumulates: in pockets, pools, or eddies.

Skimming can be used in all water environments (weather and visibility permitting) for most oils. The presence of large waves, strong currents, debris, seaweed, kelp, as well as viscous oils, will reduce skimmer efficiency.

Decanting

Efforts are made to minimize the amount of water collected during skimming (as discussed above). However, the collection of water, in addition to oil, may be a reality under some circumstances. Limited storage capacity for oil and water collected through skimming may constrain a response and the removal of floating oil. Decanting is a procedure that can help maximize the use of temporary storage capacity. When decanting is not used, storage limitations may necessitate that the removal of floating oil, either by skimming or vacuuming, is ceased until more storage is available. Decanting is the process of draining off recovered water from portable tanks, internal tanks, collection wells, or other storage containers to increase the available storage capacity for recovered oil. The liquid in the tanks is allowed to sit for a sufficient period of time to permit oil to float to the top of the tanks. Water is then drained from the bottom of the tank (stopping in time to retain most of the oil). The water removed from the bottom of the tank is discharged back into the environment, usually in front of the skimmer or back into a boomed area. When decanting is conducted properly, minimal oil is discharged back into the environment. The decanting process is monitored visually to ensure prompt detection of oil discharges in decanted water and that water quality standards set for the in the Clean Water Act are not violate.

Decanting may be allowed because of storage limitations; however, it may not be permitted in all cases. In these cases, the Southeast Louisiana Area Committee Decanting Policy addresses “incidental discharges” associated with oil spill response activities. Incidental discharges include, but are not limited to, the decanting of oily water, oil and oily water returns associated with runoff from vessels and equipment operating in a oiled environment and the wash down of vessels, facilities, and equipment used in the response. Incidental discharges, as addressed by this policy, do not require additional permits and do not constitute a prohibited discharge. See 33 CFR Part 153.301 and 40 CFR Part 300. However, the Southeast Louisiana Area Contingency Plan advises the FOSC to consider and authorize the use of decanting on a case-by-case basis, after an evaluation of the environmental tradeoffs of allowing oil to remain in the environment (because of storage limitations) or discharging decanted water. The response contractor or the responsible party will seeks approval from the FOSC/ Unified Command prior to decanting by presenting the Unified Command with a brief

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description of the area in which decanting approval is sought, the decanting process proposed, the prevailing conditions (wind, weather, etc.) and protective measures proposed to be implemented. The FOSC will review such requests promptly and render a decision as quickly as possible. FOSC authorization is required in all cases and, in addition, the SOSC authorization is required for decanting activities in state waters.

The Southeast Louisiana Area Committee Decanting Policy can be found in Chapter 9000, Appendix E.

In-Situ Burning

The objective of in-situ burning is to remove oil from the water surface or habitat by burning it in place, or in situ. Oil floating on the water surface is collected into slicks a minimum of 2-3 mm thick and ignited. The oil is typically collected in fire-resistant boom that is towed through the spill zone by watercraft, or collected by natural barriers such as the shore. Although in-situ burning may be used in any open water environment, the environment dictates the specific procedure employed in a given burn. For example, in offshore and near shore marine environments, bays and estuaries, large lakes and large rivers a boom may be towed at 1 knot or less during the burning process in order to maintain the proper oil concentration or thickness. In rivers and small streams, oil carried by currents may be collected and concentrated in stationary boom attached to shoreline or other permanent structures (e.g., pilings). Wind or mechanically generated currents (known as herding) may be used to collect and concentrate oil along the shoreline or in a stationary boom attached to the shoreline.

Once an oil slick is sufficiently thick, and external igniter is used to heat the oil, generating enough vapors above the surface of the oil to sustain a burn. It is these vapors rather than the liquid oil on the water surface, that actually burn. When enough oil burns, to the point that the remaining oil layer is less than 1-2 mm thick, the fire goes out. The fire is extinguished at this oil thickness because the oil slick is no longer sufficiently thick to provide insulation from the cool water. This insulation is necessary to sustain the heat that produced the vapors, which are subsequently burned. The small quantity of burn residue remaining in the boom is then manually recovered for disposal.

In-situ burning generated a thick black smoke that contains primarily particulates, soot, and various gases (carbon dioxide, carbon monoxides, water vapor, nitrous oxides, and PAHs). The components of the smoke are similar to those of car exhaust. Of these smoke constituents, small particles less than 10 microns in diameter, known as PM-10, (which can be inhaled deeply into the lungs) are considered to pose the greatest risk to humans and nearby wildlife. For this

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reason, the In-Situ Burn Policy does not allow for pre-approval of in-situ burning within 3 miles of a population, defined as >100 people per square mile. All other areas are considered on a case-by-case basis. Decisions to burn or not to burn oil in areas considered case-by-case are made on the basis of the potential for humans to be exposed to the smoke plume, and pollutants associated with it. PM-10 exposure is generally limited to 150 micrograms per cubic meter averaged over a 24-hour period. Smoke plume modeling is done to predict which areas might be adversely affected. In addition, in-situ burning responses require downwind air monitoring for PM-10. Aerial surveys are also conducted prior to initiating a burn to minimize the chance that concentrations of marine mammals, turtles, and birds are not in the operational area and affected by the response. SMART (Special Monitoring for Advanced Response Technologies) protocols are used. They recommend that sampling is conducted for particulates at sensitive downwind sites prior to the burn (to gather background data) and after the burn has been initiated. Data on particulate levels are recorded and the Scientific Support Team forwards the data and recommendations to the Unified Command.

It is possible for as much as 95% of the oil contained in a boom to be burned, depending on the thickness of the initial layer of oil and whether it is possible to ignite the oil. Burning drastically reduced the requirement for waste storage and disposal. Weathered and emulsified oils that contain more than 50% water are extremely difficult to ignite. Therefore, it is important to make the decision to burn within 24-48 hours of the spill. The Southeast Louisiana Area Committee requires that tradeoffs between the effected of the emissions produced from in-situ burning, such as PAHs, and the contamination that may result from floating oil or oil that washes ashore, are carefully weighed in making the decision to conduct and in-situ burn.

The Southeast Louisiana Area Committee In-Situ Burn Policy can be found in Chapter 9000, Appendix C.

Chemical Dispersion of Floating Oil

The objective of chemical dispersion is to reduce the impact to sensitive shoreline habitats and animals that use the water surface by chemically dispersing oil into the water column. Dispersants are chemicals that reduce the oil- water interfacial tension, thereby decreasing the energy needed for the slick to break into small droplets and mix into the water column. Specially formulated products containing surface-active agents (surfactants) are sprayed (generally at concentrations of 2-5% by volume of the oil) from aircraft or boats onto the slick. Agitation from wind and waves is required to achieve dispersion. Depending on the level of energy, very small droplets of oil (10-100 microns in diameter) are

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mixed in the upper meter of the water column creating a sub-surface plume. This plume of dispersed oil droplets rapidly (within hours) mixes and expands in three dimensions (horizontal spreading and vertical mixing) down to as much as 10 meters below the surface. As a result of this mixing, oil concentrations decrease rapidly from the initial peak concentrations, for example from 10 or 100 ppm down to 1 ppm or less within hours to a day. Dispersion of oil and actual measurements of dispersed oil concentrations have been conducted and studied in several field studies. (Cormack and Nichols 1977, McAuliffe *et al.* 1980, McAuliffe *et al.* 1981, Lichtenthaler and Daling 1985, *Brandvick et al.* 1995, Walker and Lunel 1995, Coelho *et al.* 1995). *Dispersed* oil concentrations were generally between 1 ppm and 4 ppm within 1 hour after application of the dispersant in all of these studies.

Dispersing oil changes the trajectory of the oil plume from onshore to along-shore, as dispersed oil is no longer transported by the wind. Therefore, oil dispersion may help protect sensitive shoreline environments, as wind usually is the dominant environmental factor that carried floating oil ashore to strand. Dispersants and dispersant applications are rarely 100% effective, however, so some oil will likely remain floating on the water surface.

Due to the relatively short window of opportunity in which oil may be dispersed effectively, the decision to use and deployment of this response technique are time-critical. In order to be used on a spill, a dispersant must be listed on the National Contingency Plan Product Schedule maintained by the U.S. Environmental Protection Agency.

The Southeast Louisiana Area Committee Dispersant Use Policy can be found in Chapter 9000, Appendix D.

Barriers, Berms, and Underflow Dams

The objective of barriers, berms, and underflow dams is to prevent entry of oil into a sensitive area or to divert oil to a collection area. A physical barrier is placed across an area to prevent moving oil from passing. Oil may be removed using sorbent material (placed in the water where oil is trapped by the barrier), skimmers or vacuums. Barriers can consist of earthen berms, filtered fences, boards or other solid barriers. Constructing berms may take considerable time and resources. The length of time needed to construct berms and potential for negative impact to ecosystems caused by berms should be taken into account before deciding to construct them. This response is more likely to be implemented in shallow and small water bodies than deep ones. Earthen berms are fortified with sandbags or geotextile fabric (fabric or synthetic material that enhances water movement and retards soil movement), to minimize the amount

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of siltation that may be caused as a result of the structure. Silt fences and settling ponds (or a series of them) are used to contain any suspended sediments that may be mobilized in the water while the berm is being constructed in place or being removed. Stream barriers may be removed using manual or mechanical means, or both, depending on the accessibility of the site, the size of the structure and stream and sensitivity of the area to the use of heavy machinery.

If it is necessary for water to pass the barrier because of water flow volume or down-stream water needs, underflow dams (for low flow rates) can be used. Underflow dams contain oil with a solid barrier (e.g., boards, earthen berms) at the water level, while a submerged pipe (e.g., PVC or opening along the bottom of the barrier) allows some water to flow beneath and past the barrier. This response is used in small rivers, streams, and drainage ditches or at the entrance to shallow sloughs when the flow of oil threatens sensitive habitats. The importance of maintaining water quality and sufficient flow downstream of barriers is recognized (this response is often used to protect sensitive habitats that are located downstream of the barrier), so these features of affected habitats are monitored.

Vegetation Cutting

The objective of vegetation cutting is the removal of oil trapped in the canopy of kelp beds, to prevent the oiling of wildlife or remobilization of trapped oil. Thick layers of oil may adhere to kelp fronds or collect under vegetation canopies. The upper 1 to 2 feet of the vegetation canopy is cut away by hand or with a mechanical harvester. The oiled vegetation cuttings are removed for disposal. Trapped tar balls in the vegetation are freed and can be manually collected or flushed to a collection site. Vegetation cutting is used when a large quantity of oil is trapped in the vegetation canopy and the oil poses a risk to sensitive wildlife using the kelp habitat or when the remobilization of oil to other adjacent sensitive environments is likely to occur. Resource experts should be routinely consulted prior to vegetation cutting activities.

Shoreline Habitats

The action being analyzed in the biological assessment is comprised of a variety of methods, each of which may be further subdivided into two or more variations. While the effect of each response, and each variation thereof, may be discussed separately, they have been consolidated in a similar process to that followed in the consolidation of shoreline types. For the purpose of this analysis, it makes sense, both in terms of continuity and succinctness, to consolidate response methods that are similar in terms of (1) the habitats in which they are used (e.g., sand beaches, rocky shorelines), (2) the type of effects that may

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potentially result from them (e.g., increases in water temperature, siltation) and (3) the overall activities associated with each (e.g., boat activity, use of machinery). Each response is described below. Variations of each response are included. While variations of a given response are not typically expected to result in different effects from those described for the response, the inclusion of their descriptions is expected to increase the clarity of this document. Expectations, in which a variation of a response is expected to result in different or magnified effects to listed species, are noted and discussed in the *Effects Analysis* section.

Removal of Surface Oil

The objective of this response method is to remove stranded oil on the shoreline while removing minimum amount of sediment. Collected oil is placed in bags or containers and removed from the shoreline. No mechanized machinery is used, with the possible exception of All Terrain Vehicles (ATVs) that may be used to transport containers of collected oil to a staging area for retrieval. ATVs are generally used on sand beaches and are restricted to transiting outside of the oiled areas along the upper part of the beach. The techniques used in the removal of surface oil can be used on most shoreline types, but they are most effective on sand or gravel beaches. Generally, removal of surface oil is not recommended on soft mud substrates where mixing oil deeper into the sediment might occur, unless this activity can take place from a boat when the substrate is under-water. It is most appropriate for light to moderate oiling by medium to heavy oils. Light oils such as gasoline and diesel rapidly evaporate and spread out to very thin layers and are not easily picked up. Removal of surface oil is not recommended for mud flats, because of the potential for mixing the oil down into the soft sediments. For similar reasons, removal of surface oil is typically only used along the edges of sheltered vegetated low riverbanks and marshes, and must be closely monitored.

Best Management Practices for Removal of Surface Oil

- Removal of surface oil may be used on all shoreline types with the exception of tidal flats; not recommended for these shorelines because of the likelihood of mixing oil deeper into the sediments.
- Clean-up should commence after the majority of oil has come ashore, unless significant burial (on sand beaches) or remobilization is expected; minimize burial and/or remobilization by conducting cleanup between tidal cycles.
- Minimize the amount of sediment removed with the oil.

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- Minimize foot traffic through oiled areas on non-solid substrates (sand, gravel, dirt, etc) to reduce the likelihood that oil will be worked into the sediment.
- Restrict foot traffic over sensitive areas* (shellfish beds, algal mats, bird nesting areas, dunes, etc.) to reduce the potential for mechanical damage.
- Shoreline access to specific areas* may be restricted for periods of time to minimize the impact of human presence/excessive noise on nearby sensitive biological populations* (bird nesting, marine mammal pupping, breeding, fish spawning, etc.)
- Separate and segregate any contaminated wastes generated to optimize waste disposal stream and minimize what has to be sent to hazardous waste site.
- Establish temporary upland collection sites for oiled waste materials for large spill events; collection sites should be lined with asphalt pad and surrounded by berms to prevent secondary contamination from run-off.
- Ensure safety of responders by maintaining proper span of control under experienced crew bosses.

*Operations Section will be advised by Planning Section (Environmental Unit)

Here variations of this response exist: (1) manual removal of oil, (2) passive collection of oil (sorbents) and (3) vacuum removal of oil. A brief description of each variation follows.

Manual Removal of Oil

The objective of this variation of the removal of surface oil is to remove oil by using tools such as hands, rakes, shovels, and other manual means. Collected oil is placed in bags or containers and removed from the shoreline. This variation of the response can be used on most shoreline types except for tidal flats where the threat of mixing oil deeper into sediments as a result of foot traffic is typically greater than the benefits gained through use of this variation. Manual removal of oil is recommended for the use on (1) sheltered rocky shorelines and man-made structures, and (2) sheltered rubble slopes. It is conditionally recommended on (1) exposed rocky shorelines, (2) sand beaches, (3) gravel beaches, (4) sheltered vegetated low banks, and (5) marshes.

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Passive Collection of Oil

This variation of the removal of surface oil allows for oil adsorption onto oleophilic material placed in the intertidal zone or along a riverbank. Sorbent material is placed on the surface of the shoreline substrate, allowing it to adsorb oil as it is released by tidal wave action. The sorbents most typically used for medium to heavy oils are snares (like cheerleader pompoms) made of oleophilic material; snares are attached at 18 inch intervals along a rope that can be tided, anchored, or staked along the intertidal shoreline. As the snares are moved about by tidal or wave action, they also help remobilize oil by rubbing across rock surfaces. Snare lines are monitored on a regular basis for their effectiveness at picking up oil, and to collect and replace oiled sorbents with new material. This method is often used in conjunction with other techniques (e.g., flushing, booming) to collect floating oil for recovery. Passive collection of oil using sorbents is recommended for (1) sand beaches, (2) gravel beaches, (3) sheltered rocky shores and man-made structures, (4) sheltered rubble slopes, (5) sheltered vegetated low banks, and (6) marshes. It is conditionally recommended on (1) exposed rocky shores and (2) tidal flats.

Best Management Practices for Passive Collection of Oil

Passive collection of oil using sorbent material may be used on all shoreline types, but is not useful with light to moderate oiling.

Continually monitor and collect passive sorbent material deployed in the intertidal zone to prevent it from entering the environment as non-degradable, oily debris.

Monitor passive adsorbents placed in the mid- or lower intertidal zone for potential entrapment of small crustaceans; coordinate with the Environmental Unit for corrective actions if entrapment is observed.

Vacuum Removal of Oil

The objective of this variation of the removal of surface oil is to remove free oil that has pooled on the substrate. It entails the use of a vacuum unit with a suction head to recover free oil. Equipment can range in size from small portable units that fill individual 55-gallon drums to large “supersuckers” that are truck mounted and have the capacity to lift rocks. Supersuckers are primarily used when circumstances (e.g., the length or number of hoses used) necessitate that suction capacity is great. In other words, suction is reduced with increasing hose length and with a number of the hoses used. In these situations, additional suction capacity may be necessary to make up for these losses. This system can also be used with water spray system to flush oil towards the suction head. This response variation is used when free, liquid oil is stranded on the shoreline (usually along the high-tide line) or is trapped in vegetation that is readily

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accessible. Vacuum removal of oil is not recommended on any shoreline habitat. It is conditionally recommended on (1) exposed rocky shores, (2) sand beaches, (3) gravel beaches, (4) sheltered rocky shores and man-made structures; (5) sheltered rubble slopes, (6) sheltered vegetated low banks, and (7) marshes.

Best Management Practices for Vacuum Removal of Oil

- Vacuum removal of oil may be used on any shoreline type where liquid oil has pooled with the exception of tidal flats; not recommended for these shorelines because of poor access and potential for mixing oil deeper into the sediments.
- Closely monitor vacuum operations in wetlands; site specific restrictions* may be required to minimize impact to marsh plant root systems which could lead to erosion.

*Operations Section will be advised by Planning Section (Environmental Unit).

Oiled Debris Removal

The objective of this response is the removal of oiled debris (organic and man-made) from the shoreline. Debris (e.g. Seaweed, trash, logs) is removed when it becomes heavily contaminated and when it is either a potential source of chronic oil release, an aesthetic problem or a source of contamination for organisms on the shoreline. If time and resources permit, un-oiled, man-made debris (e.g., trash, mooring lines, etc.) may be removed or placed above the high tide line prior to oil reaching a shoreline (based on oil spill trajectory) in order to minimize the amount of oiled debris generated by the spill. Oiled debris removal is recommended for (1) sand beaches, (2) gravel beaches, (3) sheltered rocky shores and man-made structures and (4) sheltered rubble slopes. It is conditionally recommended (1) exposed rocky shores, (2) tidal flats, (3) sheltered vegetated low banks, and (4) marshes.

Best Management Practice for Oiled Debris Removal

- Removal of oily debris may be used on all shoreline types; removal of oily debris from shorelines with soft mud substrates (mudflats, marshes) is usually restricted to debris stranded at the high tide line where debris can be recovered without grinding oil into the substrate.
- Minimize foot traffic through oiled areas on non-solid substrates (sand, gravel, dirt, etc.) to reduce the likelihood that oil will be worked into the sediment.

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- Minimize quantity of oiled vegetative debris removed by concentrating on debris that is moderately to heavily oiled; leave lightly oiled and clean stranded seaweed and wood debris in place to provide habitat for small invertebrates and to help stabilize shoreline.
- Restrict foot traffic over sensitive areas* (shellfish beds, algal mats, bird nesting areas, dunes, etc.) to reduce the potential for mechanical damage.
- Shoreline access to specific areas* may be restricted for periods of time to minimize impact of human presence/excessive noise on nearby sensitive biological populations* (bird nesting, marine mammal pupping, breeding, fish spawning, etc.).
- Separate and segregate any contaminated wastes generated to optimize waste disposal stream and minimize what has to be sent to hazardous waste site.
- Establish temporary upland collection sites for oiled waste materials for large spill events; collection sites should be lined with asphalt pad and surrounded by berms to prevent secondary contamination from run-off.
- Ensure safety of responders by maintaining proper span of control under experienced crew bosses.

* Operations Section will be advised by Planning Section (Environmental Unit).

Trenching/Recovery Wells

The objective of trenching or the use of recovery wells is to remove subsurface oil from permeable substrates. Trenches or wells are dug down to the depth of the oil (or water table) to intercept oil migrating through the substrate. The oil collected in the trench or well is then recovered by vacuum pump or skimmer, and disposed of offsite. The oil must be liquid enough to flow at ambient temperatures. Water flooding or flushing the substrate can be used to speed up oil migration into the trench or well. If the trench or the well is not deep enough to reach the water table, the bottom must be lined with plastic to prevent oil penetrating deeper into the sediment. Trenches are not dug in the lower portions of the beach where attached plants and organisms may be abundant.

Trenching and recovery wells are conditionally recommended for (1) sand beaches, (2) gravel beaches (pebble- to-cobble-size substrate) and (3) sheltered vegetated low banks.

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Best Management Practices for Trenching and the Use of Recovery Wells

- Trenching and recovery wells may be used on sand and gravel shorelines with grain size ranging from fine sand to pebble-size gravel.
- Line the bottom of trenches that do not reach the water table (dry) with plastic to prevent the collected oil from penetrating deeper into the substrate.
- Restrict trenches from the lower intertidal zone where attached algae and organisms are abundant.
- Collapse of fill in trenches/well when response action is completed; ensure sides and bottom of trenches are clean before collapsing.
- Minimize foot traffic through oiled areas on non-solid substrates (sand, gravel, dirt, etc.) to reduce the likelihood that oil will be worked into the sediment.
- Restrict foot traffic over sensitive areas* (shellfish beds, algal mats, bird nesting areas, dunes, etc.) to reduce the potential for mechanical damage.
- Shoreline access to specific areas* may be restricted for periods of time to minimize impact of human presence/excessive noise on nearby sensitive biological populations* (bird nesting, marine mammal pupping, breeding, fish spawning, etc.).
- Separate and segregate any contaminated wastes generated to optimize waste disposal stream and minimize what has to be sent to hazardous waste sites.
- Establish temporary upland collection sites for oiled waste materials for large spill events; collections sites should be lined with asphalt pad and surrounded by berms to prevent secondary contamination from run-off.
- Ensure safety of responders by maintaining proper span of control under experienced crew bosses.

*Operations Section will be advised by Planning Section (Environmental Unit)

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Removal of Oiled Sediment

The objective of this response is to remove oiled surface sediments. Oiled sediment is removed by either use of hand tools or by use of various kinds of motorized equipment. Oiled sediment removal is restricted to the supratidal and upper intertidal areas to minimize disturbance of biological communities in the lower intertidal and sub-tidal. After removal, oiled sediments are transported and disposed of offsite. New sediments are not typically transported to replace those that were removed; however, a variation of this response that includes sediment replacement (described below) is used for beaches with low natural replenishment rates or high rates of erosion. This method of cleanup is most effective when there is limited amount of oiled sediment that must be removed. Close monitoring is required so that the quantity of sediment removed, siltation, and the likelihood of erosion may be minimized in all cases. Such operations are generally restricted in fish spawning areas. Sensitive areas that are adjacent, and may be potentially affected by released oil sheens, must also be protected.

It should be noted that oiled sediment removal (and removal of adjacent sediment) may be used along riverbanks or other upland areas to prevent oil from leaching into the adjacent aquatic environment. For example, this may be necessary when a tank truck or rail car overturns and spills oil in an upland area adjacent to a stream. As a primary response, the source of oil in the environment, including the sediment and/or adjacent soil varies with the scale of the spill and the accessibility of the site; however, both manual and mechanized removal tools are used regularly. In areas that are prone to erosion, contaminated sediment and/or soil that is removed is typically replaced with clean sediment.

Typically, oiled sediment removal is conditionally recommended for (1) sand beaches, (2) gravel beaches, (3) sheltered rubble slopes, and (4) sheltered vegetated low banks.

Best Management Practices for Removal of Oiled Sediment

- Oiled sediment removal (without replacement) is used primarily on sand beaches not subject to high rates of erosion; small quantities of oiled sediment removal may be permitted on gravel beaches (pebble-to-cobble size gravel or riprap) and sheltered vegetated stream banks.
- Clean-up should commence after the majority of oil has come ashore, unless significant burial (sand beaches) or remobilization is expected; minimize burial and/or remobilization by conducting cleanup between tidal cycles.

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- Restrict sediment removal to supra and upper intertidal zones (or above waterline on stream banks) to minimize disturbance of biological communities in lower intertidal and subtidal zones.
- Take appropriate actions to protect nearby sensitive environments* (shellfish beds, nursery areas) from the effects of increased oil runoff/sheening or siltation by the proper deployment of booms, silt curtains, sorbents, etc.; monitor for effectiveness of protection measures.
- Minimize the amount of oiled sediment removed by closely monitoring mechanical equipment operations.
- Coordinate the locations of any temporary oiled sediment staging or storage sites near the shoreline*.
- Minimize vehicle traffic through oiled areas to reduce the likelihood that oil will be worked into the sediment and contamination carried off site by clean equipment.
- Restrict foot or vehicular traffic over sensitive areas* (shellfish beds, algal mats, bird nesting areas, dunes, etc.) to reduce the potential for mechanical damage.
- Shoreline access to specific areas* may be restricted for periods of time to minimize impact of human presence/excessive noise on nearby sensitive biological populations* (bird nesting, marine mammal pupping, breeding, fish spawning, etc.).
- Separate and segregate and contaminated wastes generated to optimize waste disposal stream and minimize what has to be sent to hazardous waste site.
- Establish temporary upland collection sites for oiled waste materials for large spill events; collection sites should be lined with asphalt pads and surrounded by berms to prevent secondary contamination from runoff.
- Ensure safety of responders by maintaining proper span of control under experienced crew bosses.

*Operations Section will be advised by Planning Section (Environmental Unit).

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Oiled Sediment Reworking

The objective of this variation of oiled sediment is to re-work oiled sediments to break up oil deposits, increase surface area and mix oxygen into deep subsurface oil layers; this activity exposes the oil to natural removal processes and enhances the rate of oil degradation. Oiled sediment is not removed from the beach. Instead, beach sediments are roto-tilled or otherwise mechanically mixed with the use of heavy equipment. The oiled sediments in the upper beach area may also be relocated to the mid-tidal portion of the beach. Relocation enhances natural clean-up during reworking by wave activity. This procedure is also known as surf washing, or berm relocation. Generally, sediment reworking is used on sand or gravel beaches where high erosion rates or low natural sediment replenishment rates are issues. Sediment reworking may also be used where remoteness or other logistical limitations make sediment removal unfeasible. Sediment reworking is not used on beaches near shellfish harvest or fish spawning areas because of the potential for release of oil or oiled sediments into these sensitive habitats. Sediment reworking is conditionally recommended for (1) sand beach and (2) gravel beach habitats.

Best Management Practices for Oiled Sediment Reworking

- Oiled sediment reworking (roto-tilling) breaks up oil crusts or aerates light surface oiling is used primarily on sand or mixed sand and gravel beaches, especially those prone to erosion.
- Berm relocation or surf washing may be used on sand, mixed sand and gravel, or gravel (pebble to cobble size) beaches exposed to at least moderate wave energy.
- Restrict roto-tilling to mid and upper intertidal zones to minimize disturbance of biological communities in lower intertidal and subtidal zones.
- Restrict berm relocation/surf washing in vicinity of sensitive environments* (shellfish beds, nursery areas, etc.) to prevent adverse effects from increased oil runoff/sheening or siltation.

*Operations Section will be advised by Planning Section (Environmental Unit).

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Oiled Sediment Removal with Replacement

The objective of this response variation is to remove oiled sediment and replace it with cleaned or new material. Oiled sediments are excavated using heavy equipment on the beach at low tide. After removal of the oiled sediment, new clean sediment of similar composition is brought in for replacement. The oiled sediment may also be cleaned and then replaced on the beach. The sediments are loaded into a container for washing. Cleansing methods include a hot water wash or physical agitation with a cleaning solution. After the cleansing process, the rinsed materials are returned to the original area. Cleaning equipment must be placed close to beaches in order to reduce transportation problems. This variation is conditionally recommended on (1) sand beaches, (2) gravel beaches, and (3) sheltered rubble slopes, although the beaches must be exposed to wave activity so the replaces sediments can be re-worked into a natural distribution.

Best Management Practices for Oiled Sediment Removal and Replacement

- Oiled sediment removal (with replacement) is used primarily on sand, mixed sand and gravel, and gravel, and vegetated stream bank shorelines subject to high rates of erosion.
- Restrict sediment removal and replacement to supra and upper intertidal zones (or above waterline on stream banks) to minimize disturbance of biological communities in lower intertidal and subtidal zones.
- Take appropriate actions to protect nearby sensitive environments* (shellfish beds, nursery areas, etc.) from the effects of increased oil runoff/sheening or siltation by the proper deployment of boom, siltation curtains, sorbents, etc.; monitor for effectiveness of protection measures.
- Coordinate the locations of any temporary oiled sediment staffing or storage sites near the shoreline with the Environmental Unit.

*Operations Section will be advised by Planning Section (Environmental Unit).

Flushing with Ambient (temperature, salinity) Water

The objective of ambient water flushing is to remobilize oil stranded on surface substrate, as well as oil from crevices and rock interstices, to water's edge for collection. Water is pumped from hoses onto an oiled beach, beginning above

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the highest level where the oil is stranded and slowly working down to the water level. The flow of water remobilizes oil stranded on the surface sediments and flushed it down to water's edge. The remobilized oil is contained by boom and recovered for disposal. Increased water pressure may be needed to assist in the remobilization as the oil weathers and begins to harden on the substrate. Because of the potential for higher pressures to cause siltation and physical disruption of the softer substrates, flushing with higher pressure is restricted to rock or hard man-made substrates. Intake and outflow may range from 2-4 inches in diameter and, depending on the pump used, pump between 200 and 400 gallons of water per minute. Intake hoses are fitted with screens to minimize the extraction of debris, flora and fauna. Screen holes generally range from 0.25 inch to 1 inch in diameter, depending on the environment from which the water is being pumped. Intake hoses are propped off bottom using rebar in about 3 feet of water further minimize the amount of sediment and debris, and the number of organisms taken into the hose and pump.

Best Management Practices for Ambient Water Flushing

- Clean-up should commence after the majority of oil has come ashore, unless significant burial (sand beaches) or remobilization is expected; minimize burial and/or remobilization by conduction cleanup between tidal cycles.
- Protect sensitive environments* (shellfish bed, submerged aquatic vegetation, nursery areas, etc.) from the effects of increased oil run off by the proper deployment of booms, sorbents, etc.; monitor for effectiveness of protection measures.
- Restrict foot or vehicular traffic over sensitive areas* (shellfish beds, algal mats, bird nesting areas, dunes, etc.) to reduce the potential for mechanical damage.
- Shoreline access to specific areas* may be restricted for periods of time to minimize impact of human presence/excessive noise on nearby sensitive biological populations* (bird nesting, marine mammal pupping, breeding, fish spawning, etc.)
- Ensure safety of responders by maintaining proper span of control under experienced crew bosses.

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Flooding (Deluge)

The objective of this variation of ambient water flushing is to mobilize stranded oil from rock crevices and interstices. Ambient water is pumped through a header pipe at low pressure above and inshore from the fouled area of shoreline. The pipe is meant to create a sheet of water that simulates tidal washing over the affected area. Removing stranded oil may be particularly important when a more sensitive habitat is nearby and in danger of becoming fouled with oil after the intertidal zone is washed over the next tidal cycle, remobilizing the oil. The effects of flooding may also be desired when a spring tide has deposited oil above the normal high water mark or when the wave energy of the adjacent water is not great enough to sufficiently wash the affected area over the following tidal cycle. After oil has been loosened from the substrate it is collected and removed using a variety of mechanical, manual, and passive methods. Ambient water flooding is recommended for use on gravel beaches. Ambient water flooding is conditionally recommended for the following habitats: (1) sand beaches, (2) sheltered rocky shorelines and man-made structures, (3) sheltered rubble slopes, (4) sheltered vegetated low banks, and (5) marshes.

Best Management Practices for Ambient Water Flooding

- Ambient water flooding (deluge) could be used on all shoreline types with the exception of fine to coarse grained sand beaches. Use in this habitat could mobilize contaminated sediment into the environmentally sensitive subtidal zone or cause excessive siltation.
- Closely monitor flooding of shorelines with fine sediments (mixed sand and gravel, sheltered rubble, sheltered vegetative banks, marshes) to minimize excessive siltation or mobilization of contaminated sediments into the sub tidal zone.
- Ambient water flooding is not generally useful on exposed rocky shorelines or submerged tidal flats because these areas are naturally well flooded.

Ambient Water, Low-Pressure Flushing

The objective of this variation of ambient water flushing is to mobilize liquid oil that has adhered to the substrate or man-made structures, pooled on the surface, or become trapped in vegetation to the water's edge for collection. Low-pressure washing (<50 psi) with ambient seawater sprayed through hoses is used to flush oil to the water's edge for collection. Oil is trapped by booms and picked up with skimmers and sorbents. This variation may also be used in concert with ambient water flooding, which helps move the oil without the

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potential effects associated with higher water pressures. Low-pressure flushing is conditionally recommended for (1) exposed rocky shores, (2) sand beaches with coarser sediments (mixed sand and gravel), (3) gravel beaches, (4) sheltered rocky shorelines and man-made structures, (5) sheltered rubble slopes, (6) sheltered vegetated low banks, and (7) marshes.

Best Management Practices for Ambient Water, Low-Pressure Flushing

- Ambient water, low-pressure flushing could be used on all shoreline types with the exception of sand beaches (fine to coarse grained) and mud flats (exposed or sheltered).
- Flushing on exposed rocky shorelines may be hazardous to response personnel; ensure presence of adequate safeguards and monitoring to ensure personnel safety.
- Prevent pushing or mixing oil deeper into the sediment by not directing the stream of water directly into the oil; direct hoses to place stream of water above or behind the surface oil to create a sheet of water to remobilize and carry oil down the beach to a containment area for recovery.
- Closely monitor flushing of shorelines with fine sediment (mixed sand and gravel, sheltered rubble, sheltered vegetative banks, marshes) to minimize excessive siltation or contaminated sediments mobilization into the subtidal zone.
- Restrict flushing in marshes from boats or on shore above the high tide line during high tide to minimize mixing oil into the sediments or mechanically damaging the marsh plants.

Ambient Water, High-Pressure Flushing

The objective of this variation of ambient water flushing is to mobilize oil that has adhered to hard substrates or man-made structures to the water's edge for collection. It is similar to low-pressure washing except the water pressure may reach 100+ psi, and it can be used to flush floating oil or loose oil out of tide pools and between crevices on riprap. Compared to the lower pressure spray, high-pressure spray will more effectively remove oil that has adhered to rocks. Because water volumes are typically low, this response method may require the placement of sorbents directly below the treatment area or the use of a deluge to carry oil to the water's edge for collection. High-pressure flushing is conditionally recommended for (1) exposed rocky shores, (2) gravel beaches, particularly

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those consisting of cobble and boulder sized rocks, and riprap, (3) sheltered rocky shorelines and man-made structures, and (4) sheltered rubble slopes.

Best Management Practices for Ambient Water, High-Pressure Flushing

- Ambient water, high-pressure flushing may be used on rocky (exposed and sheltered) and riprap shorelines.
- Flushing on exposed rocky shorelines may be hazardous to response personnel; ensure presence of adequate safeguards and monitoring to ensure personnel safety.
- Prevent pushing or mixing of oil deeper into the riprap by not directing the stream of water directly into the oil; direct hoses to place stream of water above or behind the surface oil to create a sheet of water to remobilize and carry oil down to a containment area for recovery.
- If small volumes of high-pressure water are used to remobilize weathered oil from rocky surfaces, include larger volume of low-pressure water to help carry remobilized oil into containment area for recovery.

Warm Water, Moderate-Pressure Washing

The objective of warm water, moderate-pressure washing is to mobilize thick and weathered oil that has adhered to rock surfaces, prior to flushing it to the water's edge for collection. Seawater is heated (typically between the ambient temperature and 90 F) and applied to moderate pressure to mobilize weathered oil that has adhered to rocks. If the warm water is not sufficient to flush the oil down the beach, flooding or additional low or high pressure washing may be used to float the oil to the water's edge for collection. Oil is then trapped by boom and may be picked up with skimmers or sorbents.

Warm water, moderate-pressure washing is conditionally recommended for (1) exposed rocky shores, (2) gravel beaches (including riprap), and (3) sheltered rocky shorelines and man-made structures. One variation of the response exists: hot water, moderate-pressure washing (described below).

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Best Management Practices for Warm Water, Moderate-pressure Washing

- Warm water, moderate-pressure flushing may be used on heavily oiled gravel beaches, riprap and hard, vertical manmade structures such as seawalls, bulk-heads, and docks.
- Restricted use to certain tidal environments so that the oil/water effluent does not drain across sensitive low-tide habitats (damage can result from exposure to oil, oiled sediments and hot water).
- Flushing on exposed rocky shorelines may be hazardous to response personnel; ensure presence of adequate safeguards and monitoring to ensure personnel safety.
- If small volumes of warm water are used to remobilize weathered oil from rocky surface, include larger volume of ambient water at low-pressure to help carry remobilized oil into containment area for recovery.
- Clean-up should commence after the majority of oil has come ashore.
- Protect nearby sensitive environments* (shellfish beds, submerged aquatic vegetation, nursery areas, etc.) from the effects of increased oil runoff by the proper deployment of booms, sorbents, etc.; monitor for effectiveness of protection measures.
- Restrict foot traffic over sensitive areas* (shellfish beds, algal mats, bird nesting areas, dunes, etc.) to reduce the potential for mechanical damage.
- Shoreline access to specific areas* may be restricted to periods of time to minimize impact of human presence/excessive noise on nearby sensitive biological populations* (bird nesting, marine mammal pupping, breeding, fish spawning, etc.)
- Ensure safety of responders by maintaining proper span of control under experienced crew bosses.

*Operations Section will be advised by Planning Section (Environmental Unit).

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Hot Water Moderate-Pressure Washing

The objective of this variation of warm water, moderate-pressure washing is to dislodge and mobilize trapped and weathered oil from inaccessible locations and surfaces not amenable to mechanical removal, prior to flushing oil to water's edge for collection. Water heaters are mounted on offshore barges or on small land-based units. The water is heated to temperatures from 90 to 170 F, which is usually sprayed in small volumes by hand using moderate-pressure wands. Used without water flooding, this procedure requires immediate use of vacuums (vacuum trucks or supersuckers) to remove the oil/water runoff. With a deluge system, the oil is flushed to the water's edge for collection with skimmers or sorbents. This response is generally used when the oil has weathered to the point that even warm water at high pressure is ineffective for the removal of adhered oil, which must be removed due to the threat of continued release of oil or for aesthetic reasons. Hot water washing is conditionally recommended for (1) exposed rocky shores, (2) gravel beaches (specifically riprap), and (3) sheltered rocky shorelines and man-made structures.

Best Management Practices for Hot Water, Moderate- Pressure Washing

Hot water, moderate-pressure flushing is used only on heavily oiled hard, man-made structures such as seawalls, bulkheads, docks, and riprap; primarily for aesthetic purposes.

Restrict use to certain tidal elevations so that the oil/water effluent does not drain across sensitive low-tide habitats (damage can result from exposure to oil, oiled sediments, and hot water).

If small volumes of hot water are used to remobilize weathered oil from rocky surface, remobilize oil must be recovered using sorbent material at the base of the structure; or a second stream with ambient water can be used to flush the remobilized oil to the water's edge for recovery.

Vegetation Cutting

The objective of vegetation cutting is the removal of oiled vegetation attaches to shorelines to prevent the oiling of wildlife or remobilization of trapped oil. Thick layers of oil may adhere to plant leaves or pool on the substrate under a layer of overlapping plant leaves. The upper parts of the oiled plant are cut away using hand tools or "weed eater" type power tools. The oiled plant cuttings are raked up and removed for disposal. Any remaining oil pooled around the roots/stems can then be flushed out for recovery. These attached plants provide protective habitat

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to fish and invertebrate species, so cutting of this type will result in loss of habitat. Cut vegetation may or may not recover depending on the reproductive cycle of the plant and whether the plant roots are oiled or damaged in the cutting operation. Resource experts are routinely consulted prior to initiating vegetation cutting. This response method is generally used when large quantities of potentially mobile oil are no less destructive method to remove the oil. When conducted in marshes, boards are generally laid down for workers to walk; this distributes the worker's weight to prevent damage to plant root system and to avoid working oil deeper into the soft sediments. This response is conditionally recommended for (1) sheltered rocky shorelines, (2) gravel beaches, (3) sheltered rocky shorelines and man-made structures, (4) Sheltered rubble slopes, (5) sheltered vegetated low banks, and (6) marshes.

Best Management Practices for Vegetation Cutting

- Vegetation cutting may be used on marsh, rock, gravel (boulder/riprap) and vegetated riverbanks.
- Clean-up should commence after the majority of oil has come ashore.
- Minimize mechanical impacts on vegetation being cut by taking appropriate actions* to ensure continued health and survival of vegetative ecosystem.
- Minimize foot traffic through oiled areas on non-solid substrates (sand, gravel, dirt, etc.) to reduce the likelihood that oil will be worked into the sediment.
- Restrict foot traffic over sensitive areas* (shellfish beds, algal mats, bird nesting areas, dunes, etc.) to reduce the potential for mechanical damage.
- Shoreline access to specific areas* may be restricted for periods of time to minimize impact of human presence/excessive noise on nearby sensitive biological populations* (bird nesting areas, marine mammal pupping, breeding, fish spawning, etc.)
- Separate and segregate any contaminated wastes generated to optimize waste disposal stream and minimize what has to be sent to hazardous waste site.
- Establish temporary upland collection sites for oiled waste materials for large spill events; collection sites should be lined with asphalt pad and surrounded by berms to prevent secondary contamination from runoff.

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- Ensure safety of responders by maintaining proper span of control under experienced crew bosses.

*Operations Section will be advised by Planning Section (Environmental Unit).

Nutrient Enhancement

The objective of nutrient enhancement is to increase the rates of natural degradation of oil by adding nutrients (specifically nitrogen and phosphorus). Micro biodegradation is the conversion by microorganisms of hydrocarbons into oxidized products via various enzymatic reactions. Some hydrocarbons converted into carbon dioxide and cell material, while others are partially oxidized or left unaltered as a residue. Nutrients are applied to the shoreline using one of several methods: (1) soluble inorganic formulations are dissolved in water and applied as a spray at low tide, requiring frequent applications; (2) slow release formulations are applied as a solid to the intertidal zone and designed to slowly dissolve; and (3) oleophilic formulations that adhere to the oil itself and are sprayed directly on the oiled areas. This response method is limited to shorelines and adjacent water bodies, which are well flushed, minimizing the potential for nutrient runoff that may cause significant eutrophication. Nutrient enhancement is conditionally recommended on (1) sand beaches, (2) gravel beaches, (3) sheltered rubble slopes, and (4) marshes.

Nutrient enhancement requires RRT approval on a case-by-case basis, as well as the development of a detailed operations and monitoring plan.

Motorized Transportation/Support of Response Actions

Several of the open water and shoreline responses described above may require the use of machinery in support of the response or for transport of personnel. The responses that may use equipment are noted in their descriptions, however, the use of boats and other watercraft, planes, helicopters, and ATVs warrants further discussion. The use of these machines is described in this section, while the potential effects of their use are discussed separately in *Effects Analysis*.

Boats and Other Watercraft

Boats and other watercraft (e.g. hovercraft, wave runners, barges) may be used in open water and shoreline responses. The use of these resources carries depending on the specific response. However, they may be used as a component of the response itself (e.g., skimmers, platforms for applying

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dispersants, deploying or collecting booms), or as a mode of transportation to and from remote locations for response personnel (e.g., removal of surface oil). As a result, boats and other watercraft may be used in shallow or deep water, near shore or offshore, fresh water or marine environments, etc. The Geographic Response Plans (GRPs) may outline boat and watercraft use restrictions within 200 yards of sensitive areas. As a standard practice, the response organization must request a waiver from the National Marine Fisheries Service and or US Fish and Wildlife Service regarding approaching or hazing marine mammals inadvertently during open water response operations.

Airplanes

Planes may be used in open water and shoreline responses. The use of planes depends on the specific response. However, they may be used as a component of the response itself (e.g., platforms for applying dispersants, directing on-water recovery operations), or as a part of the pre- or post-response monitoring (e.g., wildlife surveys). As result, planes may be used over any aquatic or terrestrial environment. However, flight restriction zones may be designated by the GRPs as a precaution against disturbing wildlife species (e.g., marine mammal pupping, bird breeding colony). Year-round restriction may be imposed in some locations; however, restrictions are more likely to be imposed only during times of year in which species have been identified as most sensitive.

Typically, the area within a 1,500 ft radius and below 1,000 ft in altitude is restricted to flying in areas that have been identified as sensitive. However, some areas may have more restrictive zones. In addition to restrictions associated with wildlife, Tribal authorities may also request notification when over flights are likely to affect culturally sensitive areas.

Helicopters

Helicopters may be used in open water and shoreline responses. The use of helicopters depends on the specific response. However, they may be used as a component of the response itself (e.g., platforms for igniting floating oil, directing skimming operations, transporting workers), or as a part of pre- or post-response monitoring (e.g., wildlife surveys). As a result, helicopters may be used over any aquatic or terrestrial environment. However, flight restriction zones may be designated by the GRPs as a precaution against disturbing wildlife species (e.g., marine mammal pupping, bird breeding colony). Year-round restriction may be imposed in some locations; however, restrictions are more likely to be imposed only during times of year in which species have been identified as most sensitive.

Typically, the area within a 1,500 ft radius and below 1,000 ft in altitude is restricted to flying in areas that have been identified as sensitive. However, some

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areas may have more restrictive zones. In addition to restrictions associated with wildlife, Tribal authorities may also request notification when over flights are likely to affect culturally sensitive areas.

All Terrain Vehicles

ATVs may be used in support of open water and shoreline responses. The use of ATVs is often dependent upon the accessibility of the site (e.g., proximity of roads) to this kind of equipment and the type of shoreline in which they are to be used. It is possible to use ATVs on any accessible shoreline type in which an ATV can safely be driven; however, some shoreline types (e.g., marshes, vegetated low banks) are more sensitive to the use of motorized equipment (as well as human foot traffic) than other shoreline types, both in the presence and absence of oil. For example, it is recognized that the use of the ATVs may adversely affect particular un-oiled shoreline habitats that are susceptible to erosion. Some oiled shoreline types, such as marshes, are particularly vulnerable to the introduction and mixing of oil into subsurface sediments. As a result of these concerns relating to shoreline damage, care is taken to weigh the tradeoffs of ATV use on a particular shoreline type, whether oiled or un-oiled. Therefore, in a practical sense, ATV use may be limited to those situations in which the benefits of using ATVs outweigh any potential adverse effects of their use.

Generally, ATVs are used on sand beaches, and restricted to transiting outside of the oiled areas along the upper part of the beach. The decision process for use of ATVs near sensitive aggregations of wildlife is similar to that described for shoreline habitats discussed above. ATVs may be used for a variety of purposes, including the transportation of response personnel and for the collection and disposal of oil, oiled sediments, or oiled debris in support of response activities in near shore open water and on shorelines.

Vessel of Opportunity Program

As part of an oil spill response, a Vessel of Opportunity (VOO) program may be designed and implemented to provide local vessel operators an opportunity to assist with response activities, including transporting supplies, assisting wildlife rescue, and deploying containment and sorbent boom

To qualify for a VOO program, vessel operators and crew must meet several key requirements, including completing an appropriate level of HAZWOPER training, passing a U.S. Coast Guard dockside examination and meeting crewing requirements based on vessel size. Vessel must also be certified as safe, which may include inspection prior to activation.

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Once qualified and selected for use, vessel operators and crew will be compensated for their assistance. Qualification alone, however, does not guarantee participation.

SOUTHEAST
LOUISIANA
AREA
CONTINGENCY
PLAN

Chapter 9000 Appendix G
and Matrices

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TEMPLATE

SHORELINE COUNTERMEASURES MANUAL



TROPICAL COASTAL ENVIRONMENTS

NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION

**HAZARDOUS MATERIALS
RESPONSE & ASSESSMENT
DIVISION**

MAY 1993

SHORELINE COUNTERMEASURES MANUAL

TROPICAL COASTAL ENVIRONMENTS

NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION

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MAY 1992

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Introduction

Shoreline countermeasures following an oil spill are a critical element in determining the ultimate environmental impact and cost resulting from a spill. As with most aspects of spill response, careful planning can significantly increase the effectiveness of treatment operations. Local response organizations need to develop mechanisms for identifying shorelines requiring treatment, establishing treatment priorities, monitoring the effectiveness and impacts of treatment, and for identifying and resolving problems as the treatment progresses.

The National Oceanic and Atmospheric Administration (NOAA) developed this manual as a tool for shoreline countermeasure planning and response by Regional Response Teams, Area Planning Committees, and State and local response agencies. This manual has been written specifically for tropical environments, to support oil spill planning and response activities in both the Caribbean Sea and the Pacific Ocean regions. Similar manuals have been prepared for temperate regions, and a freshwater manual is under preparation.

Even though this manual has been adapted for tropical environments, further customization for each geographic area is needed and encouraged. Each section of the manual should be adapted to address specific issues, priorities, and concerns in the planning area. These elements provide the information needed to select cleanup methods for specific combinations of shoreline and oil types. Adapting and completing the various sections creates a better manual that meets the specific needs of the area. More importantly, the pre-spill process of adapting this manual should allow response agencies the opportunity to discuss and resolve shoreline treatment issues prior to a spill emergency.

The shoreline environments have already been revised to reflect those found in tropical areas, based on those included in the Environmental Sensitivity Index (ESI) atlases prepared by NOAA for Florida, Puerto Rico, U.S. Virgin Islands, Hawaii, and Guam. The shoreline descriptions and rankings in these atlases descriptions have been updated to reflect the current research on oil behavior and response activities, and they are discussed in Chapter 2. The section on Special Considerations at the end of Chapter 2 lists those resource issues that are potentially of concern in tropical environments. Guidelines have been written for three types of special concerns common to all tropical regions: coral reefs, seagrasses, and turtle nesting beaches. It is intended that each region or area would identify those resources

of greatest concern to them and prepare similar guidance on how to best minimize impacts from oil spills.

Chapter 3 of the manual also outlines a process of documenting and recommending cleanup options for a section of a shoreline after it has been oiled. The scope of the process should be scaled to fit the spill size and conditions. Thus, both comprehensive and simplified forms and methods have been included.

Chapter 4 contains the main thrust of the manual, the matrices for recommended cleanup methods for four main types of oil and the shoreline habitats present in tropical environments. Each region should complete the matrices for themselves.

Chapters 5 and 6 include detailed descriptions of the various shoreline treatment methods to be considered. Local experts in shoreline treatment should be involved in the analysis of the effectiveness and effects of each of these methods for each area.

The appendices include a section on Best Management Practices, which have been compiled from previous spills. These practices address specific resource issues which were raised during an oil spill and resolved by the scientific community. They are included as examples for response teams to follow, in the event similar issues arise. Each region is encouraged to contribute to this appendix additional practices as they are developed during actual spills, so that all may benefit from the lessons learned.

1 Decision Process Organization

A Shoreline Evaluation Process

The shoreline evaluation process requires a commitment of trained personnel to assess, evaluate, and communicate the effects of oil on the shoreline, as well as to recommend countermeasures to mitigate adverse effects. At most spills, a repetitive, detailed, and systematic survey of the extent and degree of shoreline contamination is needed to:

- 1 Assess the need for shoreline cleanup
- 2 Select the most appropriate cleanup method
- 3 Determine priorities for shoreline cleanup
- 4 Document the spatial oil distribution over time
- 5 Maintain an internally consistent historical record of shoreline oil distribution for use by other scientific surveys

The organizational structure described in the following pages details a three-phase model for the On-Scene Coordinator (OSC) to use in establishing the shoreline evaluation process during an incident. During a small spill event, one team of individuals may be able to conduct all three phases of support.

On the other end of the spectrum, during a larger spill event, three or more separate teams would be required to conduct all three phases of support to the OSC. The products of the shoreline evaluation process for a larger spill would include collecting the individual shoreline sketches noting the extent of oiling, developing a database either in text matrix or graphics displaying the oil distribution on the shoreline, recording the decision process from the initial assessment of oiling, and monitoring and final evaluation of the countermeasures used.

1 Shoreline Assessment Group

Objectives

To determine location and extent of shoreline oiling, and effectiveness of implemented countermeasures.

Members

Three or four trained personnel prepared to evaluate a section of shoreline, equipped with proper protective gear and suitable transportation to and from the site. The assessment group should have representatives of the OSC, State, responsible party, and trustees. Trained volunteers may assist members of the group. Team members must have basic site safety training and training sufficient to complete the Shoreline Survey Evaluation Form (page 33). A person well-versed in oil spill control should be the team leader. The group leader should seek consensus, however, all areas of controversy or differences of opinion shall be documented and forwarded to the OSC. Specific recommendations for cleanup may be included under this phase of the assessment. Chapter 3 outlines the shoreline field evaluation process.

Products

During a small spill event, the products may be as simple as a field sketch illustrating the oil distribution on the impacted shoreline and photographic documentation. During more complex events, the completion of the Shoreline Survey Evaluation Form would be required to document the many details of the oil's distribution on complex shoreline features.

2 Shoreline Product Review Group

Objectives

Assure product quality of the Shoreline Assessment Group. Assure quality of the spill database.

During larger or complex spill events, the OSC may elect to establish a special quality assurance/quality control (QA/QC) team. The responsibility of this group is to insure that information from the Shoreline Assessment Group is accurate and consistently gathered. They will assure items of significance that may have been overlooked by the Shoreline Assessment Group are added to the assessment process from other data sources (i.e., in-house reports, maps, databases) such as culturally or archaeologically significant areas.

Significantly, the time-sensitive elements of the response may also be added to recommendations to the OSC by this team. For example, are there natural resources that are particularly sensitive to oiling at the time, or season, the spill is occurring? Is there a window of opportunity to conduct countermeasure operations to protect a turtle nesting season (remove the oil before they arrive) or terminate countermeasure activities to protect bird nesting areas (keep the responders away from nesting areas with live chicks)?

Members

The Shoreline Product Review Group should contain representatives from the OSC, State, land managers, and database managers, as appropriate. The State representative shall collect and forward special concerns submitted by local authorities. The NOAA Scientific Support Coordinator (SSC) team can assist in the design of the database to compile detailed data on oil distribution by shoreline segment.

Products

During more complex spill events, a database will be used to collect and summarize the Shoreline Evaluation Survey forms prepared by the field teams. The use of maps and other graphics to display the oil's distribution on the shoreline is critical in assisting the decision process. This display may be as simple as using colored markers on existing maps or charts. There should not be a requirement for a computer-generated display of the oil's distribution on the shoreline when lower technology displays will provide the same information to the Technical Advisory Group and the OSC. The NOAA SSC team can assist in the design of a visual display for a particular spill event by drawing pictures representing oil distribution on representations of particular shorelines now available from National Ocean Survey (NOS) charts.

For more detailed statistical documentation, the use of a database to collect and summarize distances and extent of shoreline segments that are oiled may also be required. There should not be a requirement for the computer system to be both a combination of a visual and a data collection system when lower technology systems can provide the same information to the Technical Advisory Group and the OSC.

3 Technical Advisory Group

Objectives

Review and evaluate Shoreline Survey Evaluation forms to provide timely advice to the OSC for recommended treatment of oiled shorelines and priorities, including specific countermeasures. In addition, this group will consider the effects of proposed countermeasures. They may also suggest alternative or modified countermeasures and technologies to the OSC for experimental trials during a spill of opportunity.

Members

NOAA SSC, State representative, trustee(s), U.S. Coast Guard, and responsible party. The SSC will present group recommendations, including differing opinions, to the OSC. Participants in this group shall have the authority to commit their agencies to recommended actions. The level of staff participating on this team should have the authority to determine the final recommendations.

Products

One key product of the Technical Advisory Group is feedback to the Shoreline Assessment Group on treatment countermeasures that have been approved. The Shoreline Assessment Group will then be able to assess the effectiveness of this treatment method on the affected shoreline and make recommendations back through the Technical Advisory Group for any adjustments necessary to improve the efficacy of the cleanup. The form of the feedback may be as simple as a copy of the approved countermeasure or a work order. The copying of the graphics/charts, in which the oil distribution is displayed, would be another desirable form of feedback. Recommendations and authorized countermeasures should be copied to each team member.

B Termination of Countermeasure Activities

Objective

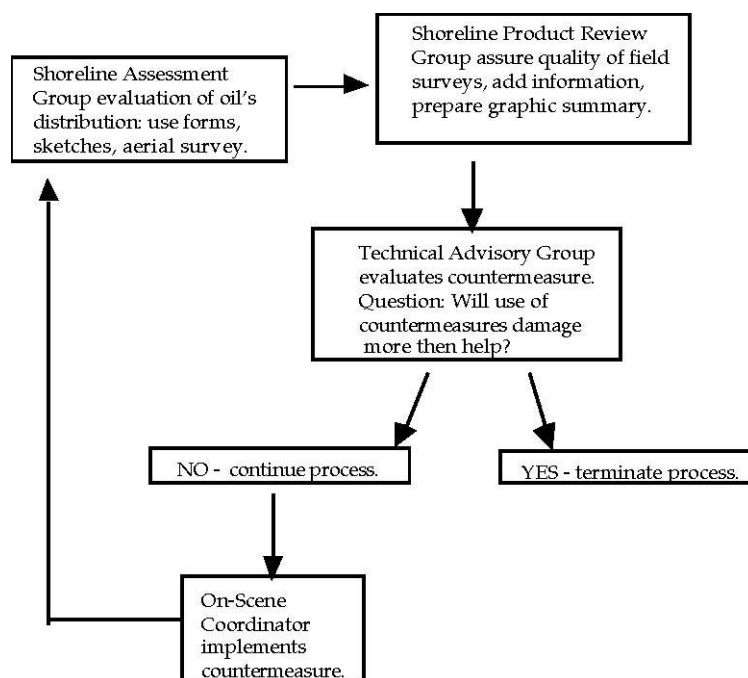
To reach agreement on the completion of each shoreline segment countermeasure activity.

Product

Completion of active shoreline countermeasures under the jurisdiction of the Federal Government is a decision of the OSC. Support of the OSC requires recommendations on shoreline countermeasures, and also recommendations on when to terminate response. The process of evaluating the results of countermeasures and the recommendation to terminate response activities requires a give and take of members with many different responsibilities and roles. A goal of the Technical Advisory Group is to determine if the continued use of a particular countermeasure will result in more damage to the environment than would occur as a result of terminating any active response measures.

Summary of the Decision Process

This section outlines the cyclical decision tree for evaluating activities.



Summary products of the decision process, including the use of maps and other graphics to display the oil's distribution on the shoreline, is critical in assisting this cyclical decision process.

□ This display may be as simple as using colored markers on existing maps or charts.

□ For more detailed and statistical documentation, the use of a database to collect and summarize distances of shoreline segments that are, for example, heavily or lightly oiled, may also be required.

□ The NOAA SSC team can present the visual and database information, including differing opinions of members, to the OSC.

□ This report of the recommendations and countermeasures approved for use should be copied to each team member and collected for inclusion in the final OSC report as required.

2 Shoreline Types and Sensitive Resources

The type of shoreline, degree of exposure to waves and currents, and associated biological sensitivity are the main criteria for selecting appropriate treatment techniques. Prediction of the behavior and persistence of oil on intertidal habitats is based on an understanding of the coastal environment, not just the substrate type and grain size. The vulnerability of a particular intertidal habitat is an integration of the:

- 1 Shoreline type (substrate, grain size, tidal elevation, origin)
- 2 Exposure to wave and tidal energy
- 3 Biological productivity and sensitivity
- 4 Ease of cleanup

All of these factors are used to determine the relative sensitivity of shorelines. Key to the sensitivity ranking is an understanding of the relationships between: physical processes, substrate, shoreline type, product type, sediment transport, and product fate and effect. The intensity of energy expended upon a shoreline by wave action, tidal currents, and river currents directly affects the persistence of stranded oil. The need for shoreline cleanup activities is determined, in part, by the lack or slowness of natural processes in removal of oil stranded on the shoreline.

These concepts were used in the development of the Environmental Sensitivity Index (ESI), which ranks shoreline environments as to their relative sensitivity to oil spills, potential biological injury, and ease of cleanup. Generally speaking, areas exposed to high levels of physical energy, such as wave action and tidal currents, and low biological activity rank low on the scale, while sheltered areas with associated high biological activity have the highest ranking. The shoreline ranking system provides a useful first step in the design of contingency plans because it identifies the priority areas that require maximum effort for protection and cleanup. The shoreline types used in this manual are the rankings, on a scale of 1 to 10, used on ESI maps prepared for Florida, Puerto Rico, U.S. Virgin Islands, Hawaii, and Guam. The descriptions, predicted oil impact, and recommended response activity listed in the following sections were updated from existing ESI maps, based on NOAA (1992). These shoreline types are then used in the matrices in Chapter 4.

ESI=1 Exposed Rocky Shores and Vertical, Hard Man-Made Structures (e.g., Seawalls)

Description □ Exposed rocky shores are composed of vertical scarps ($>45^\circ$ in slope) in bedrock.

□ They are most common on exposed headlands with steep nearshore topography.

□ They are exposed to high wave energy or tidal energy on a regular basis.

□ In places, the vertical scarps are buttressed at the base by large slump blocks.

□ Seawalls and piers occur in developed areas to provide protection to residential and industrial developments.

□ Substrate may be colonized by intertidal algae and limpets, although attached organisms are usually sparse to moderate.

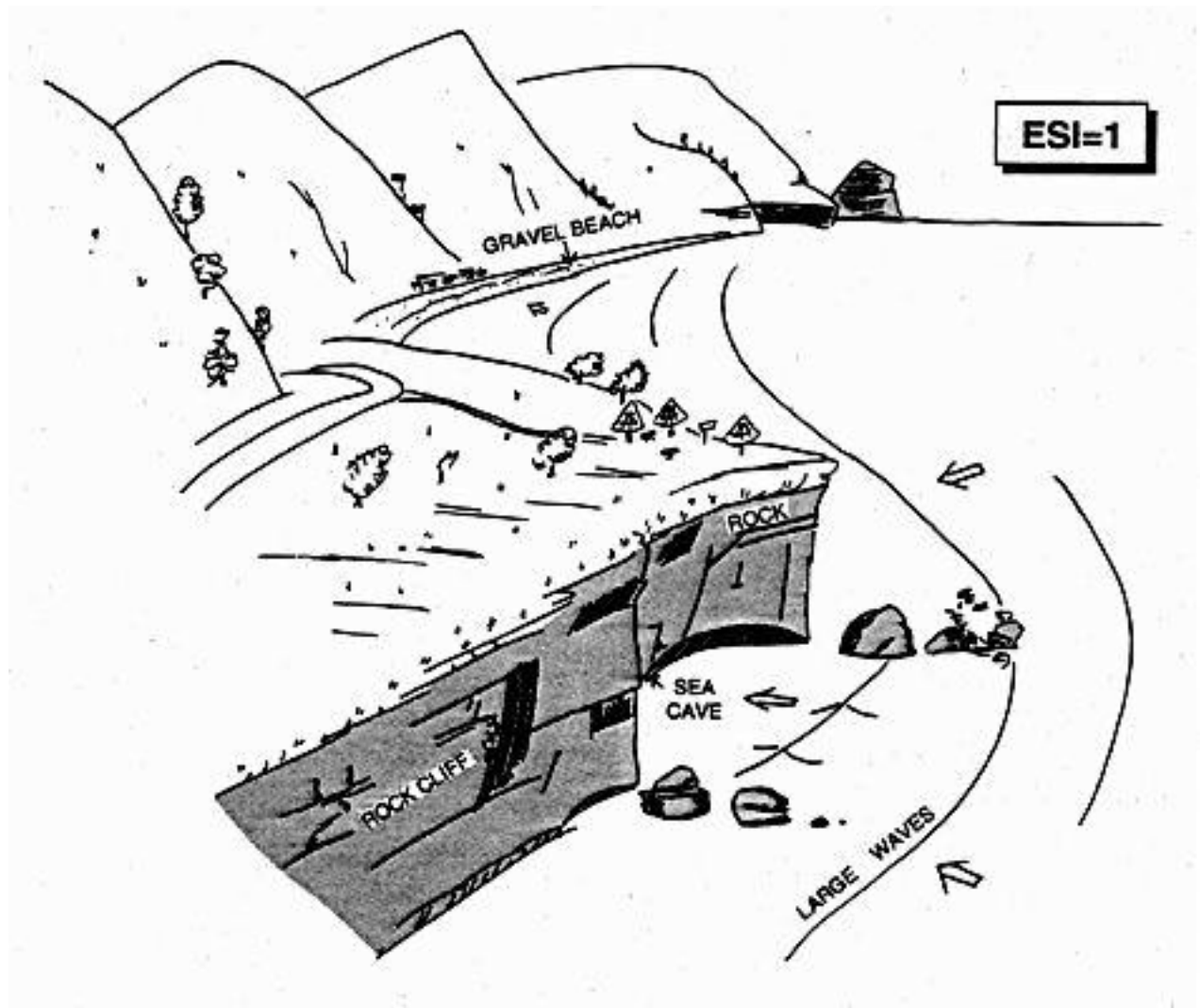
Predicted Oil Impact

□ Most commonly, oil would be held offshore by waves reflecting off the steep rock faces.

□ Deposited light oils would be removed rapidly by wave action; heavier, sticky oils are likely to remain longer as a patchy band at or above the high-tide line.

□ Heavy and weathered oils would adhere to rough surfaces and in crevices; there is little potential for penetration.

□ Effects on intertidal communities are expected to be of short duration; an exception would be where heavy concentrations of a light refined product (e.g., No. 2 fuel oil) came ashore very quickly.



Recommended Response Activity □ On very exposed shores, no cleanup is necessary (and may be dangerous).

□ On less exposed shores:

- High-pressure spraying may be effective while oil is still liquid.

- Manual scraping of seawalls may be necessary for removal of tarry deposits, to minimize aesthetic impacts.

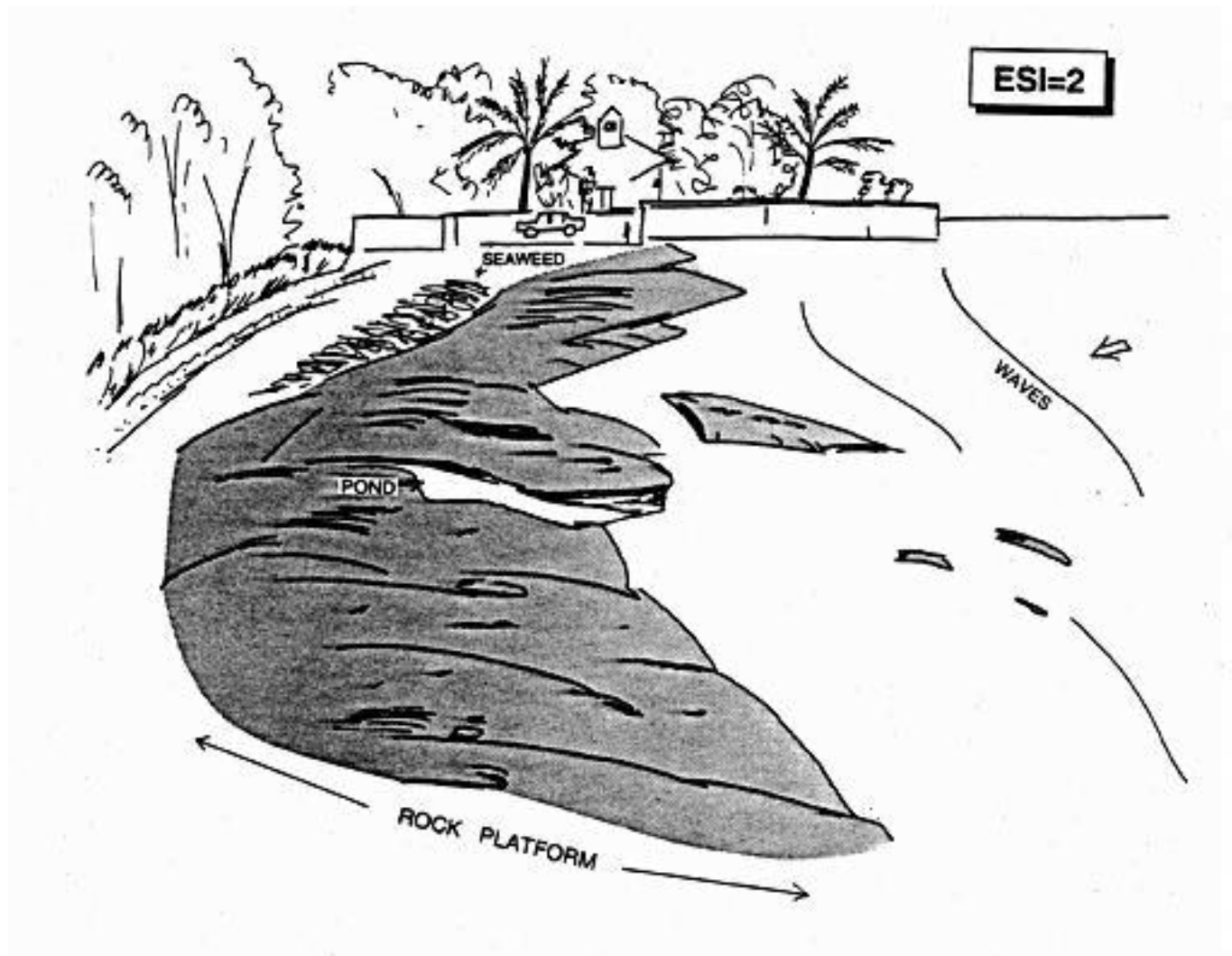
ESI=2 Exposed, Wave-Cut Rock Platforms

Description

- Platforms are wave-cut or low-lying benches in rock, generally exposed to high wave action.
- The platform may be covered by a thin veneer of sand and gravel, frequently colonized by intertidal algae and limpets.
- Rock surfaces are irregular, with numerous tidal pools and associated organisms. The rock surface may be colonized by intertidal algae and limpets.
- In places, low-lying, pitted, and pinnacled limestone merges into offshore reef-flat platforms.
- The reef-flat platform supports large populations of encrusting plants and animals. Often, the heaviest growth on the reef-flat platform is restricted to low-tide moats or where holes and depressions retain water during low tide.

Predicted Oil Impact

- Oil would not adhere to the rock platform, but rather be transported across the platform and accumulate along the high-tide line.
- Light oils may penetrate porous volcanic rocks at the high-tide line.
- Oil can penetrate and persist in the beach sediments on the landward side of the platform, if present.
- Light oils would tend to be removed rapidly by waves and evaporation.
- Heavy oils and tar balls would tend to melt into crevices and depressions, especially on porous, irregular rock surfaces.
- Persistence may be from days to months, depending on the site-specific, wave-energy levels and type of oil.
- Tidal pool organisms and algae may be killed, but recovery can be rapid.



Recommended Response Activity

- ☐ Cleanup is not necessary in most areas, except for removal of oiled wrack and accumulated pooled oil.
- ☐ High recreational-use areas may be cleaned effectively using high-pressure water spraying of non-vegetated areas if oil is still fresh.
- ☐ Avoid removal of organisms.
- ☐ Low-pressure flushing may be appropriate on vegetated areas that continue to sheen after several days.

ESI=3 Fine-Grained Sand Beaches

Description

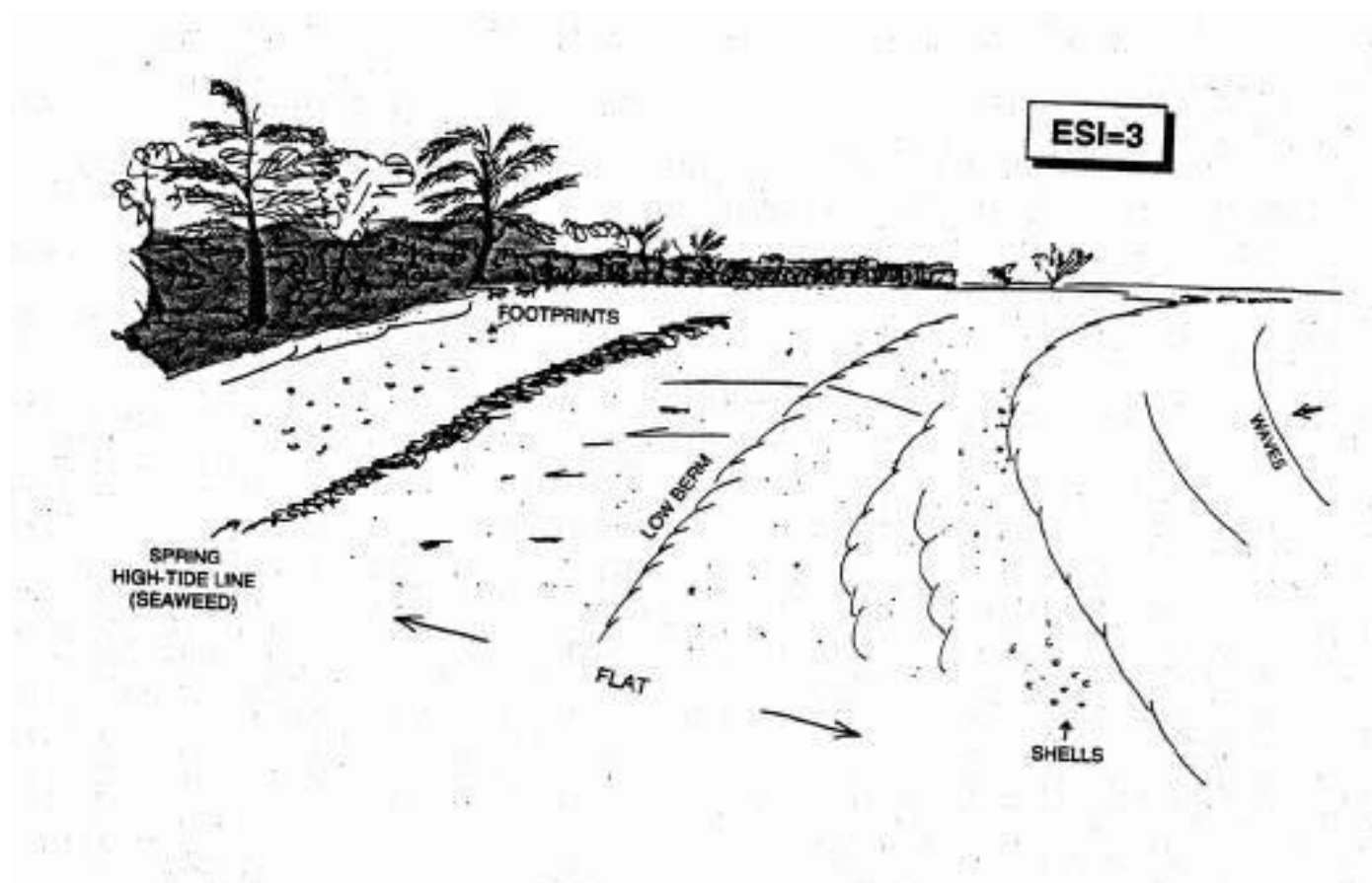
- Not a dominant beach type because of the abundance of coarse shells and coral rubble.
- On islands they are usually found as pocket beaches bordered by rocky headlands.
- They are high-use recreational areas.
- The beaches are generally flat and hard-packed, and infauna are scarce.

Predicted Oil Impact □ Large oil accumulations would cover entire active beach face.

- Light oil accumulations would be deposited as oily swashes along the upper intertidal zone.
- Oil would accumulate in any wrack that may be present.
- Penetration of oil into the beach can be up to 10 cm; burial would be minimal.
- Asphalt pavements can form under heavy accumulations; pavements change the nature and stability of the substrate and thus its biological utilization.
- Shorebirds resting/feeding on these beaches may be oiled.
- Biological effects include temporary declines in beach organisms, which may also affect feeding shorebirds.

Recommended Response Activity □ Fine-grained sand beaches are the easiest beach type to clean.

- Cleanup should concentrate on removal of oil and oiled wrack.
- Sand removal should be minimized to avoid erosional problems; sediment removal activities should commence only after all the oil has come ashore.
- Manual cleanup, rather than use of road graders and front-end loaders, is advised to minimize volume of sand removed and prevent grinding the oil deeper, depending on the size of the oiled area.
- Techniques which wash oiled sand into the lower intertidal and subtidal should be avoided.



ESI=4 Medium- to Coarse-Grained Sand Beaches

Description

□ These beaches are present in areas sheltered by barrier reefs or wide reef-flat platforms, as pocket beaches bordered by rocky headlands, or as long stretches that have been renourished.

□ They have moderate beach slopes and are narrow with soft sediments.

□ They occur in areas with intermittent high waves and wrack can be common.

□ Species density and diversity is usually low.

Predicted Oil Impact

□ Under heavy accumulations, oil can cover the entire beach face, although the oil would be lifted off the lower part of the beach with the rising tide.

□ Small accumulations would be deposited in swash lines and wrack deposits.

□ Large amounts of oil can accumulate behind the high-tide berm, where it is unable to drain off the beach at low tide.

□ Oil can penetrate 10-25 cm, with light oils penetrating deeper than heavy oils.

□ Oil may become deeply buried (30-60 cm) as clean beach sediments are deposited on top of the oiled layer.

□ Asphalt pavements can form under heavy accumulations in more sheltered areas; pavements change the nature and stability of the substrate and thus its biological utilization.

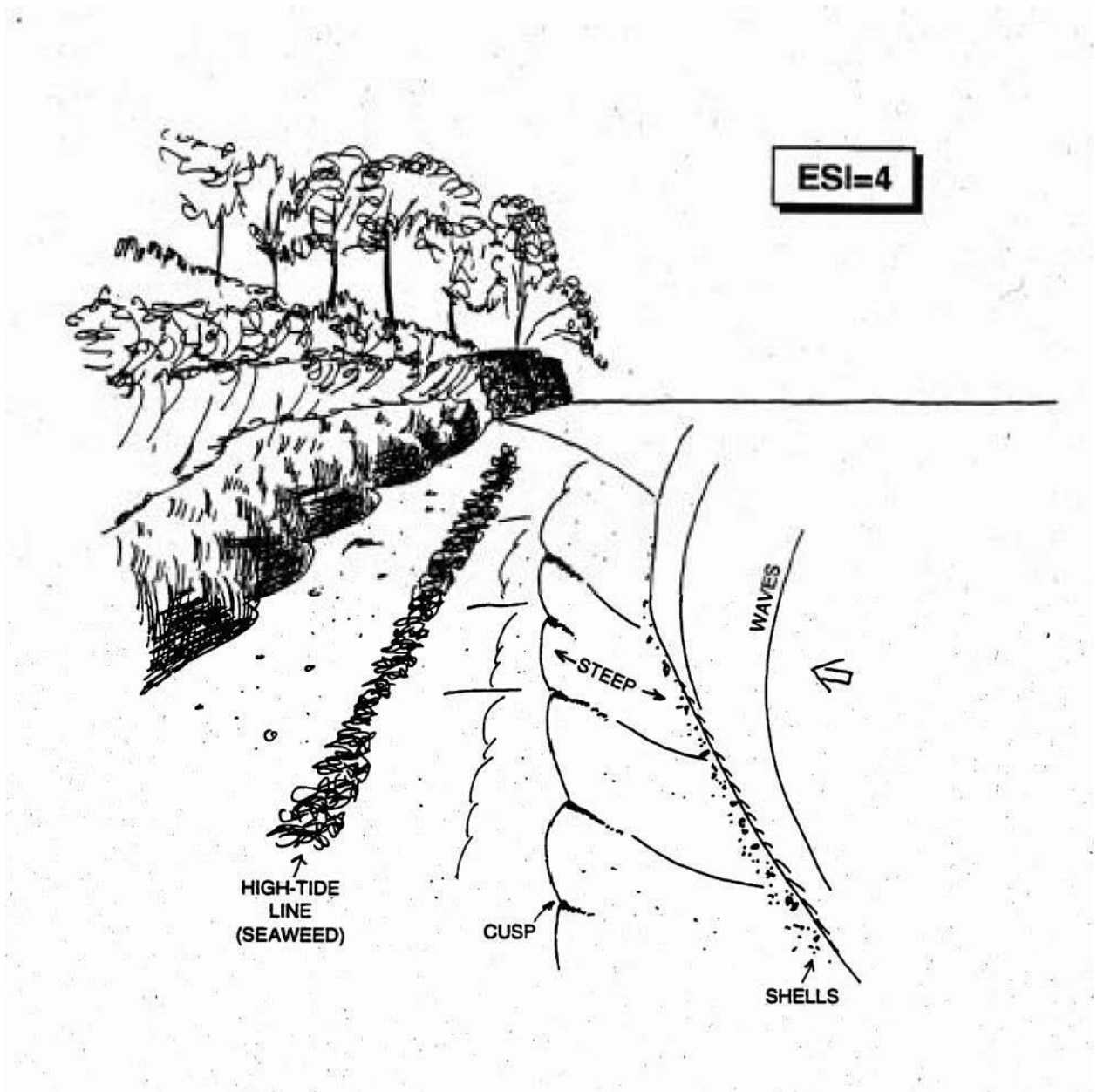
□ Temporary declines in infaunal populations may occur.

Recommended Response Activity

□ Cleanup may be difficult because of relatively soft sediments (e.g., vehicular access may be impaired).

□ Cleanup should focus on oil/oily debris removal from the upper beach face.

□ Sand removal should be minimized to avoid erosional problems; sediment removal activities should commence only after all the oil has come ashore.



- Traffic should be limited to prevent mixing oil deeper into the sediments.
- Use of heavy equipment for oiled sand removal may result in the removal of excessive amounts of sand; manual cleanup may be less disruptive, depending on the size of the oiled area.
- Nutrient addition may be an option, particularly when other cleanup methods have reached their practical limit of application. Effectiveness of nutrients would have to be evaluated on a case-by-case basis.

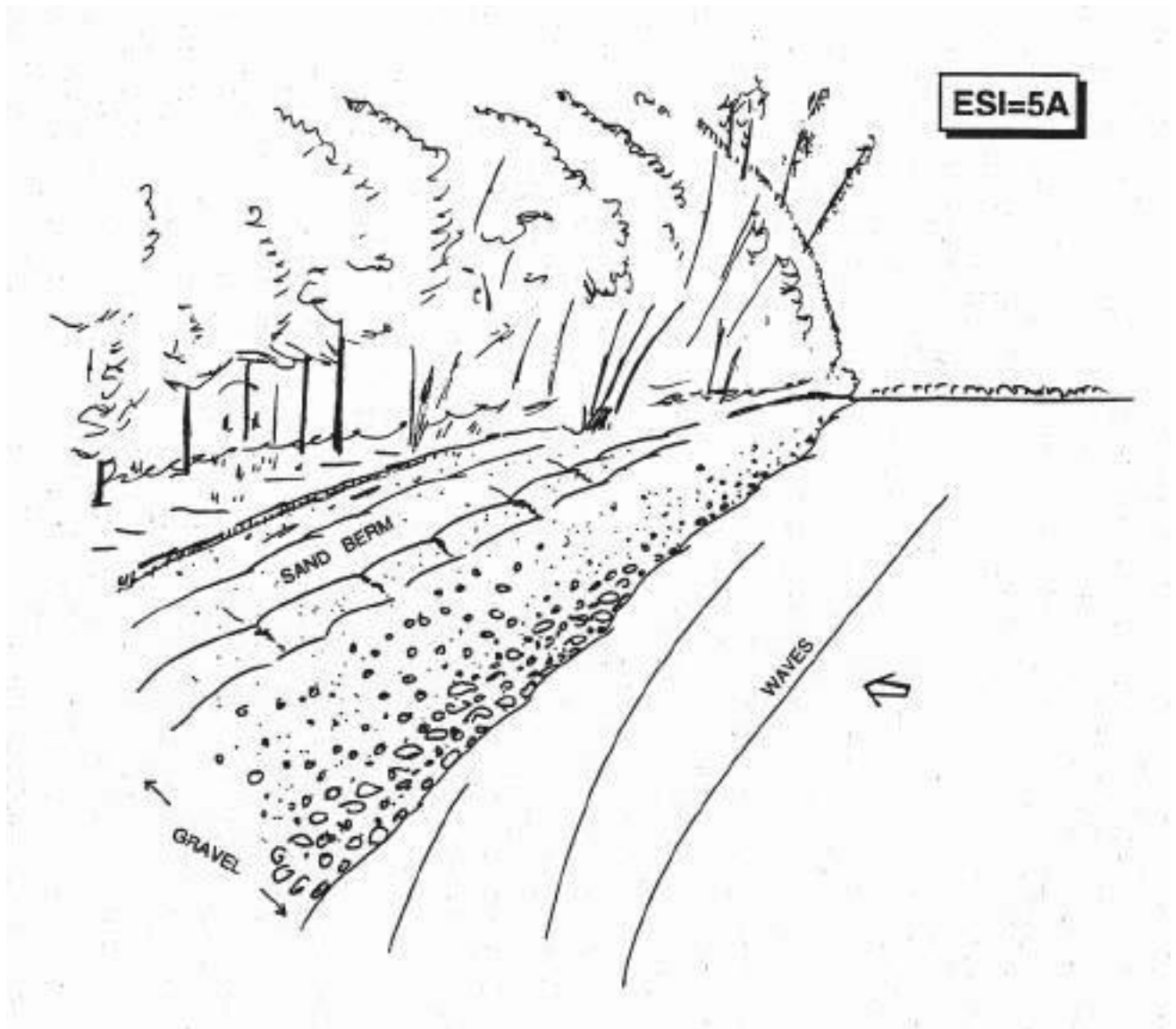
ESI=5A Mixed Sand and Gravel Beaches

Description

- These beaches are composed of a variable mixture of carbonate sand, shells, coral rubble, and rock fragments.
- They occur in a wide variety of settings, but are most common on exposed shorelines in shallow indentions adjacent to eroding headlands and on top of reef-flat platforms.
- Active beaches have low infaunal densities because of sediment mobility; more stable beaches have moderate densities.

Predicted Oil Impact

- Oil penetration may be high (tens of cm), with greatest penetration in coarser, well-sorted sediments.
- Under very heavy accumulations, oil may spread across the entire beach.
- During small spills, oil would be deposited along and above the high-tide swash line.
- Burial of oil by clean sediments may be very deep (more than 1 m) at the high-tide berm.
- Oil can be stranded on low-tide terraces composed of gravel, particularly if the oil is weathered or emulsified.
- Asphalt pavements are likely to form in more sheltered beaches where heavy accumulations of oil fill the voids between the sediments; once formed, these pavements are very stable and can persist for many years.
- Any oil stranded above the high-tide line would be highly persistent.
- Biota present may be killed by the oil, either by smothering or by lethal concentrations of dissolved components in interstitial water.



Recommended Response Activity

- Sediment removal should be minimized to avoid erosional problems; sediment cleanup should commence only after all the oil has come ashore.
- Oiled wrack and debris deposits should be removed manually.
- Low-pressure spraying may be used effectively on coarser-grained beaches.
- Berm relocation is effective for speeding natural removal of subsurface oil.
- Nutrient addition may be an option, particularly when other cleanup methods have reached their practical limit of application. Effectiveness of nutrients would have to be evaluated on a case-by-case basis.

ESI=5B Artificial Fill Containing a Range of Grain Size and Materials

Description

- Most of the developed ports and harbors have areas that have been modified by creating beaches, assorted breakwaters, etc., by artificial placement of a variety of materials.
- Usually has the consistency of mixed sand and gravel beaches, being composed of sand mixed with coral and rock debris.
- These beaches may be exposed only to very intermittent wave energy.

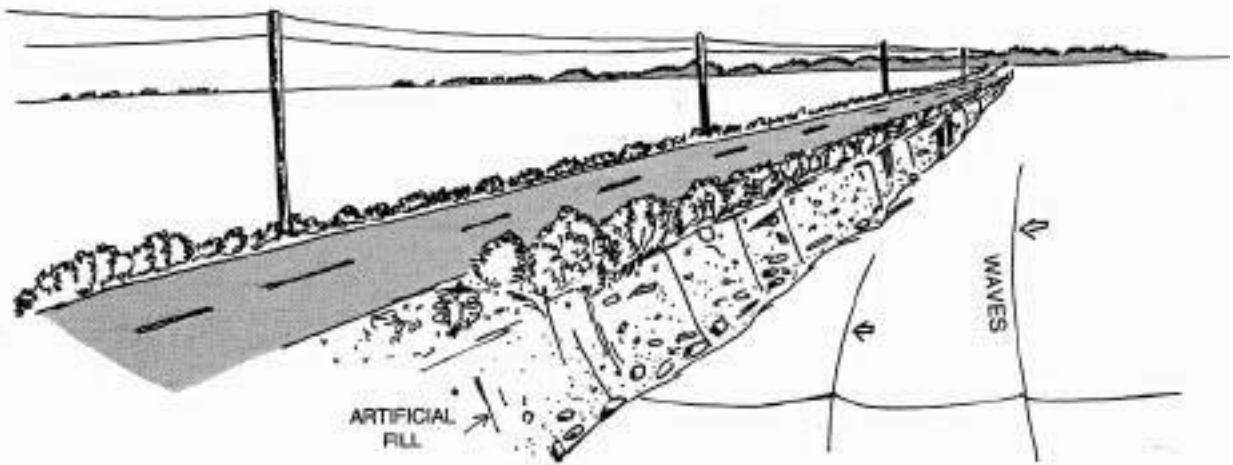
Predicted Oil Impact

- Oil penetration may be high (tens of cm), with greatest penetration in coarser, well-sorted sediments.
- Deeply penetrated oil may leach for a period of time, generating a source of chronic oiling to adjacent habitats.
- Under very heavy accumulations, oil may spread across the entire beach.
- During small spills, oil would be deposited along and above the high-tide swash line.
- Natural removal rates may be very slow, depending on the local wave or boat wake energy.
- Asphalt pavements are likely to form in more sheltered beaches where heavy accumulations of oil fill the voids between the sediments; once formed, these pavements are very stable and can persist for many years.
- Any oil stranded above the high-tide line would be highly persistent.

Recommended Response Activity □ Oiled wrack and debris deposits should be removed manually.

- Low-pressure spraying may be used effectively.
- Removal of sediment may be advisable if more fill is available to replace it, to control chronic leaching or remove pavements.

ESI=5B



ESI=6A Gravel Beaches

Description

- Gravel beaches are composed purely of gravel-sized sediments, with little-to-no sand.
- The gravel-sized sediments include coral rubble and/or shell and rock fragments.
- Gravel beaches are present adjacent to eroding headlands.
- They can be steep, with multiple wave-built berms forming the upper beach.

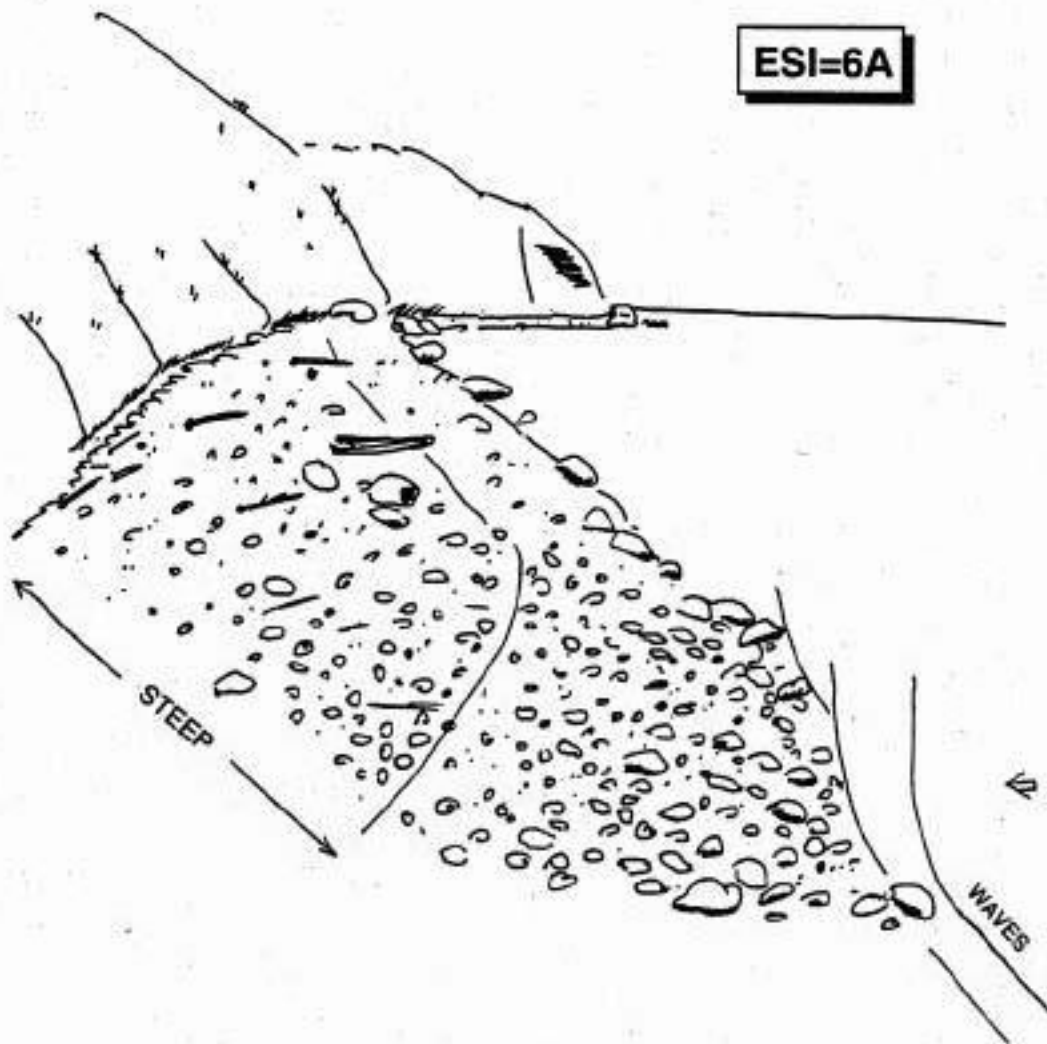
Predicted Oil Impact □ Oil on gravel beaches would coat individual pieces of gravel.

- Coral rubble is very porous and most oils will soak into the coral rubble itself.
- High porosity and permeability would allow deep penetration to several tens of centimeters into substrate.
- Penetration would be greatest in areas of largest grain size and best sorting.
- In exposed areas, waves would remove surface contamination.
- In intermittent-energy areas, buried or penetrated oil would tend to seep out slowly, generating sheens that can recontaminate the shoreline.
- There is a high potential for oil burial by accretional features.
- If left to harden, heavy accumulations of oil would likely form an asphalt/gravel pavement in sheltered areas.

Recommended Response Activity □ Heavily oiled wrack and debris should be removed.

- Removal of sediments is not recommended because of the slow rate of natural replacement of gravel.
- High-pressure spraying of oiled gravel may help in cleaning exposed surfaces, but would have little effect on oil that penetrated deeply into gravel.
- Berm relocation is effective for speeding natural removal of subsurface oil.
- Nutrient addition may be an option for treating oiled gravel beaches, particularly when other cleanup methods have reached their practical limit of application. Effectiveness of nutrients would have to be evaluated on a case-by-case basis.

ESI=6A



ESI=6B Exposed Riprap

Description

- Riprap consists of large rocks as well as concrete armor units (tetrapods, dolos, etc.).
- Riprap is present in harbor entrances and along developed areas for shore protection.
- Biomass is generally low in high energy areas, but attached organism density and species diversity are higher at more protected sites.

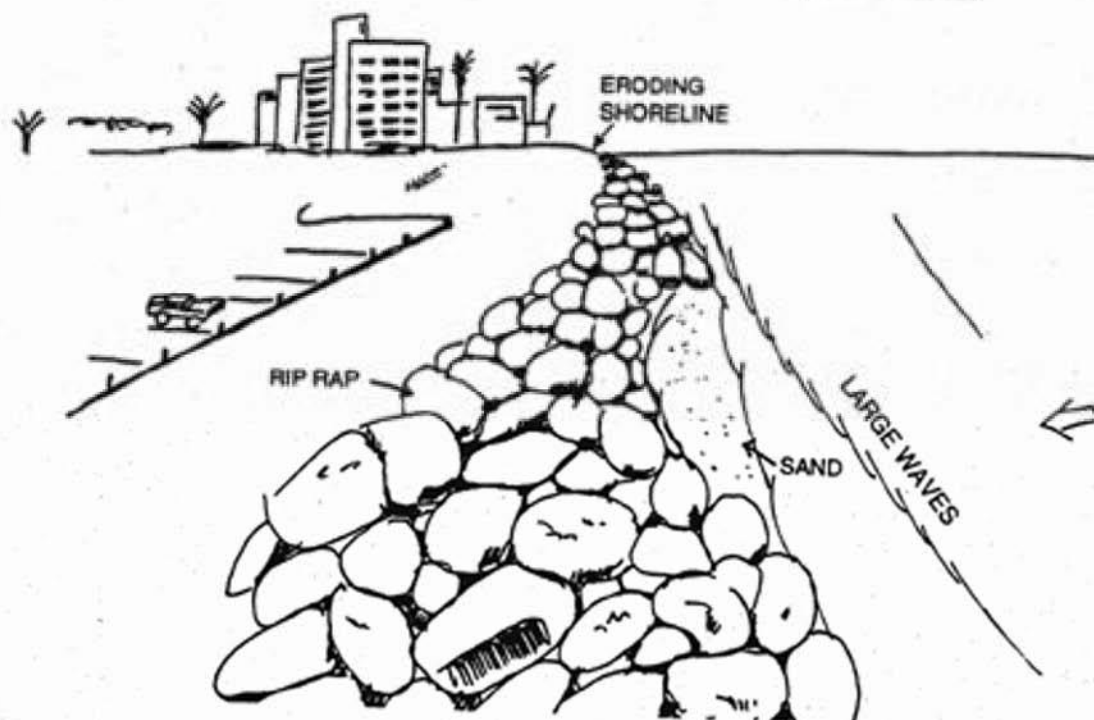
Predicted Oil Impact

- Heavy oil would coat the surface as well as penetrate and completely fill the cavities in riprap structures.
- In exposed areas, waves would remove surface contamination.
- In lower-energy areas, oil would tend to seep out of the oil-filled cavities slowly, generating sheens that can recontaminate adjacent shorelines.
- If oil is left to harden, an asphalt pavement may result.

Recommended Response Activity

- High-pressure spraying of oiled riprap may help in cleaning exposed surfaces but would have little effect on oil that penetrated deeply into the riprap.
- For small areas of contamination, riprap units can be manually wiped or scraped to remove oil.
- It may be necessary to remove heavily oiled riprap and replace it.
- Sometimes, the only option is to use snare booms to pick up oil as it is naturally removed.

ESI=6B



ESI=7 Exposed Tidal Flats

Description

- They are an uncommon shoreline type in tropical U.S. waters because of the small tidal range in the Caribbean Sea and open Pacific Ocean.
- They are present near river mouths in areas sheltered by barrier reefs or wide fringing reefs, in the lee of offshore islands, or near tidal inlets.
- The dominant grain size is sand, perhaps with minor amounts of mud and gravel.
- They are exposed to moderate wave and tidal current energy.
- They are always associated with another shoreline type on the landward side of the flat.
- Biological utilization can be very high, with large numbers of organisms and heavy use by birds for roosting and foraging.
- Intertidal benthic algae may dominate this habitat.

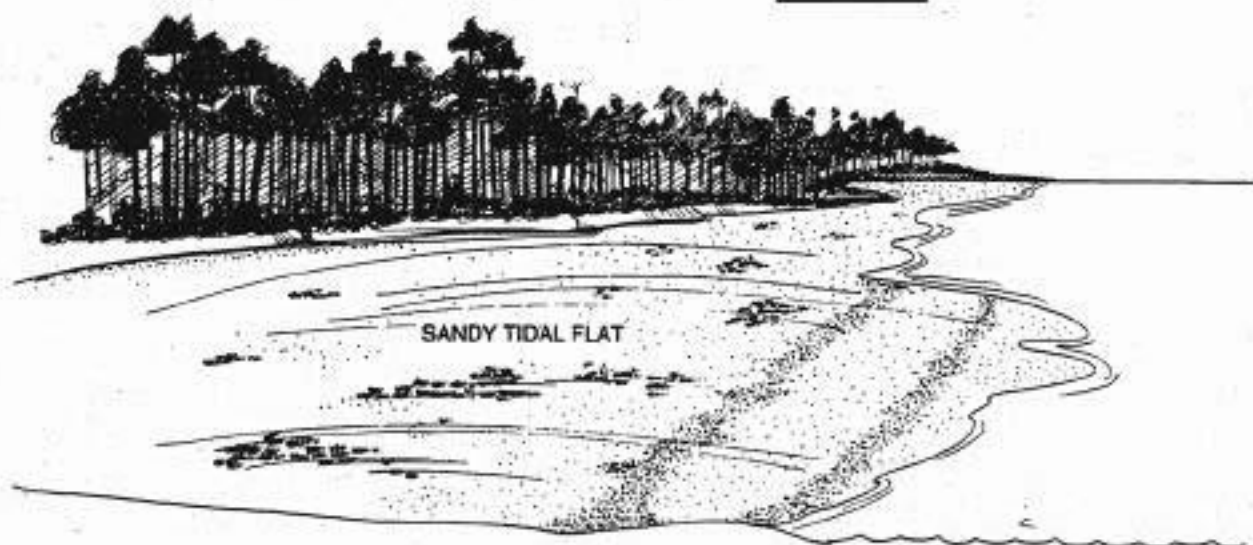
Predicted Oil Impact □ Heaviest concentrations would be along the high-tide line.

- Most oil would be transported across the flat with the rising tide; seldom would oil adhere to the tidal flat or be buried.
- Heavy accumulations would cover the flat during low tide.
- Oil does not penetrate the water-saturated sediments, except into burrows in the upper intertidal zone, but it may coat the attached algae, particularly if it is dead or dries out during exposure at low tide.
- Biological impacts may be severe, primarily to organisms, thereby reducing food sources for birds and other predators.

Recommended Response Activity □ Cleanup is difficult; therefore these areas require priority protection.

- Cleanup is possible only during low tides.
- The use of heavy machinery should be avoided at all times.
- Cleanup efforts should concentrate on removing oil and oily debris along the high-tide line.
- Operations should be conducted from boats to minimize sediment disturbance.

ESI=7



ESI=8 Sheltered Rocky Shores and Coastal Structures

Description

- Sheltered rocky shores occur in small coves and bays, and in developed areas where canals have been dug into bedrock.
- They occur as vertical rock walls and boulder-strewn rocky ledges.
- Seawalls, piers, bulkheads, and other structures can dominate developed shorelines along harbors and bays.

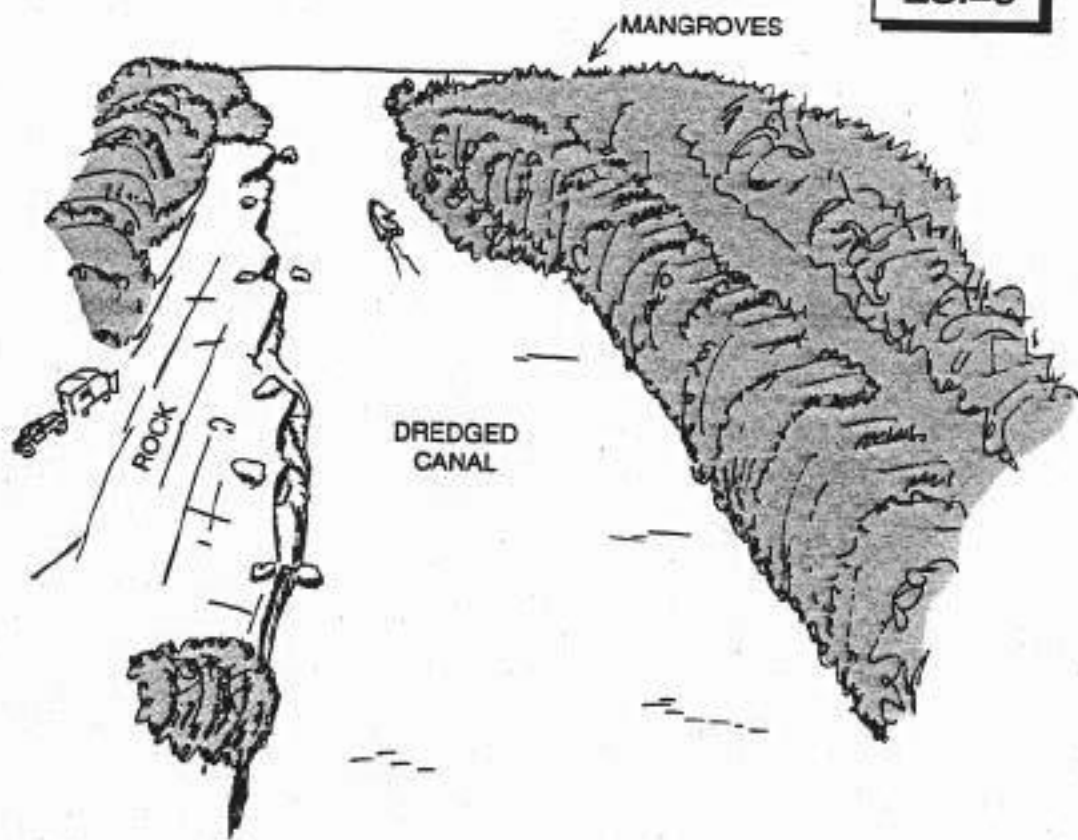
Predicted Oil Impact □ Oil would coat the intertidal surfaces of rocky shores and seawalls.

- Oil would penetrate into the joints and voids of the rocks.
- On vertical surfaces, the oil would form a distinct oil band along the high-tide line; the lower half of the rock face usually stays wet enough to prevent oil from adhering and remaining.
- Heavy oil accumulations can coat the entire intertidal zone.
- Oil may persist for weeks to months; fresh oil and light refined products have high acute toxicities, which can affect attached organisms after even short exposures.
- Biota living on the surface (e.g., urchins, crabs, snails) would be impacted.

Recommended Response Activity

- High- and low-pressure water spraying of the rocky surfaces and seawalls may be required:
 - To remove oil
 - To prepare area for recolonization of epifauna
 - For aesthetic reasons, in populated areas
 - To prevent the chronic leaching of oil from the surface
- High-pressure spraying of coastal structures should be conducted only when the tide is high, to prevent the released oil from adhering to the sediments at the base of the structures. Sorbents can also be used to recover the oil.

ESI=8



ESI=9 Sheltered Tidal Flats

Description □ Sheltered tidal flats are not common, because of the small tidal range.

□ They are often associated with mangroves.

□ They are composed predominantly of mud, but may contain sand and/or gravel, and are sheltered from wave and tidal energy.

Predicted Oil Impact

□ Oil would most likely to be transported across the tidal flat and deposited along the high-tide line in the accumulated wrack deposits.

□ Very heavy accumulations can cover much of the flat surface, but penetration would not occur into the water-saturated sediments of the flat, except possibly into burrows at the high-tide line.

□ Long-term contamination of muddy tidal-flat sediments is possible in areas of high suspended sediments through the sorption of the oil on these particulates.

□ Oil stranded at the high-tide line or mixed into the sediments may persist for many years; natural removal is very slow.

□ Organisms living in and on the sediments would be impacted.

Recommended Response Activity

□ These environments are high-priority areas necessitating the use of spill protection devices such as booms to prevent or minimize oil impact.

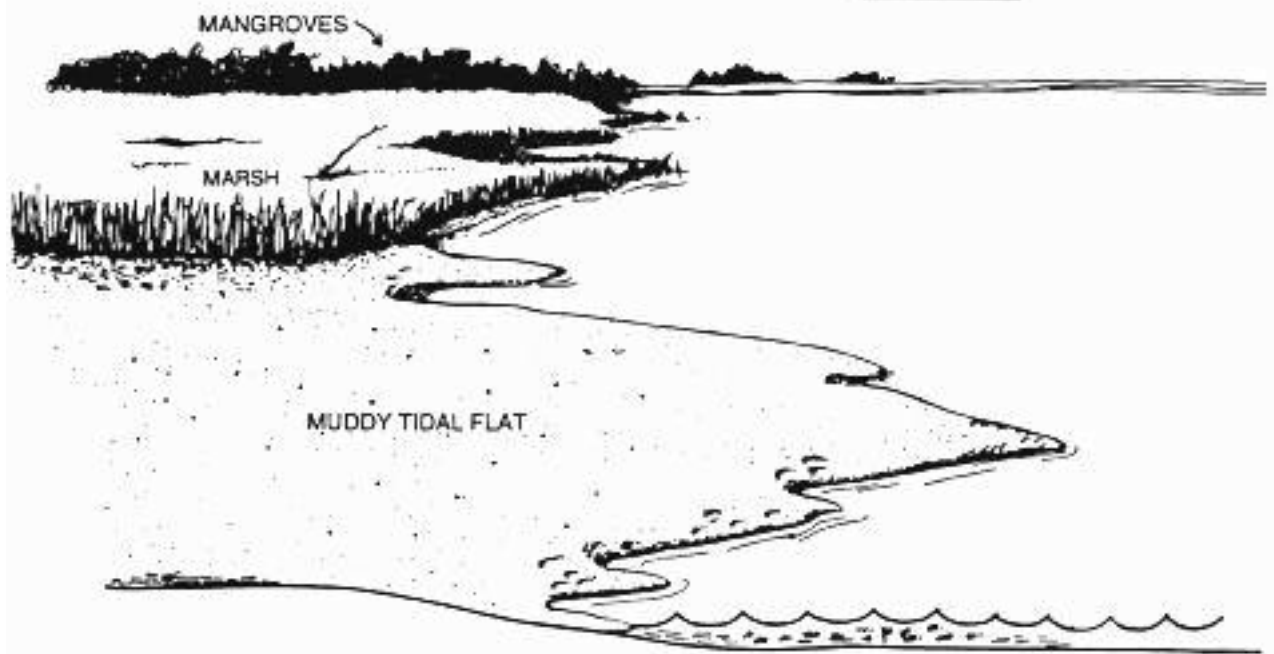
□ Foot traffic on oiled tidal flats should be prohibited.

□ If cleanup is necessary, it should be restricted to the upper reaches of the high-tide swash line or be conducted from boats.

□ Passive cleanup efforts such as deployment of sorbent boom can be used to recover oil as it is removed naturally, but they must be changed frequently to be effective.

□ Any cleanup should be supervised closely to minimize the mixing of oil into the sediment during the cleanup effort.

ESI=9



ESI=10A Mangroves

Description □ Mangroves are the most sensitive shoreline habitat to oil-spill effects.

□ Mangrove forests can range in width from one to hundreds of meters.

□ Red (*Rhizophora*) and black (*Avicennia*) mangroves are the most common mangrove species.

□ The sediment ranges from thin to thick layers of sand and mud, to muddy peat on bedrock, to a rubble veneer on bedrock.

□ They can vary widely in the degree of exposure to wave and tidal energy, with exposed forests along the outer shoreline and sheltered forests in bays and estuaries well-protected from physical processes.

□ There can be many storm swash lines of heavy wrack deposits deep into the forest.

□ The mangrove roots support a rich diversity of attached animals and plants.

Predicted Oil Impact □ As oil enters mangrove forests, their roots and associated epiphytic communities would be covered with a band of oil.

□ Degree and type of acute mortality is oil-type dependent:

- Light oils (gasoline, jet fuel, No. 2 fuel oil) would have acute, toxic effects to both trees and intertidal biota
- Crude oils/heavy refined products are toxic due to coating and sediment contamination

□ Oiling of sediments would occur if large quantities of oil were washed ashore; of particular concern are organic-rich sediments that are exposed at low tide.

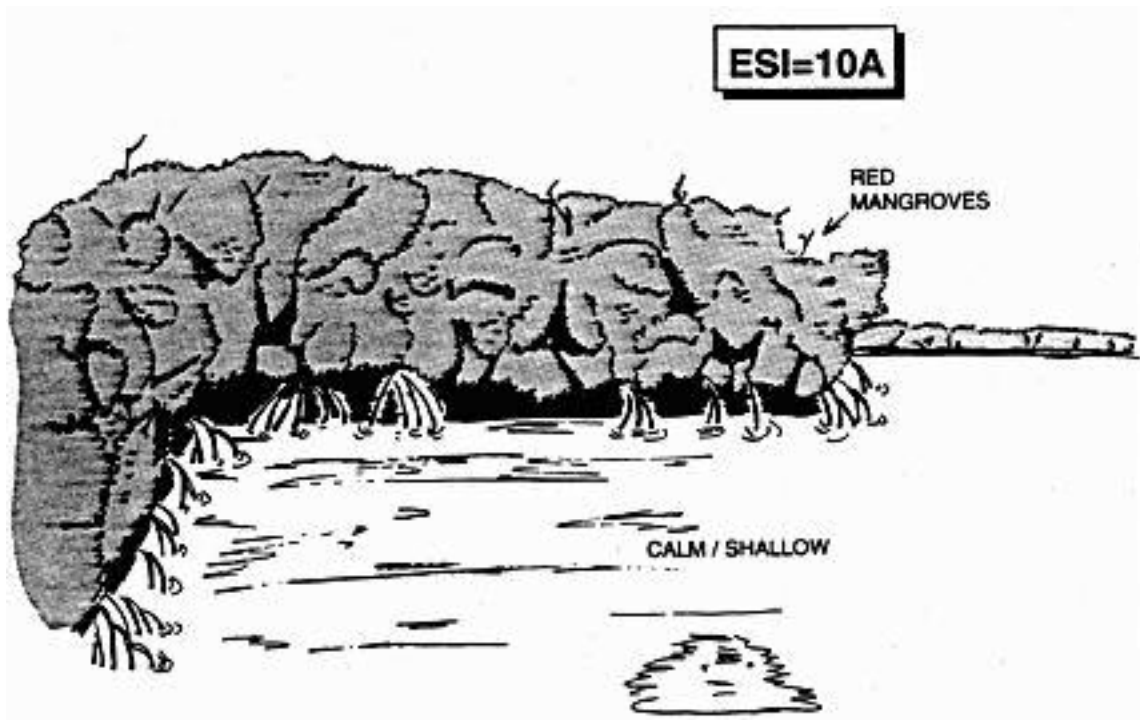
□ No. 2 fuel oil would have the greatest effects due to penetration; it can persist and remain toxic for many years if it penetrates burrows and prop root cavities.

□ Persistence would be long-term with heavy oil accumulations.

□ A beach berm fronting the mangroves would normally limit oil contamination to the seaward side of the berm, preventing oiling of forest interiors.

Recommended Response Activity

□ These highly sensitive areas are very difficult to clean up and thus require the highest protection priority.



- Under most conditions, the best practice is to allow natural recovery, especially where natural cleaning can occur.
- Placement of sorbent boom along the mangrove forest fringe may reduce the quantity of stranded oil significantly.
- Booms should be deployed in an attempt to protect the most sheltered areas where greatest persistence is likely.
- However, deployment of boom is seldom effective with light refined oils because of the low viscosity of these products.
- Heavy accumulations should be skimmed or flushed with low-pressure water flooding, as long as there is NO disturbance or mixing of oil into the substrate. If substrate mixing is likely or unavoidable, it is better to leave the oil to weather naturally.
- Oily debris and wrack can be a source of chronic sheening and should be removed, taking care not to disturb the substrate.
- Vegetation should never be cut or otherwise removed.
- Sorbents can be used to wipe heavy oil coating from prop roots in areas of firm substrate. Close supervision of cleanup is required.
- Nutrient addition may be an option for treatment of residual oil contamination in mangrove sediments. Effectiveness would have to be evaluated case-by-case.

ESI=10B Other Estuarine Wetlands

Description

- Many of the river systems on tropical islands contain estuarine wetlands which, in some areas, extend over 1 km inland.
- Principal plants on Pacific Ocean Islands include the Nipa palm (*Nypa fruticans*), pango (*Hibiscus tiliaceus*), tangen-tangan (*Leucaena* sp.), bamboo, and miscellaneous grasses, among others.
- These wetlands have high density and diversity of plants, and they are important habitats for many animals.

Predicted Oil Impact

- Estuarine conditions allow the possibility for oil to be transported into these wetlands during flood tides.
- Specific effects of oil on many of these species is unknown, but wetlands are usually heavily impacted during oil spills.
- Oil adheres readily to the vegetation.
- The band of coating would vary widely, depending upon the tidal stage at the time that the oil slicks are in the vegetation. There can be multiple bands.
- Large slicks would persist through multiple tidal cycles and coat the entire plant from the high-tide line to the base.
- Fresh crudes and heavy oils would tend to “slide” down the stem over time in warmer weather and pool on the sediments at the base of the plant.
- Weathered oils do not “slide” as much; the oil stays on the vegetation.
- If the vegetation is thick, heavy oil contamination can be restricted to the outer fringing vegetation, with penetration and lighter oiling further inland.
- Lighter oils (light refined, fresh crudes) can penetrate deeply into the wetland, to the high-tide line.
- Medium to heavy oils do not readily adhere to or penetrate the wet, muddy sediments, but they can pool on the surface and in burrows.
- Light oils can penetrate the top few cm of sediment and deeply into burrows and cracks (up to 100 cm).



Recommended Response Activity

- ☐ These highly sensitive areas are very difficult to clean up, therefore they require the highest of priority protection.
- ☐ Under most conditions, the best practice is to allow natural recovery, especially where natural cleaning is effective, such as along river channels exposed to wave and tidal energy.
- ☐ Placement of sorbent boom along the vegetative fringe may reduce the quantity of oil impacting the area.
- ☐ Deployment of boom is seldom effective with light refined oils because of the low viscosity of these products.
- ☐ For other products, booms should be deployed to attempt to protect the most sheltered areas where greatest persistence is likely.
- ☐ Heavy accumulations should be skimmed or flushed with low-pressure water flooding, as long as there is NO disturbance or mixing of oil into the substrate. If substrate mixing is likely or unavoidable, it is better to leave the oil to weather naturally.
- ☐ Oily debris should be removed, taking care not to disturb the substrate.
- ☐ Live vegetation should not be cut or otherwise removed.
- ☐ These activities should be closely supervised.

Special Considerations

Coral Reefs

Description

This section deals with coral reefs, that is, structures which are created and maintained by the establishment and growth of populations of hermatypic coral and coralline algae. Coral reefs are mostly subtidal in nature, although the most shallow portions of some reefs can be exposed during very low tides. The four major categories of reefs are:

- *Fringing reefs* - long, narrow bands of coral reefs parallel to and near the shoreline. When near coastal development, they are susceptible to stress from sedimentation and chronic pollution.
- *Barrier reefs* - similar to fringing reefs except that they are further offshore and much broader.
- *Atoll reefs* - reefs formed by the buildup of coral on the rim of a subsiding volcano. They are circular or portions of a circle, forming a sheltered lagoon.
- *Patch reefs* - small, irregularly shaped coral reefs that occur in isolated patches rather than long bands.

Recent studies have found that many coral species throughout the world spawn simultaneously over a very short time period (days), a behavior which makes the entire year's recruitment very vulnerable.

Predicted Oil Impact □ Oil would usually pass over subtidal reefs with no direct contamination.

- Exceptions where floating oil would potentially coat living reef communities are:
 - Landward border of fringing reef platforms which are exposed at low tide
 - Certain reef-flats which are floored with bedrock and may have high coral heads growing on them, and
 - The outer, seaward part of reef-flat platforms that are usually slightly elevated and are consequently exposed at low tide and heavily washed by waves
- Except in the event of extremely heavy oil concentrations, oil would be readily removed from these reef areas with the rising tide. This is especially true of the outer reef platform.

□ There is little documentation of long-term impacts to coral reefs from oil spills, except in the situations where the pollution is chronic, or in the rare instance where oiled sediments might be transported to the bottom. The best case history is a five-year study of the corals impacted by the Texaco spill in Panama.

□ Studies have shown sublethal impacts to coral from oil spills, with short-term recovery.

□ Greatest impacts to the reef would result from spills of light refined products directly into the shallow waters overlying reefs and where high concentrations of water-soluble fractions persist. Also, large spills during the period of simultaneous spawning could affect the larvae of all coral species, regardless of water depth.

□ Of greater concern at most spills are the organisms that concentrate around the coral reef habitat.

Recommended Response Activity

□ Sorbents and booms should be used to prevent oil from being transported over the reefs.

□ No cleanup is recommended. Cleanup of the reef itself by natural processes is expected to be rapid.

□ Oil should be removed from adjacent intertidal areas to prevent chronic exposure of the corals to oil leaching from these sites.

□ Any use of sorbents should be limited to those that can be contained and recovered.

Seagrasses

Description

Seagrasses in tropical environments in the Caribbean and U.S. Pacific territories are dominated by turtlegrass (*Thalassia sp.*), manatee grass (*Syringodium sp.*), and shoalgrass (*Halodule sp.* and *Enhalus sp.*). Their distribution is limited by water temperature, light penetration (thus turbidity and water depth), and salinity. Seagrasses play a very important role in shallow coastal marine environments, including:

□ Sediment stabilization.

□ Detritus production which provides a major basis of food chains, although the bulk of the biomass is in the sediments (in the rhizomes).

□ Substrate for a highly productive epiphytic community, with a total biomass which often approaches or exceeds that of the plants themselves.

□ A directly utilized food source for a few organisms, namely turtles, who graze on seagrasses.

□ Habitat which is utilized by fish and shellfish as nursery areas.

□ Key role in nutrient cycling, including nitrogen, phosphorous, and sulfur.

Predicted Oil Impact

□ Greatest impacts occur on seagrasses that are intertidal, where the oil comes in direct contact with exposed blades.

□ Oil readily adheres to exposed blades, particularly when the oil is heavy or weathered.

□ Unless the sediments are also oiled, any oiled blades are quickly defoliated and the plants have the capacity to grow new leaves (the leaves grow from a relatively protected meristem). Recovery can occur with 6-12 months.

□ Plant mortality has been observed at spills when the sediments were contaminated by oil, although such incidents have been rare.

□ The most sensitive component of the seagrass ecosystem is the epiphytic community and juvenile organisms using the grass beds as a nursery. These species and life stages can be highly sensitive to both the water-soluble and insoluble fractions of oil.

□ The plants can uptake hydrocarbons from the water column and sediments, potentially lowering their tolerances to other stresses.

Recommended Response Activity

□ Where possible, oil should be prevented from entering shallow, sheltered areas where seagrass beds occur. Highest priority should be those beds which are known to provide nursery areas for commercially important species.

□ Little can be done to protect seagrass beds along exposed sections of shoreline.

□ Extreme care should be taken not to disturb the sediments during cleanup operations in the vicinity of seagrasses, which could result in total loss of the seagrass bed.

□ Cleanup efforts onshore should not result in the deposition of oiled sediments in the beds, e.g., from water flushing of intertidal substrates.

□ Oiled wrack on adjacent beaches should be removed quickly, to prevent re-entry of oiled detritus into the nearshore environment.

□ Removal of oiled blades should only be considered when it can be demonstrated that special species (such as endangered turtles) are at significant risk of injury from contact or grazing on the blades.

□ Otherwise, the best strategy for oiled blades is to allow natural recovery; the oiled blades are sloughed off within days to weeks.

Turtle Nesting Beaches

Description

This section deals with beaches which are used by turtles for laying and incubation of eggs. The most sensitive life stages are the eggs when they are buried in the sand, the hatchlings as they dig their way out of the nest and enter the water, and young juveniles which are pelagic surface dwellers. Important aspects of the life histories of the five species of sea turtles which spend part of their lives in coastal waters (Kemp's ridley, loggerhead, green turtle, hawksbill, and leatherback) are:

□ Sea turtles may nest every 1-4 years after reaching maturity (which is estimated to take 10-50 years).

□ The female may lay anywhere from 1 to 10 clutches of about 100 eggs per season, depending on the species.

□ The nests are normally located above the high-tide level.

□ Incubation takes about two months.

□ The greatest source of natural mortality of sea turtles is probably predation of hatchlings in the ocean.

□ There is strong nesting beach fidelity.

Predicted Oil Impact

□ The greatest threat of oil spills on land is the toxic effects of direct contamination of eggs in the nest. However, it should be noted that, because the eggs are laid above the high-tide line, direct oiling is unlikely when it occurs during nesting.

□ The number of unhatched eggs is much higher when fresh crude oil is on the sand surface during the last half to quarter of the incubation period. This effect is thought

to be due to displacement of oxygen by the lighter oil fractions when the rate of oxygen consumption is at its peak.

□ Many weathered crude oils are less toxic to turtle eggs than fresh crude oils.

□ Hatchling morphology is affected by the amount of oil and time of oiling. Weights are lower and sizes are smaller when the eggs are exposed to a light dosage of oil mixed in the sand.

□ Young turtles exposed to oil in water in tests have demonstrated disturbed diving and respiratory patterns, decreased blood glucose levels, reddening and sloughing off of the skin, and dysfunctioning of the salt glands.

□ Turtles feed on floating objects, therefore they are susceptible to ingestion of tarballs and coating of oil on their flippers and in their mouths.

Recommended Response Activity

□ Removal of eggs from nests along beaches under immediate threat of oiling is seldom an option because the eggs should not be moved after 24 hours post-laying. The yolks and embryos settle to one side within 48 hours, thus any movement after that period usually results in decreased viability.

□ Only experienced or trained personnel should attempt to move threatened eggs.

□ Nesting beaches should receive highest priority for cleanup if they are oiled prior to the nesting period.

□ Rapid removal of oil from a beach with active nests may be attempted, particularly if the oil has not reached the nest sites.

□ If hatchlings emerge while oil is coming onshore and slicks are still in nearshore waters, hatchlings should be captured and released in clean waters.

□ Hatchlings usually emerge during night hours, so nests should be monitored to intercept hatchlings before they swim into contaminated waters.

□ Cleanup activities on nesting beaches should be monitored by experienced personnel so that the nests are not physically disturbed.

Other special considerations may need to be developed for:

Birds □ High concentration migration stopovers

□ Rookeries and nesting sites

Marine Mammals

□ Population concentration areas

Terrestrial Mammals and Plants

□ Concentration areas

□ Threatened and endangered plants adjacent to the shoreline

Fish and Shellfish □ Estuarine areas which are important fish nursery areas

□ Shellfish seed beds and nursery areas, high concentration areas

Recreation □ High-use recreational beaches

□ Marinas and boat ramps

□ High use boating, fishing, and diving areas

Management Areas □ State marine parks/federal marine sanctuaries

□ Wildlife management areas and refuges

□ Nature preserves and reserves

Resource Extraction

□ Commercial fishing areas

Aquaculture sites

□ Subsistence harvest areas

□

Water intakes

□

Cultural Resources

□ Archaeological and other historically significant sites

3 Shoreline Mapping and Prioritization

Guidelines for Shoreline Surveys

At most spills, a repetitive, detailed, and systematic survey of the extent and degree of shoreline contamination is needed to:

- 1 Assess the need for shoreline cleanup
- 2 Select the most appropriate cleanup method
- 3 Determine priorities for shoreline cleanup
- 4 Document the spatial oil distribution over time
- 5 Maintain internally consistent historical record of stranded oil distribution for use by other scientific surveys of intertidal and subtidal impacts.

Though general approvals for use of shoreline cleanup methods are to be developed during planning stages, site-specific cleanup recommendations must be based on field data on the shoreline types and type and degree of shoreline contamination. Thus, shoreline surveys become a very important component of the decision-making process, and they must be conducted in a systematic manner. Also, repeated surveys are needed to monitor the effectiveness and effects of on-going treatment methods (any migration of beached oil, as well as natural recovery), so that the need for additional treatment or constraints can be evaluated.

Several methods of data collection can be used to obtain information on shoreline character and degree of oil contamination. For example, aerial surveys provide reconnaissance-level information that is necessary for broad scale evaluations, definition of the impacted area, and general characterization of the oiling conditions. During aerial surveys, observers should note presence of resources at risk that need immediate protection, recommendations for boom deployment sites, access points, or restrictions, etc.

Ground surveys provide detailed information necessary for site-specific decisions on shoreline treatment techniques. The methods and forms for ground surveys described here have been modified from those developed by Exxon and their contractors during the 1989 *Exxon Valdez* oil spill in Prince William Sound (Owens and Teal, 1990). These methods

have been revised for application to specific regions, such as the Oil Spill SCAT Manual for the coastline of British Columbia (Environment Canada, 1992). Guidance on methods and forms for use in ground surveys are described in the following section.

Ground Surveys

The primary purpose of ground surveys is to collect information on the extent of oiling on various shoreline types and to feed this information into the decision-making process for shoreline cleanup. Thus, it is imperative that survey teams use consistent methods and terminology throughout the spill event. A series of forms have been developed as the basis for data collection and reporting. Field teams should conduct a training program so all members understand the objectives, methods, data forms, terms, etc., and to insure standardized application. The teams need to visit at least one site as a group so that their observations can be calibrated.

At a large spill, the scientific members of the Shoreline Assessment Team usually consist of the following:

Oil Spill Scientist/Coastal Geologist (OG)

Should have at least B.Sc. degree in geology or physical geography and oil-spill experience, plus familiarity with shorelines of impacted area. Responsible for logistical/direction and detailed documentation (i.e., completion of Shoreline Survey Evaluation Form).

Ecologist (ECO)

Should have degree in biology and oil-spill experience, plus familiarity with the local affected habitats and organisms. Responsible for characterization of the intertidal communities and assessing affects of oil or cleanup efforts.

Archaeologist (ARCH)

Usually a M.S.- or Ph.D.-level archaeologist. Main responsibilities are identifying and updating archaeological and historical sites, and determining potential impacts of oiling or cleanup measures.

In addition to the core scientific group, the team also usually has representatives of: (a) operations group of the party responsible for cleanup; (b) the State government; (c) the Federal Government; and (d) the land owner or manager. At smaller spills or under emergency conditions, team members may have to assume more than one role.

Selecting and Naming Segments

The general approach is to divide the impacted area into segments, which are sections of the oiled shoreline for which detailed observations are recorded. The size of segments depends on the variabilities in degree of oiling and shoreline type. Boundaries of the segments should be defined where the shoreline geomorphology or degree of oiling changes significantly. However, it should be noted that new forms are completed for each segment, so the interval should not be so small that the number of forms required becomes unmanageable for the size of the spill. Segment lengths up to several kilometers would be acceptable for large spills, where smaller spills may have lengths in the hundreds of meters.

Numbering of the segments in a logical order helps location recognition. Usually an alpha-numeric code is employed, with two-letter abbreviations for the local area (e.g., HB for segments located along the Hanama Bay and CI for those on Coconut Island), and numbers for each segment in the order it was surveyed. Thus, if Coconut Island was divided into four segments, they would be designated as CI-1 through CI-4. The boundaries of the segments would be delineated on detailed maps.

The Shoreline Survey Evaluation Forms

For each segment, the Shoreline Survey Evaluation Form should be completed. Two versions of a Shoreline Survey Evaluation Form have been included in this manual. This section briefly outlines the methods to be used to complete the long form.

The Shoreline Terminology/Codes sheet lists the common terms and abbreviations to be used to describe the oil, sediments, and other features on the forms and sketch maps. The blocks on the Shoreline Survey Evaluation Form, where the codes are used, are indicated on the sheet. One member of the team, usually the OG, should be responsible for completing the forms, although all members collect the field data. The segment is walked and observations on the oiling conditions are recorded. It is very important to make accurate measurements or estimates of the dimensions of each type of oil. Areas containing surface oil are shown on a field sketch of the shoreline segment. The oiled sites, which are designated by letters, are described systematically by filling in Block 6 of the Shoreline Survey Evaluation Form. A blank sketch form is attached, and an example is included for illustration purposes.

Subsurface oil is investigated by digging trenches and recording measurements of the degree and depths of subsurface oil. Each trench is numbered, and the location of each trench should be shown on the sketch. A symbol is used to differentiate between oiled and clean

trenches (filled-in versus open triangle). The sketches are a very important component of the field survey data; they are better than photographs at depicting overall conditions. Sketches help reviewers put the tabular data on oiled area and type in perspective, thereby facilitating decision making. They provide documentation in a manner not achieved by photographs, videotapes, or statistics, and they allow ready comparisons over time.

The objective of the surveys should always be kept in mind: to collect the information needed by operations personnel and decision makers to formulate and approve shoreline treatment plans. An operations manager should be able to use the data to develop a detailed cleanup plan, including equipment and manpower needs, from these surveys. Government agencies should be able to use the data, along with natural resource information, to develop cleanup priorities, identify site-specific or temporal constraints, and approve the proposed cleanup plan.

The Comment section and sketch map will be important references for documentation of sensitive resources and impacts. The Comments section should highlight the information the field team considers to be very important to the shoreline treatment decision making. The Comments section is also where the field team makes treatment recommendations that would best remove the oil without causing further environmental damage, or identify specific constraints that should be incorporated into the cleanup plan.

Abbreviated Shoreline Surveys

Comprehensive surveys, as outlined above, are not always appropriate for smaller spills, or those that are relatively simple in oiling conditions. Yet, there is still the need for systematic observations and documentation of shoreline oiling conditions and cleanup progress. An abbreviated shoreline survey at smaller or less complicated spills would consist of:

- Trained team(s) with members from State and Federal response agencies, the cleanup contractor, and responsible party to document shoreline oiling conditions.
- Consistent terminology for description of oiling conditions and of shoreline features.
- Segmentation of the oiled areas into sections by shoreline type, degree of oiling, etc., and for which specific cleanup recommendations can be made.
- Field sketches to identify the area surveyed, record oil observations, identify sensitive areas to avoid, and utilize as the basis for a work plan by cleanup crews.
- Simplified forms for recording observations, making recommendations for cleanup, listing segment-specific restrictions, and generating summary statistics on shoreline

oiling conditions. The forms would also document team composition, samples, photographs, etc., for each segment.

The Shoreline Survey Evaluation Short Form was developed to meet the documentation requirements at smaller spills. The form contains space for recording measurements of the length and degree of shoreline contamination, but allows for textual descriptions of the oiling conditions. It is important that the standard terms be used in these descriptions and that specific features be shown on the field sketch. The Short Form also includes space for recording segment-specific considerations for cleanup operations. This section would include information on the location of areas that should be avoided or that require special care or restricted activities by cleanup crews. For example, the location of sensitive wildlife such as eagle nests would be noted in this section. Sites to be avoided, such as archeological sites or private property, would be delineated. Photographs and samples taken at the site would be recorded in the section for Other Comments.

Surface Oil Cover Summary

As the shoreline surveys are being completed, a rating system must be used to describe and summarize the surface oil conditions on the shoreline. These conditions are:

- ☐ Heavy
- ☐ Moderate
- ☐ Light ☐ Very Light

These ratings are assigned based upon the Oil Category Width and the Surface Oil Distribution, as defined on the sheet on Shoreline Oil Terminology/Codes. Following is an Initial Surface Oil Cover Matrix for use during spills.

		Width of Oiled Areas			
		Wide >6 m	Medium >3 - 6 m	Narrow >0.5 - 3 m	Very Narrow <0.5 m
Oil Distribution	Continuous 91 - 100%	Heavy	Heavy	Moderate	Light
	Broken 51 - 90%	Heavy	Heavy	Moderate	Light
	Patchy 11 - 50%	Moderate	Moderate	Light	Very Light
	Sporadic 1 - 10%	Light	Light	Very Light	Very Light
	Trace <1%	Very Light	Very Light	Very Light	Very Light

Shoreline Oil Terminology/Codes

11/5/92

Shoreline Slope

(Enter in Block 3)

Low Less than 30 degrees Medium
Between 31 and 60 degrees High
Between 61 and 90 degrees Vertical
Vertical or near vertical

Oil Category Width (Enter in Block 4) (To be determined for each segment, depending on width of the intertidal zone)

W Wide	M Medium	N	> 6 m wide > 3 m
Narrow	V Very Narrow		to ≤ 6 m > 0.5 m
			to ≤ 3 m ≤ 0.5 m

Oil Distribution (Enter in Block 5)

C Continuous	B	91 - 100%	
Broken	P Patchy	S	51 - 90%
Sporadic	T Trace		11 - 50%
			1 - 10%
			<1%

Surface Oiling Descriptors - Thickness (Enter in Block 5)

PO Pooled Oil (fresh oil or mousse > 1 cm thick) CV Cover (oil or mousse from >0.1 cm to <1 cm on any surface) CT Coat (visible oil <0.1 cm, which can be scrapped off with fingernail) ST Stain (visible oil, which cannot be scrapped off with fingernail) FL Film (transparent or iridescent sheen or oily film)

Surface Oiling Descriptors - Type (Enter in Block 5)

FR Fresh Oil (unweathered, liquid oil) MS Mousse (emulsified oil occurring over broad areas) TB Tarballs (discrete accumulations of oil <10 cm in diameter) PT Patties (discrete accumulations of oil >10 cm in diameter) TC Tar (highly weathered oil, of tarry, nearly solid consistency) SR Surface Oil Residue (non-cohesive, heavily oiled surface sediments, characterized as soft, incipient asphalt pavements) AP Asphalt Pavements (cohesive, heavily oiled surface sediments) NO No Oil DB Debris; logs, vegetation, rubbish, garbage, response items such as booms, etc.

Shoreline Oil Terminology/Codes 11/5/92

Subsurface Oiling Descriptors (Enter in Block 6)

SAP Subsurface asphalt pavement (cohesive)

OP Oil-Filled Pores (pore spaces are completely filled with oil, to the extent that the oil flows out of the sediments when disturbed). May also consist of weathered oil such as a buried lens of asphalt pavement

PP Partially Filled Pores (pore spaces partially filled with oil, but the oil does not flow out of the sediments when disturbed) OR Oil Residue (sediments are visibly oiled with black/brown coat or cover on the clasts, but little or no accumulation of oil within the pore spaces) OF Oil Film (sediments are lightly oiled with an oil film, or stain on the clasts)

TR Trace (discontinuous film or spots of oil, or an odor or tackiness)

NO No Oil (no evidence of any type of oil)

Shoreline Zone (Enter in Blocks 5 and 6)

SU Supratidal (above normal spring high tide levels) UI

Upper Intertidal MI Middle Intertidal LI Lower Intertidal

Sediment Types

(Enter in Blocks 5 and 6)

R Bedrock outcrops

Gravel B Boulder (>256 mm in diameter) C

Cobble (64-256 mm) P Pebble (4-64 mm) G

Granule (2-4 mm)

S Sand (0.06-2 mm) M Mud (silt and clay, < 0.06 mm) AR Riprap (man-made permeable rubble) AW Seawalls (impermeable) AP Man-made pilings

Sheen Color

(Enter in Block 6)

B Brown R

Rainbow S Silver N

None

1 G Segment Name: E
Segment ID: N Surveyed
From: Foot / Boat /
Helicopter

Survey Date:
Weather: Sun / Clouds / Fog / Rain / Snow

Survey (use military time) Time: to

2 T Team No. E OG : A ECO : M
ARCH :

3 S Overall
Classification for
UITZ-select one H
Bedrock: O
Manmade:
Permeable ____
Impermeable ____ Cliff ____ Platform

State: for:

Operations:

Sediment Flat:
Boulder-Cobble ____
Sand _ Pebble-
Cobble ____ Sand-
Gravel ____

Sediment Beach: Boulder-Cobble ____
Sand ____ Sand-Gravel ____

4 L Geomorphology A
Slope: Low ____% N
Estimated Segment
Length: D Access
Restrictions: Med. ____% High ____% Vert. ____%
Wave Exposure: Low / Medium / High

m Patties/Tarballs m
Debris/Amount: Logs m

Total Pavement: sq.m by cm

bags Oiled Debris?

D
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Distribution (DIST): C = 100-91%; B = 90-51%; P = 50-11%; S = 10-1%; T = <1% Photo Roll # _____ Frames _____

7
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S
U
R
F
A
C
E

TRENCHES
Sheet Color: B = Brown R = Rainbow S = Silver N = None

TRENCH DEPT H cm
OILED ZONE cm-cm

SUBSURFACE OIL CHARACTER

WATER TANK BL E cm
SH EE N SUB SUR FAC E CO LO

SURFACE SEDIMENT S

CLEAN BEL OW M L O P I I P P

8 COMMENTS
I

1 G Segment Name: E
 Segment ID: N Surveyed
 From: Foot / Boat /
 Helicopter

Survey Date:

Survey (use military time) Time: to

Weather: Sun / Clouds / Fog / Rain / Snow

2 T Team No. E Name: A Name: M Name:

for: Name: for:
 from: Name: from:

Length of Shoreline for Each Oil Category

4	Oil Distribution	Length of Shoreline for Each Oil Category				No Oil	Total Estimated Segment Length
		Wide (>6m)	Medium (3-6m)	Narrow (0.5-3m)	Very Narrow (<0.5m)		
O	Continuous (91-100%)	_____ m	_____ m	_____ m	_____ m	___ m	_____ m
I	Broken (51-90%)	_____ m	_____ m	_____ m	_____ m		
L	Patchy (11-50%)	_____ m	_____ m	_____ m	_____ m		
	Sporadic (1-10%)	_____ m	_____ m	_____ m	_____ m		

5 Description of oiling conditions (use standard terms/refer to sketch)

SURFACE OIL:

SUBSURFACE OIL:

6 Segment-specific considerations for cleanup operations
 (sensitive wildlife areas to avoid, etc.)

7 Other Comments

SKETCH MAP

Segment Name_____

Segment No. _____

Date_____

Names_____

Checklist

__North

Arrow__Scale__Oil

Distribution__High

-Tide Line__Low-

Tide

Line__Substrate

Types__Trench

Locations

Legend

¹ ⊗ Trench

Number. No

Subsurface Oil

² ⑦

Trench Number.

Subsurface Oil

SKETCH MAP

Segment Name OYSTERCATCHER BAY, CAL.

Segment No. CN-12

Date 20 October 1991

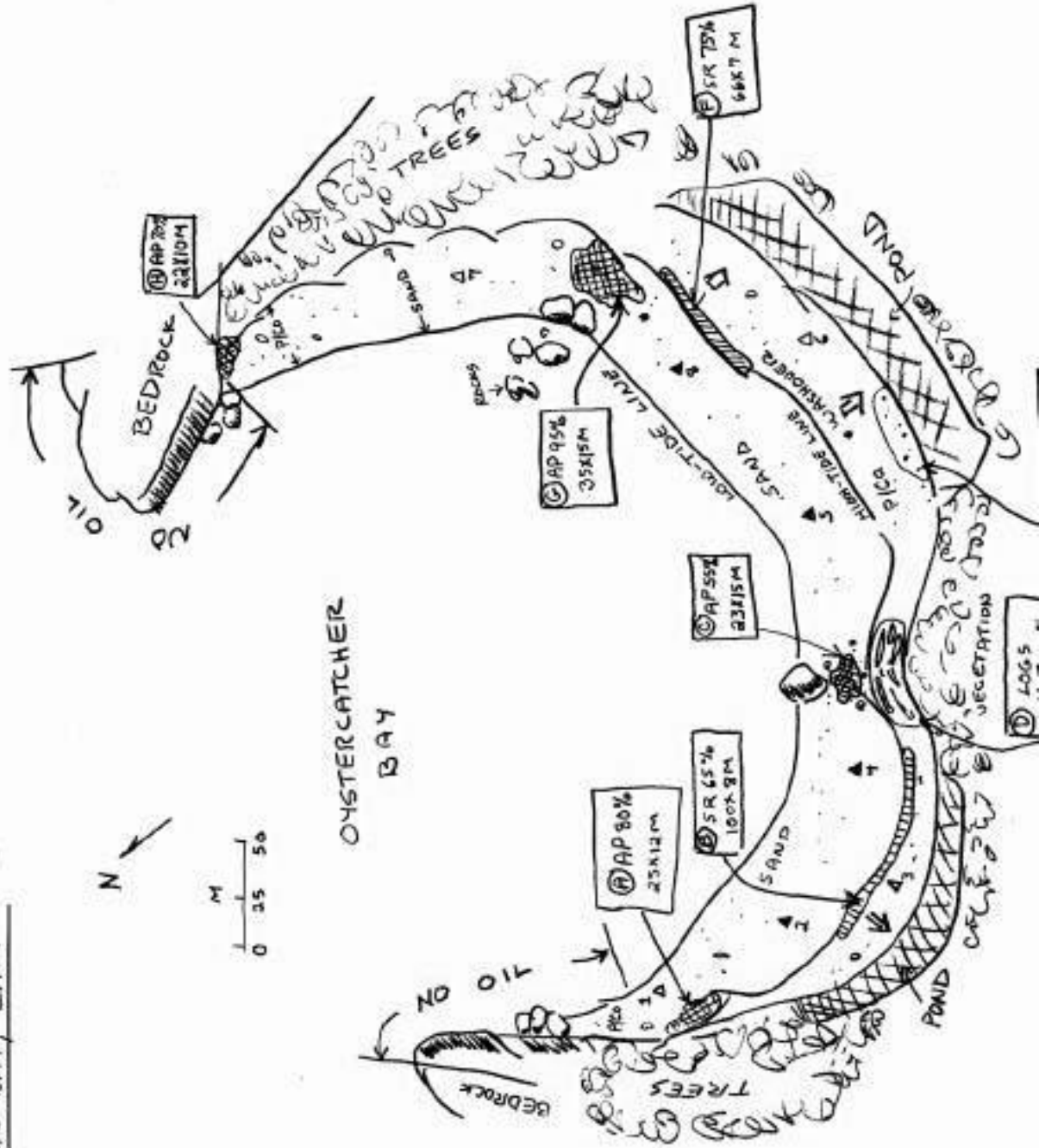
Names (OG) Y.B. Hadley

Checklist

- ☒ North Arrow
- ☒ Scale
- ☒ Oil Distribution
- ☒ High Tide Line
- ☒ Low Tide Line
- ☒ Substrate Types
- ☒ Trench Locations

Legend

- 1 Δ
Trench Number.
No Subsurface Oil
- 2 \blacktriangle
Trench Number.
Subsurface Oil



4 Matrices of Recommended Countermeasure Methods by Oil and Shoreline Type

The matrices included in this chapter show which shoreline countermeasure techniques have been considered for the ten shoreline types described in Chapter 2. Four matrices have been constructed for the major categories of oil (very light, light, medium, and heavy).

Countermeasure methods are described in Chapters 5 and 6. Countermeasures in Chapter 5 are traditional techniques that the OSC can use without any additional concurrence.

However, the cutting of vegetation countermeasure should be used only during specific seasonal windows under specific conditions and with landowner approval.

Countermeasures in Chapter 6 are described under a separate section called “Treatment Methods Requiring Regional Response Team Approval” and may be useful in certain situations. The matrices are a particularly dynamic component of the manual and should continue to be revised as the existing techniques are used and evaluated, and as both old and new techniques are refined.

Each matrix has a written explanation of how it is to be used as a countermeasure advisability matrix. The matrix is only a general guide for removing oil from shoreline substrates. It must be used in conjunction with the entire “Shoreline Countermeasures Manual” plus field observations and scientific advice. The countermeasures listed are not necessarily the best under all circumstances, and any listed technique may need to be used in conjunction with other techniques (including ones not listed herein). The Federal On-Scene Coordinator (FOSC) or the State OSC operating with the FOSC's authorization has the responsibility for and authority to determine which countermeasure(s) are appropriate for the various situations encountered.

Selection of countermeasure techniques to be used in each spill is based upon the degree of oil contamination, shoreline types, and the presence of sensitive resources. Extremely sensitive areas are limited to manual cleanup methods. It is important to note that the primary goal of countermeasure implementation is to speed up or enhance environmental recovery of the shoreline habitats. Aesthetic considerations are secondary but also important. Nevertheless, shoreline countermeasures should cause no further injury or

destruction to the environment. The three categories of guidance used in the matrices are defined as follows:

<i>R</i>	Recommended	Method that best achieves the goal of minimizing destruction or injury to the environment
<i>Shaded</i>	Not recommended	

Shoreline Countermeasure Matrix

Very Light Oils (Jet fuels, Gasoline)

- * Highly volatile (should all evaporate within 1 – 2 days)
- * High concentrations of toxic (soluble) compounds
- * Result: Localized, severe impacts to water column and intertidal resources
- * Duration of impact is a function of the resource recovery rate
- * No dispersion necessary

		SHORELINE TYPE CODES									
		1 - Seawalls and piers					6 - Gravel beaches and riprap structures				
		2 - Exposed wave-cut platforms					7 - Exposed tidal flats				
		3 - Fine-grained sand beaches					8 - Sheltered rocky shores				
		4 - Coarse-grained sand beaches					9 - Sheltered tidal flats				
		5 - Mixed sand and gravel (or shell) beaches					10 - Fringing and extensive salt marshes				
COUNTERMEASURE		SHORELINE TYPES									
		1	2	3	4	5	6	7	8	9	10
1) No Action											
2) Manual Removal											
3) Passive Collection (Sorbents)											
4) Debris Removal											
5) Trenching											
6) Sediment Removal											
7) Ambient Water Flooding (Deluge)											
8) Ambient Water Washing											
a) Low Pressure (< 50 psi)											
b) High Pressure (< 100 psi)											
9) Warm Water Washing/Mod. -High Pressure											
10) Hot Water/High Pressure Washing											
11) Slurry Sand Blasting											
12) Vacuum											
13) Sediment Reworking †											
14) Excavation, Cleansing, and Replacement											
15) Cutting Vegetation											
16) Chemical Treatment †											
a) Oil Stabilization with Elastomers											
b) Protection of Beaches											
c) Cleaning of Beaches											
17) <i>In situ</i> Burning of Shorelines †											
18) Nutrient Enhancement †											
19) Microbial Addition †											

† - Requires RRT approval

R - Recommended - may be preferred alternative

C - Conditional



Do Not Use

This countermeasure advisability matrix is only a general guide for removal of oil from shoreline substrates. It must be used in conjunction with the entire Shoreline Countermeasures Manual plus field observations and scientific advice. The countermeasures listed are not necessarily the best under all circumstances, and any listed technique may need to be used in conjunction with other techniques (including ones not listed herein). The Federal On-Scene Coordinator (FOSC) or the state OSC operating with the FOSC's authorization has the responsibility for and authority to determine which countermeasure(s) are appropriate for the various situations encountered. Selection of countermeasures is based on the degree of oil contamination, the shoreline type, and the presence of sensitive resources. Extremely sensitive areas are limited to manual cleanup countermeasures.

Shoreline Countermeasure Matrix

Light Oils (Diesel, No. 2 Fuel Oils, Light Crudes)

- * Moderately volatile; will leave residue (up to 1/3 of spilled amount)
- * Moderate concentrations of toxic (soluble) compounds
- * Will "oil" intertidal resources with long-term contamination potential
- * Has potential for subtidal impacts (dissolution, mixing, sorption onto suspended sediments)
- * No dispersion necessary
- * Cleanup can be very effective

SHORELINE TYPE CODES


- | | |
|--|--|
| 1 - Seawalls and piers | 6 - Gravel beaches and riprap structures |
| 2 - Exposed wave-cut platforms | 7 - Exposed tidal flats |
| 3 - Fine-grained sand beaches | 8 - Sheltered rocky shores |
| 4 - Coarse-grained sand beaches | 9 - Sheltered tidal flats |
| 5 - Mixed sand and gravel (or shell) beaches | 10 - Fringing and extensive salt marshes |

COUNTERMEASURE	SHORELINE TYPES									
	1	2	3	4	5	6	7	8	9	10
1) No Action										
2) Manual Removal										
3) Passive Collection (Sorbents)										
4) Debris Removal										
5) Trenching										
6) Sediment Removal										
7) Ambient Water Flooding (Deluge)										
8) Ambient Water Washing										
a) Low Pressure (< 50 psi)										
b) High Pressure (< 100 psi)										
9) Warm Water Washing/Mod.-High Pressure										
10) Hot Water/High Pressure Washing										
11) Slurry Sand Blasting										
12) Vacuum										
13) Sediment Reworking †										
14) Excavation, Cleansing, and Replacement										
15) Cutting Vegetation *										
16) Chemical Treatment †										
a) Oil Stabilization with Elastomers										
b) Protection of Beaches										
c) Cleaning of Beaches										
17) <i>In situ</i> Burning †										
18) Nutrient Enhancement †										
19) Microbial Addition †										

† - Requires RRT approval

R - Recommended - may be preferred alternative

C - Conditional

 Do Not Use

This countermeasure advisability matrix is only a general guide for removal of oil from shoreline substrates. It must be used in conjunction with the entire Shoreline Countermeasures Manual plus field observations and scientific advice. The countermeasures listed are not necessarily the best under all circumstances, and any listed technique may need to be used in conjunction with other techniques (including ones not listed herein). The Federal On-Scene Coordinator (FOSC) or the state OSC operating with the FOSC's authorization has the responsibility for and authority to determine which countermeasure(s) are appropriate for the various situations encountered. Selection of countermeasures is based on the degree of oil contamination, the shoreline type, and the presence of sensitive resources. Extremely sensitive areas are limited to manual cleanup countermeasures.

Shoreline Countermeasure Matrix

Medium Oils (Most Crude Oils)

- * About 1/3 will evaporate within 24 hours
- * Maximum water-soluble fraction is 10 – 100 ppm
- * Oil contamination of intertidal areas can be severe/long term
- * Impact to waterfowl and fur-bearing mammals can be severe
- * Chemical dispersion is an option within 1 – 2 days
- * Cleanup most effective if conducted quickly

SHORELINE TYPE CODES

- | | |
|--|--|
| 1 - Seawalls and piers | 6 - Gravel beaches and riprap structures |
| 2 - Exposed wave-cut platforms | 7 - Exposed tidal flats |
| 3 - Fine-grained sand beaches | 8 - Sheltered rocky shores |
| 4 - Coarse-grained sand beaches | 9 - Sheltered tidal flats |
| 5 - Mixed sand and gravel (or shell) beaches | 10 - Fringing and extensive salt marshes |

COUNTERMEASURE	SHORELINE TYPES									
	1	2	3	4	5	6	7	8	9	10
1) No Action										
2) Manual Removal										
3) Passive Collection (Sorbents)										
4) Debris Removal										
5) Trenching										
6) Sediment Removal										
7) Ambient Water Flooding (Deluge)										
8) Ambient Water Washing										
a) Low Pressure (< 50 psi)										
b) High Pressure (< 100 psi)										
9) Warm Water Washing/Mod.-High Pressure										
10) Hot Water/High Pressure Washing										
11) Slurry Sand Blasting										
12) Vacuum										
13) Sediment Reworking †										
14) Excavation, Cleansing, and Replacement										
15) Cutting Vegetation *										
16) Chemical Treatment †										
a) Oil Stabilization with Elastomizers										
b) Protection of Beaches										
c) Cleaning of Beaches										
17) <i>In situ</i> Burning †										
18) Nutrient Enhancement †										
19) Microbial Addition †										

† - Requires RRT approval

R - Recommended - may be preferred alternative

C - Conditional



Do Not Use

This countermeasure advisability matrix is only a general guide for removal of oil from shoreline substrates. It must be used in conjunction with the entire Shoreline Countermeasures Manual plus field observations and scientific advice. The countermeasures listed are not necessarily the best under all circumstances, and any listed technique may need to be used in conjunction with other techniques (including ones not listed herein). The Federal On-Scene Coordinator (FOSC) or the state OSC operating with the FOSC's authorization has the responsibility for and authority to determine which countermeasure(s) are appropriate for the various situations encountered. Selection of countermeasures is based on the degree of oil contamination, the shoreline type, and the presence of sensitive resources. Extremely sensitive areas are limited to manual cleanup countermeasures.

Shoreline Countermeasure Matrix

Heavy Oils (Heavy Crude Oils, No. 6 fuel, Bunker C)

- * Heavy oils with little or no evaporation or dissolution
- * Water-soluble fraction likely to be <10 ppm
- * Heavy contamination of intertidal areas
- * Severe impacts to waterfowl and fur-bearing mammals (coating and ingestion)
- * Long-term contamination of sediments possible
- * Weathers very slowly
- * Dispersion seldom effective
- * Shoreline cleanup difficult under all conditions

SHORELINE TYPE CODES


- | | |
|--|--|
| 1 - Exposed wave-cut cliffs | 6 - Gravel beaches and riprap structures |
| 2 - Exposed wave-cut platforms | 7 - Exposed tidal flats |
| 3 - Fine-grained sand beaches | 8 - Sheltered rocky shores |
| 4 - Coarse-grained sand beaches | 9 - Sheltered tidal flats |
| 5 - Mixed sand and gravel (or shell) beaches | 10 - Fringing and extensive salt marshes |

COUNTERMEASURE	SHORELINE TYPES									
	1	2	3	4	5	6	7	8	9	10
1) No Action										
2) Manual Removal										
3) Passive Collection (sorbents)										
4) Debris Removal										
5) Trenching										
6) Sediment Removal										
7) Cold Water Flooding (deluge)										
8) Cold Water Washing										
a) Low Pressure (< 50 psi)										
b) High Pressure (< 100 psi)										
9) Warm Water Washing/Mod.-High Pressure										
10) Hot Water/High Pressure Washing										
11) Slurry Sand Blasting										
12) Vacuum										
13) Sediment Reworking †										
14) Excavation, Cleansing, and Replacement										
15) Cutting Vegetation *										
16) Chemical Treatment †										
a) Oil Stabilization with Elastomers										
b) Protection of Beaches										
c) Cleaning of Beaches										
17) <i>In situ</i> Burning †										
18) Nutrient Enhancement †										
19) Microbial Addition †										

*† - Requires RRT approval

R - Recommended - may be preferred alternative

C - Conditional

 Do Not Use

This countermeasure advisability matrix is only a general guide for removal of oil from shoreline substrates. It must be used in conjunction with the entire Shoreline Countermeasures Manual plus field observations and scientific advice. The countermeasures listed are not necessarily the best under all circumstances, and any listed technique may need to be used in conjunction with other techniques (including ones not listed herein). The Federal On-Scene Coordinator (FOSC) or the state OSC operating with the FOSC's authorization has the responsibility for and authority to determine which countermeasure(s) are appropriate for the various situations encountered. Selection of countermeasures is based on the degree of oil contamination, the shoreline type, and the presence of sensitive resources. Extremely sensitive areas are limited to manual cleanup countermeasures.

5 Treatment Methods Not Requiring Regional Response Team Consideration

The following section lists and describes those techniques that have been approved by the Regional Response Team (RRT), Local Response Team, and/or the Area Committee. Methods and equipment currently in use for these approved shoreline treatment methods are described in some detail below. These methods, when used according to the guidelines in this manual, may be used on most sites as part of the OSC-directed response. It should be noted that some of these methods may require other authorizations or permits before work begins. Currently approved methods are:

1 No Action, 2 Manual Removal, 3 Passive Collection (Sorbents), 4 Debris Removal, 5 Trenching, 6 Sediment Removal, 7 Ambient-Water Flooding (Deluge), 8 Ambient-Water/Low-Pressure Washing, 9 Ambient-Water/High-Pressure Washing, 10 Warm-Water/Moderate-to-High-Pressure Washing, 11 Hot-Water/High-Pressure Washing, 12 Slurry Sand Blasting, 13 Vacuum, 14 Sediment Reworking, 15 Sediment Removal, Cleansing, and Replacement and 16 Cutting Vegetation

* May require special consideration

1. No Action

Objective

No attempt is made to remove stranded oil, because there is no proven effective method for cleanup, or it is determined that cleanup will be more harmful to the habitat than leaving the oil in place.

Description

No action is taken. However, the OSC continues to monitor the incident.

Applicable Shoreline Types

Can be used on all shoreline types. When

To Use

If the shoreline is extremely remote or inaccessible, when natural removal rates are very fast, or cleanup actions will do more harm than leaving the oil to be removed naturally.

Biological Constraints

This method may be inappropriate for areas where high numbers of mobile animals (birds, marine mammals, crabs, etc.) use the intertidal zone or adjacent nearshore waters.

Environmental Effects

Intertidal — The same as the oil.

Subtidal — The same as the oil.

2. Manual Removal

Objective

Removing stranded surface oil with hand tools and manual labor.

Description

Removing surface oil and oily debris by manual means (hands, rakes, shovels, etc.) and placing in containers for removal from the shoreline. No mechanized equipment is used.

Applicable Shoreline Types

Can be used on all shoreline types. When

To Use

Generally used on shorelines where the oil can be easily removed by non-mechanical means. Most appropriate for light to moderate oiling conditions.

Biological Constraints

Foot traffic over sensitive areas (shellfish beds, tidal flats, bird nesting areas, turtle nesting beaches, marshes, etc.) is to be restricted. May be periods when shoreline access is restricted (e.g., bird nesting, turtle nesting).

Environmental Effects

Intertidal — Minimal if surface disturbance by cleanup activities and work force movement is limited. Subtidal — None.

3. Passive Collection (Sorbents)

Objective

Removal of oil by adsorption onto oleophilic material placed in the intertidal zone.

Description

Sorbent material is placed on the surface of the shoreline substrate allowing it to absorb oil as it is released by tidal or wave action. Oil removal is dependent on the capacity of the particular sorbent, energy available for lifting oil off the shoreline, and degree of weathering.

Applicable Shoreline Types

Can be used on any shoreline type, especially riprap and on intertidal vegetation. When to Use

When the shoreline oil is mobile and transport of oil is expected on or off the site. The oil must be of a viscosity and thickness to be released by the substrate and absorbed by the sorbent. Often used as a secondary treatment method after gross oil removal, and along sensitive shorelines where access is restricted.

Biological Constraints

None, although this method can be slow, thus allowing oil to remain in critical habitats during sensitive periods of time. Environmental Effects

4. Debris Removal

Objective

Removal of contaminated debris and seagrass wrack.

Description

Manual or mechanical removal of debris from the upper beach face and the zone above high tide beyond the normal wash of waves. Applicable Shoreline Types

Can be used on any shoreline type where safe access is allowed. When to Use

When driftwood, marine debris, and seagrass wrack are heavily contaminated and either a potential source of chronic oil release, an aesthetic problem, or a source of contamination for other organisms on the shoreline.

Biological Constraints

Disturbance to adjacent upland areas should be minimized. Foot traffic over sensitive intertidal areas (tidal flats, bird nesting areas, turtle nesting beaches, marshes, etc.) is to be restricted. May be periods when shoreline access is restricted (e.g., bird nesting, turtle nesting).

Environmental Effects

Intertidal — None.

Subtidal — None.

5. Trenching

Objective

Remove subsurface oil from permeable substrates.

Description

Dig trenches to the depth of the oil and remove oil floating on the water table by vacuum pump or super sucker. Water flooding or high-pressure spraying at ambient temperatures can be used to flush oil to the trench.

When To Use

When large quantities of oil penetrate deeply into permeable sediments and cannot be removed by surface flooding. The oil must be liquid enough to flow at ambient temperatures.

Biological Constraints

Trenches should not be dug in the lower intertidal when seagrasses and organisms are abundant.

Environmental Effects

Intertidal — On gravel beaches, there may be a period of beach instability as the sediments are redistributed after the trenches are filled in. Subtidal — None.

6. Sediment Removal

Objective

Removal of surface oiled sediments.

Description

Oiled sediments are removed by either manual use of hand tools or mechanical use of various kinds of motorized equipment. The oiled material must be transported and disposed of off-site.

Applicable Shoreline Types

Can be used on any shoreline with surface sediments. On rocky coasts, only manual removal is feasible. When using equipment on beaches, special supervision is required to minimize sediment removal. Sediment removal should not be used in areas where there are known cultural resources in the intertidal zone.

When to Use

When only very limited amounts of oiled sediments have to be removed. Should not be considered where beach erosion may result. Care should be taken to remove the sediments only to the depth of oil penetration, which can be difficult with heavy equipment.

Biological Constraints

Excavating equipment must not intrude upon sensitive habitats or areas of known cultural resources in the intertidal zone. Only the upper intertidal and supratidal areas should be considered for sediment removal to minimize disturbance of biological communities in the subtidal, particularly when coral reefs and seagrass beds occur very close to shore. There may be site-specific constraints limiting

placement of equipment and temporary sediment storage piles in the backshore.

Replaced material must be free of oil and toxic substances.

Environmental Effects

Intertidal — The equipment is heavy, and required support personnel is extensive. May be detrimental if excessive sediments are removed without replacement. All organisms resident in the beach will be affected, though the need for removal of the oil may be determined to be the best overall alternative.

Subtidal — Release of oil and fine-grained oily sediments to the water during sediment removal activities and tidal flushing of the excavated beach surface.

7. Ambient-Water Flooding (Deluge)

Objective

To wash surface oil and oil from crevices and rock interstices to water's edge for collection.

Description

A large diameter header pipe is placed parallel to the shoreline above the oiled area. A flexible perforated header hose is used during deluge of intertidal shorelines to better conform to their profiles. Ambient seawater is pumped through holes in the header pipes and flows down the beach face to the water. On porous beaches, water flows through the substrate pushing loose oil ahead of it (or floats oil to the water's surface) then transports the oil down slope for pickup. Flow is maintained as long as necessary to remove the majority of free oil. Oil is trapped by booms and picked up with a skimmer or other suitable equipment.

Applicable Shoreline Types

Beaches with sediments coarser than sand, and gently sloping rocky shorelines.

Generally not applicable to mud, sand, vegetated, or steep rocky shorelines.

When to Use

On heavily oiled shorelines when the oil is still fluid and loosely adhering to the substrate; and where oil has penetrated into gravel beaches. This method is frequently used in combination with other washing techniques (low or high pressure, ambient or warm water).

Biological Constraints

Not appropriate at creek mouths. Where seagrass beds or tidal flats occur adjacent to the shoreline, flooding should be restricted to tidal stages when these sensitive habitats are under water, to prevent secondary oiling.

Environmental Effects

Intertidal — Habitat may be physically disturbed and smothered as sand and gravel components are washed down slope. Organisms may be flushed into lower tidal zones. Subtidal — Oiled sediment may be transported to shallow subtidal areas, contaminating them and burying benthic organisms and seagrasses.

8a. Ambient-Water/Low-Pressure Washing

Objective

Remove liquid oil that has adhered to the substrate or man-made structures, pooled on the surface, or become trapped in vegetation. Description

Low-pressure washing (<50 psi) with ambient seawater sprayed with hoses is used to flush oil to the water's edge for pickup. Oil is trapped by booms and picked up with skimmers or sorbents. Can be used with a deluge system on beaches to prevent released oil from re-adhering to the substrate.

Applicable Shoreline Types

On heavily oiled gravel beaches, riprap, and seawalls where the oil is still fresh and liquid. Also, in marshes and mangroves where free oil is trapped. When to Use

Where adhered oil is still fresh and must be removed due to continued release of oil.

Biological Constraints

May need to restrict use of flushing to certain tidal elevations so that the oil/water effluent does not drain across sensitive low-tide and shallow subtidal habitats. In marshes, use only at high tide and either from boats or the high-tide line to prevent foot traffic in vegetation.

Environmental Effects

Intertidal — If containment methods are not sufficient, contamination may be flushed into lower intertidal zone. Subtidal — Oiled sediment may be transported to shallow subtidal areas, contaminating them and burying benthic organisms and seagrasses.

8b. Ambient-Water/High-Pressure Washing

Objective

Remove oil that has adhered to hard substrates or man-made structures.

Description

Similar to low-pressure washing except that water pressure is up to 100 psi. High-pressure spray will better remove oil that has adhered to rocks. When water volumes are low, workers may need to place sorbents directly below treatment areas to prevent the released oil from adhering to downstream sediments.

Applicable Shoreline Types

Riprap and seawalls. Can be used to flush floating oil or loose oil out of tide pools and between crevices on riprap. When To Use

When low-pressure washing is not effective for removal of adhered oil, which must be removed due to continued release of oil. When directed water jet can remove oil from hard-to-reach sites. To remove oil from man-made structures for aesthetic reasons.

Biological Constraints

May need to restrict use of flushing to certain tidal elevations so that the oil/water effluent does not drain across sensitive low-tide and shallow subtidal habitats. Environmental

Effects

9. Warm-Water/Moderate-to-High-Pressure Washing

Objective

Mobilize thick and weathered oil adhered to rock surfaces prior to flushing it to the water's edge for collection.

Description

Heated seawater (ambient to 90°F) is applied at moderate-to-high pressure to mobilize weathered oil that has adhered to rocks. The warm water may be sufficient to flush the oil down the beach. If not, "deluge" flooding and additional low- or high-pressure washing can be used to float the oil to the water's edge for pickup. Oil is trapped by booms and picked up with skimmers or sorbents.

Applicable Shoreline Types

Gravel beaches, riprap, and seawalls that are heavily oiled. However, large volumes of water or a deluge system will be needed to prevent the oil from being driven in deeper into the sediments.

When To Use

When the oil has weathered to the point that low-pressure washing with ambient water is not effective for removal of adhered oil, which must be removed due to continued release of oil. To remove oil from man-made structures for aesthetic reasons.

Biological Constraints

Must restrict use to certain tidal elevations so that the oil/water effluent does not drain across sensitive low-tide habitats (damage can result from exposure to oil, oiled sediments, and warm water). Should be restricted adjacent to stream mouths, Intertidal — Removes many organisms on the surface. May drive oil deeper into the substrate or cause sediment erosion of the finer grained fraction if water jet tide pool communities, and similar rich intertidal communities. Subtidal — Oiled sediment may be transported to shallow subtidal areas, contaminating them and burying benthic organisms and seagrasses.

Environmental Effects

10. Hot-Water/High-Pressure Washing

Objective

Dislodge trapped and weathered oil from inaccessible locations and surfaces not amenable to mechanical removal. Description

Water heaters mounted offshore on barges or small land-based units heat water to temperatures from 90°F up to 170°F, which is usually sprayed by hand with high-pressure wands. Used without water flooding, this procedure requires immediate use of vacuum (vacuum trucks or super suckers) to remove the oil/water runoff. With a deluge system, the oil is flushed to the water's surface for collection with skimmers or sorbents.

Applicable Shoreline Types

Gravel beaches, riprap, and seawalls that are heavily oiled. However, large volumes of water or a deluge system will be needed to prevent the oil from being driven in deeper into the sediments.

When To Use

When the oil has weathered to the point that even warm water at high pressure is not effective for removal of adhered oil, which must be removed due to continued release of oil. To remove oil from man-made structures for aesthetic reasons.

Biological Constraints

Restrict use to certain tidal elevations so that the oil/water effluent does not drain across sensitive low-tide habitats (damage can result from exposure to oil, oiled sediments, and hot water). Should be restricted near stream mouths, tide pool communities, etc. Released oil must be recovered to prevent further oiling of adjacent environments.

Environmental Effects

Intertidal — Can kill or remove most organisms. If containment methods are not sufficient, contamination may be flushed into lower intertidal zones that would otherwise not be oiled. May drive oil deeper into the substrate or cause sediment erosion of the finer-grained fraction if water jet is improperly applied. Subtidal — Oiled sediment may be transported to shallow subtidal areas, contaminating them and burying benthic organisms and seagrasses.

11. Slurry Sand Blasting

Objective Remove heavy residual oil from solid substrates.

Description Use of sandblasting equipment to remove oil from the substrate. May include recovery of used (oiled) sand in some cases.

Applicable Shoreline Types Seawalls and riprap. Equipment can be operated from boat or land.

When to Use When heavy oil residue is remaining on the shoreline, which needs to be cleaned for aesthetic reasons, and even hot-water wash is not effective.

Biological Constraints

Not to be used in areas of high biological abundance on the shoreline directly below or adjacent to the structures.

Environmental Effects

Intertidal — Complete destruction of all organisms in the intertidal zone.

Subtidal — Possible smothering of subtidal organisms with sand. When the used sand is not recovered, introduces oiled sediments into the subtidal habitat.

12. Vacuum

Objective

Remove free oil pooled on the substrate or from the water's surface in sheltered areas.

Description

Use of a vacuum unit with a suction head to recover free oil. The equipment can

range from small portable units that fill individual 55-gallon drums to large supersuckers that are truck-mounted and can lift large rocks. Can be used with water spray systems to flush the oil towards the suction head.

When used properly. Where the intertidal community is rich, the tradeoff

between damage to the intertidal community from the hot-water washing versus potential damage from leaving the oil has to be weighed. May drive oil deeper into the substrate or cause sediment erosion of the finer-grained fraction if water jet

When to Use

is improperly applied. Subtidal — Oiled sediment may be transported to shallow When free, liquid oil is stranded on the shoreline (usually along the high-tide line) subtidal areas, contaminating them and burying benthic organisms and seagrasses. or trapped in vegetation that is readily accessible.

Biological Constraints

Special restrictions should be identified for areas where foot traffic and equipment operation should be limited, such as mangrove forests. Operations in wetlands are to be very closely monitored, with a site-specific list of restrictions.

Environmental Effects

Intertidal — Minimal impacts if used properly and minimal substrate is removed.

Subtidal — None.

13. Sediment Reworking

Objective

Rework oiled sediments to break up the oil deposits, increase its surface area, and mix deep subsurface oil layers that will expose the oil to natural removal processes and enhance the rate of oil degradation.

Description

Beach sediments are rototilled or otherwise mechanically mixed with the use of heavy equipment on sand or gravel beaches. The oiled sediments in the upper beach area may also be relocated lower on the beach to enhance natural cleanup during reworking by wave activity (berm relocation).

Applicable Shoreline Types

Should be used only on beaches exposed to significant wave activity. Tilling-type activities work best on beaches with a significant sand fraction; large equipment can be used to relocate sediments up to boulder size. Sediment reworking should not be used in areas where there are known cultural resources in the intertidal zone.

When to Use

On beaches with significant amounts of subsurface oil, where sediment removal is unfeasible (due to erosion concerns or disposal problems); also where surface oil deposits have started to form pavements or crusts.

Biological Constraints

Could not be used on beaches near shellfish-harvest or fish-spawning areas, or near bird nesting or concentration areas because of the potential for constant release of oil and oiled sediments. Sediment reworking should be restricted to the intertidal, to prevent disturbance of the biological communities in the shallow subtidal.

Environmental Effects Intertidal — Due to the mixing of oil into sediments, this process could further expose organisms living below the original layer of oil. Repeated mixing over time could delay the reestablishment of organisms. Relocated sediments would bury and kill organisms. There may be a period of beach instability as the relocated sediments are redistributed. Subtidal — There is a potential for release of contaminated sediments to the nearshore subtidal habitats.

14. Sediment Removal, Cleansing, and Replacement

Objective

To remove and clean oiled sediments, then replace them on the beach.

Description

Oiled sediments are excavated using heavy equipment on the beach at low tide. The sediments are loaded into a container for washing. Cleansing methods include hot-water wash or physical agitation with a cleansing solution. After the cleansing process, the rinsed materials are returned to the original area. Cleaning equipment must be placed close to beaches to reduce transportation problems.

Applicable Shoreline Types

Sand- to boulder-sized beaches, depending on the limitations of the cleanup equipment. The beaches must be exposed to wave activity, so that the replaced sediments can be reworked into a natural distribution. Sediment removal should not be used in areas where there are known cultural resources in the intertidal zone.

When to Use

Applicable on beaches with large amounts of subsurface oil, where permanent removal of sediment is undesired and other cleanup techniques are likely to be ineffective.

Biological Constraints

Excavating equipment must not intrude upon sensitive habitats. Only the supratidal and intertidal areas should be considered. There may be site-specific constraints limiting placement of temporary sediment storage piles. Replaced material must be free of oil and toxic substances. The washing must not change the grain size of the replaced material, either by removal of fines or excessive breakage of friable sediments.

Environmental Effects Intertidal — All resident organisms will be affected, though the need for removal of the oil may be determined to be the best overall solution. Equipment can be heavy, large, and noisy; disrupting wildlife. Transportation to site may entail aircraft, land vehicles, or barges, contributing to environmental disruption. There may be a period of beach instability as the replaced sediments are redistributed. Subtidal — May release oil and fine-grained oily sediments into the water during excavation and tidal flushing of beach sediments and exposed excavations. Adjacent seagrass and coral reef communities may be at risk.

15. Cutting Vegetation

Objective

Removal of oiled vegetation to prevent oiling of wildlife.

Description

Manual cutting of oiled vegetation using weed eater or by hand, and removal of cut vegetation with rakes. The cut vegetation is bagged immediately for disposal. Applicable

Shoreline Types

Marshes composed of emergent, herbaceous vegetation; oiled seagrass blades.

Mangrove forests are not included. When to Use

Use when the risk of oiled vegetation contaminating wildlife is greater than the value of the vegetation that is to be cut, and there is no less destructive method to remove or reduce the risk to acceptable levels.

Biological Constraints

Strict monitoring of the operations must be conducted to minimize the degree of root destruction and mixing of oil deeper into the sediments. Access to bird nesting areas should be restricted during nesting seasons.

Environmental Effects

Intertidal — Removal of the vegetation will result in loss of habitat for many animals. Cut marsh areas will have reduced plant growth for up to two years. Trampled areas (which are inevitable) will recover much slower. Along exposed shorelines, vegetation may not regrow, resulting in erosion and permanent loss of the habitat. Subtidal — Long-term impacts would include increased sediment load in the subtidal area as a result of increased erosion in the intertidal area. For removal of

oiled seagrass blades, disruption of the roots can result in total destruction of the bed.

6 Treatment Methods Requiring Regional Response Team Approval

Research and development is ongoing for both new and improved oil spill treatment methods. Various chemical and biological degradation techniques are currently being tested for effectiveness and toxicity, and they may be approved for use in certain situations. Methods considered to be of potential use in this area are described below.

16a Chemical Oil Stabilization with Elastomizers
16b Chemical Protection of Beaches
16c Chemical Cleaning of Beaches
17 In-situ Burning of Shorelines
18 Nutrient Enhancement
19 Microbial Addition

16a. Chemical Oil Stabilization with Elastomizers

Objective

Solidify or gelatinize oil on the water's surface or a beach to keep it from spreading or escaping, and to speed recovery rate and efficiency. Description

Chemical agent enhancing polymerization of the hydrocarbon molecules applied by semi-liquid spray or as a dry chemical onto the oil in the proper dosage. Depending on the nature and concentration of the polymerizing agent, the oil can be rendered viscoelastic, but still fluid, gelatinous, or semisolid. The primary purpose is to stabilize the oil, keeping it from spreading or escaping, causing oiling elsewhere.

May reduce the solubility of the light (and more toxic) fractions, by locking them into the polymer. This reduces both air and water exposure. Depending on the beach type and equipment used, recovery may be enhanced.

Applicable Shoreline Types

Suitable on shorelines of low permeability where heavy oil has pooled on the surface, except vegetated shorelines.

When to Use

When heavy concentrations of liquid oil are on the substrate and adjacent water body, and physical removal can not be completed prior to the next tide so that the oil is likely to move to a more sensitive shoreline type. Should be used in conjunction with booming or other physical containment.

Biological Constraints

Not suitable for vegetated or riprap shore types. Should be avoided when birds or other wildlife that may be more adversely impacted by the congealed oil can not be kept away from the treated shoreline. The congealed oil may stick to vegetation and wildlife, increasing physical damage to both. On riprap the congealed oil may remain in crevices where it may hamper recovery and prolong the release of sheens.

Environmental Effects

May enhance the smothering effect of oil on intertidal organisms. Thus, the treatment should be considered only for heavily oiled beaches where smothering effects are already maximal. The congealed oil may stick to vegetation and wildlife increasing physical damage, such as impaired flight or thermoregulation in birds whose feathers become oiled.

16b. Chemical Protection of Beaches

Objective Pretreat shoreline to prevent oil from adhering to the substrate.

Description

Certain types of water-based chemicals, some of which are similar in composition to dispersants, are applied to beaches in advance of the oil.

Applicable Shoreline Types

Coarse- and fine-grained sand beaches, seawalls and piers (particularly piers or waterfront facilities that are of historical significance), wave-cut platforms, and riprap.

When to Use

When oil is projected to impact an applicable shoreline, particularly those that have high recreational or aesthetic value.

Biological Constraints

May not be suitable for nutrient-rich environments, particularly in confined waters. The toxicity of shoreline treatment products is reportedly much less than that of oil, but the toxicity of each product should be evaluated prior to consideration for use.

Environmental Effects The long-term environmental effects of these procedures are unknown. A toxic effect of the chemical can be anticipated. Additionally, the nutrient load to nearshore and interstitial waters may lead to eutrophication. Whether the predicted reduced residence time of the oil on the beach will increase the survival rate for sessile and interstitial organisms is unknown.

16c. Chemical Cleaning of Beaches

Objective

To increase the efficiency of oil removal from contaminated areas.

Description

Special formulations, which can be characterized as weak dispersants, are applied to the substrate, as a presoak and/or flushing solution, to soften weathered or heavy oils to aid in the efficiency of flushing treatment methods. The intent is to be able to lower the temperature and pressure required to mobilize the oil from the substrate.

Applicable Shoreline Types

On any shoreline where deluge and water flushing procedures are applicable. When to Use

When the oil has weathered to the point where it will not flow using warm to hot water. This approach may be most applicable where flushing decreases in effectiveness as the oil weathers.

Biological Constraints

Will require extensive biological testing for toxicity and water quality sampling prior to receiving approval for use. The concern is that the treated oil will be dispersed in the water column, and thus impact water column and subtidal organisms. Field tests will be required to show that use of a beach cleaner does not reduce overall recoverability of the oil. Use may be restricted where suspended sediment concentrations are high, adjacent to wetlands and tidal flats, and near sensitive subtidal resources.

Environmental Effects If more oil is dispersed into the water column, there could be more oil sorbed onto suspended sediments and transferred to subtidal habitats, particularly along sheltered shorelines.

17. In Situ Burning of Shorelines

Objective

Removal of oil from the shoreline by burning.

Description

Oil on the shoreline is burned, usually when it is on a combustible substrate such as vegetation, woody material, and other debris. Oil can be burned off of nonflammable substrates with the aid of a burn promoter.

Applicable Shoreline Types

On any shoreline type except tidal flats and mangroves. When to Use

Early in the spill event, after ensuring that the product is ignitable.

Biological Constraints

Should only be considered for use in the upper intertidal or supratidal zones since destruction of plants and animals from heat and burn promoters will be extensive. This technique is subject to restrictions and permit requirements established by federal, state and local laws. It should not be used to burn PCBs, wastes containing more than 1,000 parts per million (ppm) of halogenated solvents, or other substances regulated by the U. S. Environmental Protection Agency (EPA).

Environmental Effects

18. Nutrient Enhancement

Objective

To speed the rates of natural microbial degradation of oil by addition of nutrients (specifically nitrogen and phosphorus). Microbial biodegradation is the conversion by microorganisms of dissolved and dispersed hydrocarbons into oxidized products via various enzymatic reactions. Some hydrocarbons are converted to carbon dioxide and cell material, while others are partially oxidized and/or left unaltered as a residue.

Description

Nutrients are applied to the shoreline in one of several methods: soluble inorganic formulations that are dissolved in water and applied as a spray at low tide, requiring frequent applications; slow-release formulations that are applied as a solid to the intertidal zone and designed to slowly dissolve; and oleophilic formulations that adhere to the oil itself, thus they are sprayed directly on the oiled areas.

Applicable Shoreline Types Could be used on any shoreline type where safe access is allowed.

When to Use On moderately to heavily oiled shorelines, after other techniques have been used to remove as much oil as possible; on lightly oiled shorelines where other techniques are not effective; and where nutrients are a limiting factor in natural degradation.

Potentially for the treatment of subsurface oil.

Biological Constraints

Not applicable in shallow water, poorly flushed, restricted embayments where nutrient overloading may lead to eutrophication, or where toxicity of nutrients, particularly ammonia, is of concern. There must be no risk of oxygen depletion. Use is to be restricted adjacent to stream mouths, tide pools, or other rich intertidal communities. Contact toxicity of oleophilic formulations may restrict areas of direct application. Bioassay test results should be carefully evaluated, as other chemicals in the formulations could be toxic to aquatic organisms.

Environmental Effects

19. Microbial Addition

Objective

To speed the rates of natural microbial degradation of oil by addition of nutrients and microbial products. Microbial biodegradation is the conversion by microorganisms of dissolved and dispersed hydrocarbons into oxidized products via various enzymatic reactions. Some hydrocarbons are converted to carbon dioxide and cell material, while others are partially oxidized and/or left unaltered as a residue.

Description

Formulations containing hydrocarbon-degrading microbes and fertilizers are added to the oiled area. The argument is made that indigenous organisms will be killed by the oil, so new microbial species need to be added to begin the process of biodegradation. To date, microbial addition has not been shown to work better than fertilizer alone in field tests.

Applicable Shoreline Types Could be used on any shoreline type where safe access is allowed.

Biological Constraints Not applicable in shallow water, poorly flushed, restricted embayments where nutrient overloading may lead to eutrophication, or where toxicity of nutrients, particularly ammonia, is of concern. There must be no risk of oxygen depletion. Use is to be restricted adjacent to stream mouths, tide pool communities, etc. Bioassay test results should be carefully evaluated, as other chemicals in the formulation could be toxic to aquatic organisms.

Environmental Effects

Yet to be evaluated for full-scale field applications. There is a potential for the introduction of pathogens from contaminated formulations.

Acute toxicity from direct application to intertidal organisms may result from different formulations. Also, toxic effects may occur from the release of ammonia to the water column and interstitial water. There may be localized zones of oxygen depletion, particularly in the interstitial water.

Appendix A

Guidelines for Treatment Operations

General Guidelines Ensure familiarity and compliance with approved treatment methods, approved shoreline segment work plans, advisories, and special instructions. Restrict all access to wetlands and tidal flats, except with special authorization.

Conditions to avoid

□ Treatment techniques (such as high pressure and hot water) that dislodge intertidal vegetation and invertebrates, e.g., mussels, barnacles, snails □ Clearing marshes and vegetated shorelines (the presence of algae does not characterize a vegetated shoreline) Actions to encourage

- Boom off mud/grass flat adjacent to treatment areas to prevent further contamination. □ Boom off tidal creeks to prevent further contamination.
- Minimize impact to uncontaminated lower intertidal zones, including:

- land crews during tides that cover the lower intertidal zone
- avoid high-/low-pressure washing where possible
- work heavily oiled upper beach zone when lower intertidal zones are covered by high tides
- employ sorbents along riprap and below oiled upper beach to protect lower intertidal zone from oiling

Ensure that all signs of human activity are removed when cleanup is completed. Ensure that all trash and wastes are removed daily: □ Oil trapped in booms must be picked up before the next tide cycle □ All food and associated trash must be removed each day to minimize attracting

wildlife into contaminated areas

Guidelines Specific to Biological Resources

Advisories and special instructions may address:

- ☐ bird concentration areas (nesting sites, colonies, rookeries, etc.)
- ☐ live/dead animal collection policy
- ☐ protection of cultural resources
- ☐ marine mammal haulouts
- ☐ collection of eagle feathers and marine mammal parts
- ☐ cutting bull kelp
- ☐ cutting oiled fucus

Appendix B includes existing “best management practices” for specific issues addressed during previous spills, which can be used as the basis for developing regional guidelines.

Appendix B

Best Management Practices

Specialized Areas of Concern - National

(The following notices are provided as guidelines.)

Marine Mammal Notice

Collection of Eagle Feathers and Marine Mammal Parts

Protection of Cultural Resources

Instruction for the Disposition of Dead and Live Wildlife

Marine Mammal Notice (Developed by NOAA in 1989 during the *Exxon Valdez* oil spill.)

To reduce stress caused by unnecessary disturbance to marine mammal haulouts and improve the chances for wildlife survival, an aircraft advisory is issued for coastal areas affected by the spill. These advisories request that pilots stay at least one-half mile offshore and 1000 feet above ground level from areas of wildlife concentrations and critical habitats. These areas are shown on maps and distributed to pilots. The most critical areas to avoid are: (list critical areas).

No person, except an authorized government official, will approach, molest, or take a seal or sea lion, regardless of whether the animal is oiled, distressed, lethargic, or abandoned. This reminder is necessitated by the widespread activities of oil spill cleanup personnel in areas where seals and sea lions are giving birth to pups. Although casual and distant human/marine mammal interactions may not always be avoidable, they are, to varying degrees, harmful to the animal. The following explanation and guidance with respect to seal pups is offered in the interest of avoiding law violations and minimizing human-induced mortality among marine mammals.

Live seal pups are to be left undisturbed, whether or not they have oil on them. A pup not accompanied by an adult and/or appearing emaciated may not be abandoned. Females commonly leave their pups alone for extended periods during foraging trips. Newborn and young pups appear emaciated before acquiring fat through nursing. It is not possible to distinguish between a normal pup and one that is truly distressed. In the presence of humans, female seals may only approach their pups at night to nurse them, making determination of abandonment difficult to establish. True abandonment is unlikely, barring death or serious injury to the mother.

Pup deaths will greatly increase if oiled animals are picked up and subjected to the stress of handling, transport, and rehabilitation centers. Unlike sea otters and birds, external oiling does not adversely affect a seal's heat conservation ability or indicate a need for human assistance. Persons finding seals, sea lions, whales, or porpoises that appear to be in distress should contact NOAA Fisheries. Do not touch or closely approach these animals.

Collection of Eagle Feathers and Marine Mammal Parts

In response to inquiries about collecting eagle feathers and marine mammal parts by personnel involved in cleanup activities during a spill, the laws and regulations dealing with the collection and possession of such materials are summarized below. *Collection of Eagle Feathers*: The Eagle Act (Public Law 95-616, 92 Stat. 3114, 16 U.S. Code 668) *prohibits* the collection and possession of any eagle parts, including feathers.

Collection of Marine Mammal Parts: The Marine Mammal Protection Act of 1972 (Public Law 92-522, 88 Stat. 1027, 95 Stat. 979, 16 USC 1372) generally prohibits the collection and possession of any marine mammal parts. Under 50 CFR 18.26, the collection of certain dead marine mammal parts is allowed, as follows:

- a** Any bones, teeth or ivory of any (non-endangered) dead marine mammal may be collected from a beach or from land within 1/4 of a mile of the ocean. The term "ocean" includes bays and estuaries.
- b** Marine mammal parts so collected may be retained if registered within 30 days with an agent of the National Marine Fisheries Service, or an agent of the U.S. Fish and Wildlife Service.
- c** Registration shall include (1) the name of the owner, (2) a description of the article to be registered, and (3) the date and location of collection. Items so collected and registered must be retained in the ownership of the collector. *The sale of such items is prohibited.*

Protection of Cultural Resources

Shoreline cleanup operations have the potential for damaging important archaeological and cultural resources. Authorized shoreline cleanup procedures may uncover undiscovered archaeological features or artifacts. To assist in their identification, drawings of the types of artifacts that might be found in the intertidal zone and along the shoreline by cleanup crews are included. Cleanup personnel should be aware of the policy that anyone found vandalizing or appropriating cultural materials will be subject to full prosecution under the Archaeological Resources Protection Act. If response personnel find any cultural resources (fossils, archaeological or historical artifacts), the following steps should be taken immediately:

- 1** Leave the cultural materials in place at the site of discovery and mark with flagging tape.
- 2** Stop cleanup activities in the surrounding area.
- 3** Inform a designated state representative.

Instruction for the Disposition of Dead and Live Wildlife

(Derived from the Wildlife Protection Guidelines, Alaska RRT 1991)

Dead Animals

1 Collect all dead animals (except whale and other large forms), including scavenged carcasses, to discourage further scavenging in oiled areas. **2** Wear gloves when handling dead animals. **3** Use a shovel or spade to uncover and remove carcasses partially covered by sand, wood, or other debris. **4** Place carcasses in double plastic garbage bags. Place all animals from one beach in one bag, if possible. Close securely with masking tape. **5** Complete an animal collection form or provide the following information:

- beach name or location where carcasses were recovered
- date
- name and address of collector
- species, age, and sex of collected animals .If any of this information is not available or questionable, this fact should be recorded so that additional examinations of the animals can be conducted.

6 Place the form or list in a ziplock baggie and place the baggie outside the first garbage bag but inside the second. Bring the dead animals to a designated recovery site

Live Animals

Authorization for animal rescue must be given by the appropriate State or Federal agency prior to the rescue and rehabilitation of oiled wildlife. Long-handled nets, rags, or towels are recommended for capturing live, oiled birds. Wear gloves to keep from getting oiled. Do not wash oiled birds. It is more important to keep them warm. Place them in a covered cardboard box. It is okay to keep more than one bird and multiple species in the same box. Do not attempt to give birds fluids; they should be taken to a rehabilitation center as soon as possible. For live birds, the following information should be reported:

☐ beach name or location where animal was recovered ☐ date and name and address of collector

☐ species, age, and sex of collected animal ☐ condition of the animal

Do not attempt capture of live sea otters without prior authorization from the appropriate agency. Inexperienced people can cause otters additional injuries. In addition, otters may bite and cause infections. A bite from an otter may result in inflammation of the joints and inability to bend one's fingers. Live, oiled otters are to be reported to the designated agency contact for the spill.

Appendix C

NOAA Scientific Support Coordinators

For more information about developing and applying shoreline countermeasures, contact the appropriate NOAA Scientific Support Coordinator for your area.

District Address

Phone

1 Stephen Lehmann NOAA SSC HAZMAT First CG
District (mer) 408 Atlantic Avenue Boston, MA 02110

(w) 617-223-8016
(fax) 617-439-0468

1/5 NOAA SSC HAZMAT Ed Levine Building 100, Box 2
Governors Island New York, NY 10004-5000

(w) 212-668-6428
(fax) 212-668-6370

2/9 NOAA SSC HAZMAT Ken Barton c/o USCG Marine Safety
Division AJC Federal Building 1240 E. Ninth Street Cleveland, OH
44199

(w) 216-522-7760
(fax) 216-522-7759

5 NOAA SSC HAZMAT Gary Ott USCG RTC Yorktown (t-
mer) Yorktown, VA 23690-5000

(w) 804-898-2320
(fax) 804-898-2296

7 NOAA SSC HAZMAT Brad Benggio Miami Federal Build
Rm 1119 51 S.W. First Ave, PO Box 83 Miami, FL 33130

(w) 305-530-7931
(fax) 305-530-7932

8 NOAA SSC HAZMAT Mike Barnhill Cdr Eighth CG District
(m-ssc) Hale Boggs Federal Bldg 500 Camp Street New Orleans,
LA 70130-3396

(w) 504-589-6901
(fax) 504-589-4999

11 NOAA SSC HAZMAT 501 West Ocean Blvd. Rm 5110
Jim Morris

(w) 310-980-4107 (fax)
310-980-4109 Long
Beach, CA 90802

13/14 Sharon
Christopherson

District

17 John
Whitney

NOAA/HAZMAT 7600
Sand Point Way N.E.
Seattle, WA 98115-0070

Address

NOAA SSC HAZMAT
Peterson Towers Bldg
510 L Street, Ste #100
Anchorage, AK 99501

(w) 206-526-6829
(fax) 206-526-6329

Phone

(w) 907-271-3593
(fax) 907-271-3139

Glossary

Aerobic

Able to live or grow only where air or free oxygen is present.

Anaerobic Able to live and grow where there is no air or free oxygen.

Annual

A plant that lives only one year or season.

Aromatic

Organic compounds containing any of a series of benzene ring compounds. They are unsaturated organic ring compounds with low to high boiling points. The lighter components are generally acutely toxic to aquatic life.

Benthos

The plants and animals that live in and on the bottom of a water body.

Berm

A wedge-shaped sediment mass built up along the shoreline by wave action. Sand berms typically have a relatively steep seaward face (beach face) and a gently sloping surface (berm top). A sharp crest (berm crest) usually separates the two oppositely sloping planar surfaces on top of the berm. Berms on sand beaches are eroded away during storms, thus a berm may not be present if the beach is visited shortly after a storm. On gravel beaches, however, steep and high storm berms are activated and refurbished during storms.

Biota

Animal and plant life characterizing a given region. Flora and fauna, collectively.

Booms

Both containment and absorbent booms are used for the collection, deflection, and containment of spreading oil. Containment booms are somewhat rigid structures extending both above and below the water acting as barriers to surface oil. Primary containment

booms are usually deployed close to oiled shorelines to trap oil being flushed from beaches before it is collected. Secondary containment booms are deployed farther out to trap oil that leaks past primary booms. Absorbent boom is used along the shore-water interface to collect oil dislodged during treatment operations. It is important that sorbent boom be changed once the sorbent capacity is reached. Great care should be taken to seal the shore ends of booms so that no oil can get past. This is particularly difficult at rocky shorelines, or areas strewn with boulders and cobbles. The use of sorbent pads or other materials, such as “pom poms,” can be effective sealants.

Brackish

Intermediate in salinity (0.50 to 17.00 parts per thousand) between sea water and fresh water.

Dispersant

Chemical agent used to disperse and suspend oil in water leading to enhanced dispersal and biodegradation.

Emulsification

The process by which oil is mixed with water.

Erosion

The wearing away by action of water or wind on unprotected or exposed earth.

Estuary

Classic definition A drowned river valley that has a significant influx of fresh water and is affected by the tides. Most of the coastal water bodies in the mid-Atlantic region are estuaries (e.g., Chesapeake Bay, Delaware Bay).

Evaporation

The conversion of a fluid—including hydrocarbons—to a gaseous state.

Fertilizer

A substance or agent that helps promote plant or seed growth.

Flushing

Use of a water stream to make oil flow to a desired location or recovery device.

Habitat

The chemical, physical, and biological setting in which a plant or animal lives.

Intertidal

The part of the shoreline that lies between high-tide and low-tide water levels.

Lagoon

A shallow, linear, and usually oblong water body, located parallel with and connected to a larger water body by one or more inlet channels.

Marsh fringe

The edge of the marsh adjacent to the water.

Mobile oil

Oil that can refloat when water is applied (as in high tide).

Mousse

A type of oil/water emulsion which can contain up to 70 percent water.

Non-persistent

Decomposed rapidly by environmental action.

Oleophilic

A material that has affinity for oil.

Penetration

Downward motion of oil into sediments from the surface driven by gravitational forces.

Perennial

Vegetation that continues to grow for several years.

Permeability

The degree to which fluids can flow through a substance. Measured in Darcys.

Permeability is not equal to porosity. High porosity of a material does not insure high permeability. A substance cannot be permeable without having some degree of porosity.

Pooled oil

Oil thickness exceeds one centimeter. This need not be uniform.

Porosity

The volume of void spaces in a sediment mass, measured in percent.

Riprap

(a) A layer of large, durable fragments of broken rock, specially selected and graded, and thrown together irregularly or fitted together. Its purpose is to prevent erosion by waves or currents and thereby preserve the shape of a surface, slope, or underlying structure. It is used for irrigation channels, river-improvement works, and revetments for shore protection.

Recontamination

Contamination by oil of an area that was previously cleaned.

Rhizome

A rootlike stem under or along the ground, ordinarily in a horizontal position, which usually sends out roots from its lower surface and leafy shoots from its upper surface.

Skimmer

A mechanical device that removes an oil film from the water surface.

Oil skimmers collect oil spilled on, or released to, the water's surface. They come in a wide range of shapes and sizes. Skimmers generally have a higher recovery rate than sorbents, providing enough oil is present to justify the costs for its use. Skimmers are usually equipped with storage space for collected oil. Oil is herded to a collection point along a containment boom located close to shore yet in water of sufficient depth for the skimmer to function. Two types of skimmers currently in use are described below. Other types of skimmers are being tested for possible use at a later date.

Band, or "rope," skimmers use an oleophilic material such as polypropylene. Oil is collected by a floating, continuous rotating band or "rope" drawn through an oil slick or along the water's edge of a contaminated area. Adhered oil is wrung from the band by a squeeze roller and collected in an oil sump. These bands are used in either static

(stationary) or dynamic (towed) modes. Bands can be torn by solids or skimmed debris. Efficiency is high in calm waters, poor in choppy waters and waves. Belt skimmers use an oleophilic belt mounted on the front of a small vessel. The oleophilic belt pushes the floating oil below the waterline. Oil not adsorbed by the belt is collected into a holding area located behind the belt. Oil carried up the belt is recovered at the top of the system by a squeeze belt or scraper blade. It is then pumped into a storage container. These skimmers can not operate in shallow waters or tight areas.

Slurry

A suspension of particles in water.

Solubility

The amount or fraction of a substance (e.g., oil) that dissolves into the water column, measured in ppm.

Solvent

A chemical agent that will dissolve oil.

Specific gravity

The measure of the density of a substance such as oil or sea water, usually determined at 20°C, compared to the density of pure water at 4°C. Thus, specific gravity varies slightly with temperature.

Sorbent

All sorbent materials work on the same principles—oil adheres to the outside of the material or sorbs into the material by capillary action. There are three basic types of sorbent materials: mineral based, natural organic, and synthetic organic. Currently, only synthetic organic sorbents are being used in the field in the form of booms, pads, and mops. Peat is currently in the testing and demonstration phase.

Stain

Oil that is visibly present but cannot be scraped off with a fingernail.

Substrate

The substance, base, or nutrient on which, or the medium in which, an organism lives and grows, or the surface to which a fixed organism is attached; e.g., soil, rocks, and water.

Subtidal

That part of the coastal zone that lies below the lowest low-tide level, so that it is always underwater.

Supratidal

Above the normal high-tide line.

Tarballs

Lumps of oil (<10 cm in diameter) weathered to a high density semisolid state.

Toxicity

The inherent potential or capacity of a material (e.g., oil) to cause adverse effects in a living organism (Rand and Petrocelli, 1985).

Viscosity

Flow resistance; referring to internal friction of a substance (e.g., oil) that is a function of the oil type and temperature.

Vacuum systems

Used to recover oil collected behind containment booms along the beach face and in the water during shoreline flushing operations. Where equipment access allows, vacuums can be used to remove pools of oil directly from shorelines and surfaces of heavily oiled rocks. Two vacuum systems currently in use are described below.

The first system is classified as a vacuum device, but requires a high-velocity air stream, @ 150 mph, to draw oil, water, and debris into the unit's collection chamber. Due to the 6- to 12-inch diameter of the inlet hose, it rarely becomes clogged by debris. The inlet nozzle should always be placed slightly above (never below) the fluid's surface. The distance at which it is held above the fluid is critical to limit the amount of water intake. This system is suitable for picking up weathered oil, tar balls, and mousse from water or shorelines, and to vacuum oil from skimming vessels, boomed areas, or debris-laden sites. The primary advantage is its ability to pick up oil of any viscosity and, where necessary, lift fluid more than 30 feet. The system can pick up

and decant simultaneously. The main disadvantages are that it usually picks up a high water/oil ratio, and can be difficult to repair in the field.

The second system, barge-mounted vacuum trucks, use high-suction pumps and a cylindrical chamber capable of sustaining very low internal pressure, i.e., minus 12 psi. Vacuum is created in the chamber, and a 3- to 4-inch diameter hose is usually placed slightly below the surface of a floating oil slick, allowing a mixture of water and oil to enter the collection chamber. The position of the open end of the vacuum hose is critical. If it is placed too far down into the oil slick, recovered fluid will be mostly water; if not deep enough, air will be sucked into the system, and much of the vacuum will be lost. The primary advantages of the vacuum truck system are: it can recover fluid of nearly any viscosity; it has a rapid pickup rate of thick oil layers; and it can recover a wide variety of small debris. Primary disadvantages are its limited lift, no more than 20 to 30 feet, and the length of time required to reestablish a vacuum if air enters the hose. As with the other vacuum, this one also picks up a high water/oil ratio.

Weathering

Natural influences such as temperature, wind, and bacteria that alter the physical and chemical properties of oil.

Weir

A vertical barrier placed just below the surface of the water so that a floating oil slick can flow over the top.

Wetlands (as defined by the Annotated Code of Maryland Title 9) State wetlands: Lands below the mean high-tide line affected by the regular rise of tide. Private wetlands: Lands bordering on state tidal wetlands, below the mean tide line subject to the effects of the regular rise and fall of tide. Lands able to support growth of wetland vegetation.

Lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, and is at least periodically saturated with or covered by water (Cowardin et al. 1979).

Wrack Accumulations of plant debris that is deposited at or above the high-tide line (e.g., *Spartina* or seagrass debris).

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The Sea Turtle Recovery and Rehabilitation Group is responsible for the recovery and rehabilitation of impacted sea turtles. This involves deterrence and hazing, recovering dead or capturing live oiled sea turtles, transporting them to processing centers, and providing medical care to impacted animals. These activities are performed in close coordination with the Unified Command along with state and federal trustee agencies. Wildlife recovery by any agency or organization must be conducted under the direction of the Unified Command. Their activities must comply with agreements, permits, and policies from the appropriate management agencies (i.e., State Fish and Wildlife agencies, NOAA Fisheries Service, USFWS).43

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Wildlife Response Plan

Introduction and Background

The purpose of this Wildlife Response Plan is to outline the responsibilities of the Wildlife Branch within a Unified Command structure during an oil spill, describe the procedures to be used, and to identify the personnel and equipment necessary to meet wildlife protection responsibilities of the responsible party and the Federal and State governments during a spill. The mission of the Wildlife Branch is to minimize the adverse impacts of oils spills and oil spill response on wildlife.

The Southeast Louisiana Area Wildlife Response Plan contains:

- Statutory policy and procedural basis for Wildlife Branch operations;
- Activation criteria and factors to consider when developing response actions; and
- Organizational infrastructure for wildlife response operations.

When oil spills occur, the Incident Command System (ICS) is used as the organizational structure to coordinate the response actions. The ICS organizational structure typically includes the Unified Command and the Operations, Planning, Logistics, and Finance Sections. The actual response organization will grow to fit the level of response necessary for a specific incident. Response actions concerning the protection, identification, rescue, processing, and rehabilitation of oiled wildlife are performed by the Wildlife Branch within the Operations Section.

It is the policy of the Southeast Louisiana Area Committee that representatives of the U.S. Fish and Wildlife Service (USFWS) or Louisiana Department of Wildlife and Fisheries (LDWF) will assume the positions of Director and/or Deputy Director of the Wildlife Branch, as appropriate. The Branch Director position may be filled by NOAA National Marine Fisheries Service (NMFS) if USFWS chooses to defer the position to NMFS. In this case, NMFS may provide a more experienced Branch Director given the circumstances of the incident. The Wildlife Branch Director position will be delegated to the LDWF for spills that occur within Louisiana State Waters and/or in sensitive areas such as State/ refuges and wildlife management areas. Appointment of other parties,

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including a qualified Responsible Party representative, to one of these positions may be made by a USFWS representative or their designee at any time during an incident for such periods of time as may be deemed appropriate. The use of a Responsible Party representative in the Wildlife Branch, i.e. Deputy Branch Director, may be beneficial to the operations of the Branch as it helps expedite logistical and finance needs. If this occurs, it should be verified that the Responsible Party representative has prior experience with a wildlife response event.

Within the Wildlife Branch there are four Groups who report to the Wildlife Branch Director: the Wildlife Reconnaissance Group; the Bird Recovery and Rehabilitation Group; the Marine Mammal Recovery and Rehabilitation Group and the Sea Turtle Recovery and Rehabilitation Group. The roles, responsibilities, and duties of these Groups, and individuals within these Groups, are described in detail in the Wildlife Branch Positions and Responsibilities section.

Coordination between the Wildlife Branch and the Environmental Unit, a part of the Planning Section, is critical. Wildlife Branch field staff perform reconnaissance by land, boat, and air. Environmental Unit staff gathers information regarding wildlife impacts through aerial over flights, field observers, and through on-the-ground Shoreline Cleanup Assessment Techniques (SCAT) teams. The Wildlife Branch and Environmental Unit share information so that it can be used by the Planning and Operations Sections to aid in strategic assessment and planning of response strategies. The Wildlife Branch Director is responsible for keeping the Unified Command informed of the status of affected wildlife during the response through the Operations Section Chief and the Situation and Environmental Units in the Planning Section.

While the organizational structure, roles, and responsibilities remain the same regardless of the location and type of material spilled (i.e., oil or hazardous substance, marine or inland environments), some functions may be altered as appropriate.

This plan has been developed to meet portions of the Southeast Louisiana Area Committee's Fish and Wildlife and Sensitive Environments Plan requirements set forth in the National Contingency Plan (NCP), 40 CFR Part 300.210 (c)(4).

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Federal Mandates

The Federal Oil Pollution Act 1990 (OPA 90), incorporated into the NCP, requires that a Fish and Wildlife and Sensitive Environments Plan be developed in consultation with the USFWS, the National Oceanic and Atmospheric Administration (NOAA), and other interested parties, including state fish and wildlife agencies (33 U.S.C. 1321(d)(2)(M)). The plan must include “immediate and effective protection, rescue, rehabilitation of, and minimization of risk of damage to fish and wildlife resources and habitats that are harmed or that may be jeopardized by a discharge”. Additionally, 30 CFR Part 300.210(c)(4) sets forth the requirements for this plan to be an annex to Area Contingency Plans. The Wildlife Response Plan has been written in conjunction with other sections of the Southeast Louisiana ACP to address the federal requirements. Certain other federal and state laws also apply to oil spill response. Of particular concern is compliance with the Migratory Bird Treaty Act, Marine Mammal Protection Act, Endangered Species Act, and state wildlife rehabilitation rules.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), 16 U.S.C. 703-711, protects most bird species in the United States and requires specific authorization (or exemptions) to conduct activities that may result in a “take” of migratory birds. “Take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct”. Most response actions that would result in a take are permitted by issuance of a Migratory Bird Rehabilitation Permit (50 CFR Part 21.31). A rehabilitation permit authorizes recovery, temporary possession, transport, and rehabilitation of oiled migratory birds. The permit provisions also allow authorized individuals to euthanize migratory birds that are medically determined to have poor prospects of survival. Permitted rehabilitators must be authorized to work on a specific oil spill incident by USFWS and the Federal On-Scene Coordinator (FOSC). USFWS policy requires spill responders to comply with the care standards outlined in *Best Practices for Migratory Bird Care During Oil Spill Response*, which is incorporated as a requirement of the Southeast Louisiana ACP. This Wildlife Response Plan adopts the operational guidelines as well as the standard of care requirements of the *Best Practices for Migratory Bird Care During Oil Spill Response*. (http://www.fws.gov/contaminants/OtherDocuments/best_practices.pdf).

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The Migratory Bird Rehabilitation Permit stipulates that specific authorization to remove dead oiled birds must be obtained from the USFWS for each spill incident. The Wildlife Branch, in consultation with the trustee agencies, will develop protocols and authorizations for removing dead oiled birds for each incident.

Endangered Species Act

The Endangered Species Act of 1973 (ESA), 16 U.S.C. 1531-1543, has strict permit requirements for the handling of threatened and endangered species (listed species). Permitting requirements apply (with a few exceptions) for any species listed as threatened or endangered. A Migratory Bird Rehabilitation Permit (see above) authorizes the recovery, temporary possession, transport, and rehabilitation of oiled threatened and endangered species of migratory birds with no additional ESA permits required. ESA permit/authorization is needed for other threatened and endangered species, such as manatees.

In the event of an oil spill or hazardous substance release, the ESA must be considered in the development of Federal response activities and actions during an oil spill response. As the spill response occurs, the FOSC must consult with the natural resource trustees as laid out in Section V.B of the *Inter-agency Memorandum of Agreement Regarding Oil Spill Response Activities Under the Federal Water Pollution Control Act's National Oil and Hazardous Substances Pollution Contingency Plan and the Endangered Species Act (ESA MOA)*. The Environmental Unit as outlined in the ESA MOA will address ESA Section 7 Consultation requirements. However, the Wildlife Branch will be instrumental in documenting the effects of response actions on listed species. Coordination between the Wildlife Branch and the Environmental Unit is critical to accomplishing this task.

There is a contingency under the Marine Mammal Protection Act that gives a waiver for the "take" of marine mammals by Federal or State employees for the health and safety of the animals or for human safety. There is no such exemption under the Endangered Species Act but, a scientific research and enhancement permit (No. 932-1489) held by NOAA's Marine Mammal Health and Stranding Response Program covers oil spill-related actions under the MMPA and ESA.

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Section 7 of the Endangered Species Act (ESA)

As soon as practicable after a response is under control, which may occur when the case is closed, the FOSC initiates consultation (either formal or informal, as appropriate) with the National Marine Fisheries and the U.S. Fish and Wildlife Service (the Services) ESA listed species and/or critical habitat have been affected. The FOSC should ensure that the following information is completed before the case is closed. After the case is closed, the information and a cover letter requesting consultation will be sent to the Services.

- Provide a description of the emergency.
- Provide an evaluation of the emergency response actions and their impacts on listed species and their habitats, including documentation of how the Services' recommendations were implemented, and the result of implementation in minimizing take.
- Provide a comparison of the emergency response actions as describes above with the pre-planned countermeasures and information in this ACP.

More guidance regarding Section 7 consultation can be found in the Inter-agency Memorandum of Agreement Regarding Oil Spill Planning and Response Activities under the Federal Water Pollution Control Act's National Oil and Hazardous Substance Pollution Contingency Plan and the Endangered Species Act in Chapter 9000, Appendix T, MOUs/MOAs.

Endangered Species Act Emergency Consultation Procedures

Background

The Endangered Species Act of 1973 (ESA) was signed into law by President Richard Nixon to protect critically imperiled species from extinction. The ESA provides

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protection to listed species, the habitats they utilize and designated areas known as critical habitats. The ESA prohibits a take¹ of an individual animal or adversely modifying critical habitat (Section 9 of ESA).

Section 7 of the ESA requires all federal agencies to consult with the Services² if their actions might result in a take of a listed species. Local governments must consult the services if their actions require federal permits or receives federal funding. In 2001, USCG, EPA, NOAA and DOI signed an inter-agency Memorandum of Agreement (MOA) regarding oil spill planning and response activities under National Contingency Plan (NCP) and the ESA. This MOA outlines the procedures to be followed during three phases of a spill: pre-spill planning, response and post-response. This document expands on the steps in the MOA relating to the response and post-response phases of a spill as currently understood.

Response Procedures

Early in a response, an ICS 232-CG Resources at Risk Summary report will be generated and will highlight any listed species and/or critical habitats³ that may be affected by response activities. If there are no ESA resources at risk, then no consultation is necessary. If listed species and/or any critical habitats are at risk, then the FOSC (or designee) must consult with the Services as soon as practical, usually within the first few days of the response.

For NMFS - To facilitate consultation with NMFS, the "RRT VI Spill Response Emergency Endangered Species Consultation" form has been created that can be filled out and sent electronically to the NMFS Southeast Regional Office Protected Resources Division. . Attached is a version of the form, but NMFS should be contacted during an incident to obtain the most up-to-date version of the form. The completed form should be submitted to NMFS per the instructions on the form.

For USFWS –Coordinate with USFWS contact below to determine appropriate methods, as they do not currently use a standard form or template. The USFWS contact

¹ A take is to harass, harm, pursue, hunt, shoot, kill, wound, trap, capture or collect, or to attempt to engage in any such conduct

² The services are National Oceanic and Atmospheric Administration's (NOAA's) National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS).

³ Habitats which listed species may use, even if not designated as critical habitat should be considered.

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will be looking for similar information as NMFS and supplying the contact with a copy of the NMFS form may be sufficient to initiate consultation.

For all ESA consultations - The regional NOAA Scientific Support Coordinator (SSC) will often be tasked by the Federal On-Scene Coordinator (FOSC) to complete the form and handle any ESA related issues. The services will review the supplied information and respond with Best Management Practices (BMP) to mitigate potential impact of any listed species and/or critical habitat. The BMP's are then incorporated into response operations and species specialist may be brought into the response to provide additional oversight and guidance.

Endangered Species Act Post-Response Procedures

The three thresholds which are used to determine action necessary by the FOSC are: (1) No effect⁴ (none at all, negative or positive), (2) Not Likely to Adversely Affect⁵, and (3) May adversely affect.

1. If the FOSC determines that response actions caused no effect listed species and/or critical habitat, then the FOSC is not required to draft a letter requesting concurrence from the services; however FOSC should retain all related documentation. If the FOSC would like service concurrence to their determination, please follow guidance related to Not Likely to Adversely Affect.
2. If the FOSC determines that response actions did not likely to adversely affect listed species and/or critical habitat, then the FOSC will draft a letter requesting concurrence from the services. This letter should include the following: (1) the date response concluded; (2) dates emergency consultation initiated; (3) geographic area of response activities; (4) the BMPs that were followed; (5) how the FOSC came to their determination; and (6) which listed species or critical habitat were or were not adversely effected.

⁴ No effect: the appropriate conclusion when the action agency determines its action will not affect a listed species or designated critical habitat.

⁵ Not likely to adversely affect (NLAA): the appropriate conclusion when effects on listed species are expected to be discountable, insignificant, or completely beneficial.

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3. If listed species or their habitats were affected the FOSC will need to engage in the formal consultation process as described in the referenced MOA.

Endangered Species Act Points of Contact

Mr. Kyle Baker National Marine Fisheries Service Southeast Regional Office Protected Resources Division 263 Thirteenth Avenue, South St. Petersburg, FL 33701 Phone: (727) 824-5134 Kyle.baker@noaa.gov	Mr. Jeffery D. Weller, Field Supervisor Endangered Species Program US Fish and Wildlife Service 400 Cajundome Blvd., Suite 400 Lafayette, LA 70506 Phone: (337) 291-3100 jeff_weller@fws.gov
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REGIONAL RESPONSE TEAM VI (RRT VI) SPILL RESPONSE EMERGENCY ENDANGERED SPECIES CONSULTATION

This form is intended for documentation of emergency consultation with the National Marine Fisheries Service (NMFS) for species listed and critical habitat designated under the Endangered Species Act (ESA). This form is intended to streamline consultation when emergency spill response activities may adversely affect listed species or critical habitat.

Emergency Contact: NMFS should be contacted as soon as possible by telephone at: 727-403-2641. Consultation may be completed by telephone; however, this form will be completed

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no later than 24 hours following notification of the emergency and transmitted via email (nmfs.ser.emergency.consult@noaa.gov) regarding emergency spill response actions.

Instructions for Completing the Form

Pages 1-3: The Federal On Scene Coordinator (FOSC) or other person designated by the FOSC for ESA consultation should completely fill out pages 1-3. All response actions including any pre-approved practices to avoid or minimize impacts to listed species and critical habitats should be indicated.

Pages 4-5: NMFS will assist in determining the presence of protected resources in the response area, but the initial checklist should be referenced by the FOSC. NMFS will complete the impacts assessment considering the response actions and standard practices proposed. NMFS will indicate if the response will affect any listed species or critical habitat and provide recommendations to avoid and minimize any potentially adverse effects. NMFS will transmit the completed form to the FOSC within 24 hours of receipt.

Awaiting a response from NMFS should not delay emergency response activities.

The responding agency will implement as many measures and conservation measures as feasible without delaying the response. NMFS will be available for further coordination as requested.

Post Emergency

Once the emergency response actions are over, NMFS will be notified of the measures that were implemented, and notified of any incidental take or adverse modification or destruction of

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critical habitat. If no adverse impacts occurred, ESA consultation is complete. If any adverse impacts resulted from the emergency response activities, formal consultation will be required with NMFS.

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RRT VI SPILL RESPONSE EMERGENCY CONSULTATION

DATE OF TRANSMITTAL:

FROM: FOSC U.S. Coast Guard	NAME: EMAIL:	t: f:
TO: NOAA Fisheries Service, Southeast Regional Office	nmfs.ser.emergency.consult@noaa.gov	t: 727-403-2641 (24-hour) f: 727-824-5309

DATE OF INCIDENT:

CENTER LOCATION (NAD 83)	Latitude	Longitude
Location Type Check All That Apply Name/Landmarks		
Port/Industrial/Canal	<input type="checkbox"/>	
Riverine	<input type="checkbox"/>	
Inshore/Estuarine	<input type="checkbox"/>	
Nearshore/Coastal	<input type="checkbox"/>	
Offshore/EEZ	<input type="checkbox"/>	

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DESCRIPTION OF INCIDENT: Be as complete as possible. Include information on the type and amount of material spilled, initial impacts, and other relevant details.

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RRT VI SPILL RESPONSE EMERGENCY CONSULTATION

RRT IV RESPONSE ACTIONS (Check All That Apply) RRT IV RESPONSE ACTIONS

ACTION		DETAILS / NOTES
Boom	<input type="checkbox"/>	
Sorbents	<input type="checkbox"/>	
Skimmers	<input type="checkbox"/>	
Vacuuming	<input type="checkbox"/>	
Dispersants	<input type="checkbox"/>	
Solidifiers	<input type="checkbox"/>	
Barriers/Berms/Fences	<input type="checkbox"/>	
Snares	<input type="checkbox"/>	
In-situ burning	<input type="checkbox"/>	
Trenching	<input type="checkbox"/>	

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Flooding/Flushing	<input type="checkbox"/>	
Pre-oiling debris removal	<input type="checkbox"/>	
Oiled vegetation removal	<input type="checkbox"/>	
Oiled debris removal	<input type="checkbox"/>	
Sediment removal	<input type="checkbox"/>	
Vessel/Container removal	<input type="checkbox"/>	
Net use or trawling	<input type="checkbox"/>	
Seismic survey	<input type="checkbox"/>	
Explosives	<input type="checkbox"/>	
<u>Vessels/Vehicles</u>		
Boats	<input type="checkbox"/>	
ATVs	<input type="checkbox"/>	

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Heavy equipment	<input type="checkbox"/>	
Staging areas	<input type="checkbox"/>	

RRT VI SPILL RESPONSE EMERGENCY CONSULTATION

HABITAT TYPE(S) CHECKLIST

Habitat Type	Check All in Response Area	Will Affect	Will Not Affect
Coral reef	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hard bottom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seagrass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mud/Sand bank	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sand/Silt bottom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mangroves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal lagoon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wetland	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Beach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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LIST ANY PRE-APPROVED RESPONSE METHODS TO BE USED

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RRT VI SPILL RESPONSE EMERGENCY CONSULTATION

PROTECTED SPECIES CHECKLIST

SPECIES	Occurs in Response Area	RESPONSE	
		Likely to Adversely Affect	Not Likely to Adversely Affect
<u>Sea Turtles</u>			
Loggerhead	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Green	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kemp's ridley	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leatherback	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hawksbill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Corals</u>			
Elkhorn Coral	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Staghorn Coral	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Fishes</u>			
Gulf sturgeon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shortnose sturgeon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smalltooth sawfish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Marine Mammals</u>			

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NA Right whales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Humpback whales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sperm whales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sei whales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Finback whales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Blue whales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other marine mammals ¹	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Plants</u>			
Johnson's seagrass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

¹ Although all marine mammals are not listed as threatened or endangered, all marine mammals are protected under the Marine Mammal Protection Act and should be considered during response activities.

PROTECTED SPECIES CRITICAL HABITAT CHECKLIST

CRITICAL HABITAT	Occurs in Response Area	RESPONSE	
		Likely to Adversely Affect	Not Likely to Adversely Affect
Gulf sturgeon unit 8 (Lake Ponchartrain - MS Sound)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Southeast U.S. critical habitat metadata can be found on NOAA Fisheries GIS page at:

<http://www.nmfs.noaa.gov/gis/data/critical.htm#se>

Gulf sturgeon critical habitat map: <http://www.nmfs.noaa.gov/pr/pdfs/criticalhabitat/gulfsturgeon.pdf>

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RRT VI SPILL RESPONSE EMERGENCY CONSULTATION NMFS RECOMMENDATIONS

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Marine Mammal Protection Act

Under the Marine Mammal Protection Act (MMPA), 16 U.S.C. 1379, Section 109(h)(1)), federal, state, and local government officials, or persons designated under MMPA Section 112(c) by the relevant Secretaries of the Departments of the Interior or Commerce, may take marine mammals during the course of their official duties if such taking is for the protection or welfare of the mammal, the protection of public health and welfare, or the non-lethal removal of nuisance animals. Government contractors conducting officially authorized oiled wildlife spill response related activities and acting under the direct supervision of the Wildlife Branch Director are regarded as spill response employees and may take marine mammals *if the Wildlife Branch is activated* and the Wildlife Branch Director is authorized pursuant to Section 109(h) of the Marine Mammal Protection Act and implementing regulations (USFWS, National Marine Fisheries Service, state wildlife agency), or is designated by the National Oceanic and Atmospheric Administration under 16 U.S.C. 1382 Section 112(c). “Take” is considered appropriate for the purposes of recovery and transport of marine mammals (alive or dead) to a designated location, rehabilitation by an authorized facility, return to the wild, or for the collection of evidence. If wildlife response personnel are contract employees of a non-government entity and not otherwise authorized pursuant to Section 109(h) or 112 (c) of the Marine Mammal Protection Act, authorization to take marine mammals during spill response activities must be obtained directly from the appropriate Federal trustee agency (USFWS or NOAA National Marine Fisheries Service). Likewise, if the Wildlife Branch is not activated, authorization to take marine mammals must be obtained directly from the appropriate federal trustee agency (USFWS or NOAA National Marine Fisheries Service) pursuant to 16 U.S.C. 1382 Section 112(c).

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Hazing or Deterrence Actions

Hazing or deterrence may be utilized by the Wildlife Branch to keep un-oiled wildlife away from oil. No Federal permits are required for non-lethal deterrence of migratory birds (50 CFR Part 21.41) (Note: this exemption does not apply to eagles and endangered species). The ESA does not specifically authorize deterrence and preemptive capture of endangered species. The Wildlife Branch, in consultation with the appropriate trustee agencies, will develop response strategies for deterrence and preemptive capture of endangered species for a specific spill incident. Strategies for hazing or abatement will likely vary seasonally for most bird species. "Take" of endangered species resulting from approved response actions will be deemed incidental to the primary action of the spill response and will be covered by the ESA Section 7 Emergency Consultation process, unless otherwise authorized by a permit. See ESA section above.

Natural Resource Trustees for Wildlife

Trustee agencies will provide input into the selection of response methods used so that wildlife operations comply with each trustee agency governing laws and obligations to preserve and protect wildlife and habitat. During a spill response, wildlife trustee agencies will advise the Wildlife Branch Director about local wildlife resources, sensitive species or habitats, logistical considerations, and other issues that arise.

Federal trustee agencies that are most likely to participate in Wildlife Branch decisions and response activities are as follows:

- Department of the Interior
 - Bureau of Indian Affairs
 - Bureau of Land Management
 - National Park Service
 - U.S. Fish and Wildlife Service
- Department of Commerce
 - NOAA, Office of Response and Restoration
 - NOAA, National Marine Fisheries Service
 - NOAA, National Marine Sanctuaries

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- Department of Agriculture
 - U.S. Forest Service
 - APHIS Wildlife Services
- Department of Defense (military lands)

The U.S. Coast Guard and the U.S. Environmental Protection Agency are not trustee agencies for natural resources but are the primary lead federal agencies during a spill response and also participate in the Wildlife Branch decisions. In any spill the potentially responsible party or discharger is responsible to federal and state resource trustees, to federally recognized Indian Tribes, and to foreign trustees, all of whom are empowered to assess impacts and seek compensation for injuries to natural resources which have been caused by a discharge of oil or release of a hazardous substance. State trustee agencies that are most likely to participate in Wildlife Branch decisions and response activated under the Southeast Louisiana ACP and may include:

- Louisiana Department of Wildlife and Fisheries (Primary State Trustee for Wildlife)
- Louisiana Department of Environmental Quality
- Louisiana Department of Natural Resources (Tidelands)
- Louisiana Oil Spill Coordinator's Office

Indian Tribes retain sovereign authority to manage wildlife resources issues within reservation boundaries. Consultation and coordination is necessary with Tribal governments whose lands may be impacted by an oil spill. Regardless of whether an oil spill occurs directly on Tribal lands or moves onto or through Tribal lands, Tribes have an important role in developing wildlife response actions affecting Tribal resources. Tribes may have additional natural resource interests related to retained rights outside of reservation lands. In such circumstances, the Wildlife Branch will work in coordination with affected Tribes to develop appropriate wildlife response strategies to address wildlife and Tribal concerns, in compliance with Executive Order 13175 (Consultation

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and Coordination with Indian Tribal Governments), DOI Secretarial Order 3206, USFWS Native American Policy, as well as compliance with the Southeast Louisiana ACP.

Agreement Regarding Wildlife Response Activities

In order to provide an efficient and coordinated response, principle federal and state fish and wildlife trustees may enter into cooperative agreements regarding a variety of issues that arise during spills of oil and hazardous substances. These issues include agency response roles, reconnaissance, capture, treatment, rehabilitation, and release of injured wildlife.

Response Planning

The primary purpose of the Wildlife Branch is to provide the best achievable care for impacted wildlife and to minimize wildlife losses, including preventing injury to wildlife or habitats from both the oil and from the implementation of response activities. However, undertaking an effective wildlife response requires planning and preparation before the need to respond to an actual incident.

State and Federal Trustees are encouraged to work with the oil industry and Southeast Louisiana Area wildlife rescue and rehabilitation organizations to prepare an adequate response capability for Wildlife Branch operations. Preparation involves assessing potential impacts to wildlife; ensuring adequate equipment, personnel, and wildlife response protocols are available; and practicing the planned response through oil spill exercises. In particular, oiled wildlife rehabilitation requires large amounts of space, water, and personnel, and these resources are not readily available without prior planning.

Personnel Safety

Worker safety must be considered before any wildlife response effort is conducted. Therefore, all Wildlife Branch activities must conform to the Site Safety Plan for the response. All workers must be current in Occupational Safety and Health Administration (OSHA) information and training that relates to safety of working in an environment with uncontrolled oil products. Additional safety requirements may be included and all

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personnel involved in Wildlife Branch operations must have appropriate job specific safety training for the task(s) to be performed as well as utilize appropriate personal protective equipment. Those people involved with animal handling should be trained in techniques that ensure worker safety and present the least amount of stress to wildlife. Appropriate bio-security measures will be utilized to reduce the risk of transmission of infectious diseases between wildlife and personnel during an oiled wildlife response.

Wildlife Branch

Activation of the Wildlife Branch

Every spill will be assessed for potential impacts to wildlife. The Wildlife Branch will be activated when either a Federal or State trustee agency, responsible party, or the Unified Command determines that an oil spill is in the vicinity of wildlife resources (mammals or birds), or has a trajectory that puts wildlife resources at risk. Once this determination has been made, the Operations Section Chief and the Unified Command will be notified when the Wildlife Branch is operational. As described in the **Response Actions** section below, the Wildlife Branch will be developed to appropriately respond to the anticipated magnitude of wildlife impacts.

Designation of Wildlife Branch Director

Representatives of the USFWS, LDFW, or NMFS, as appropriate, will assume the position of Director and/or Deputy Director of the Wildlife Branch. This designation may be made on a case-by-case basis or through a pre-existing agreement. Appointment of other parties, including qualified Responsible Party representatives, to one of these positions may be made by a USFWS representative or their designee at any time during an incident, and for such periods of time as may be deemed appropriate. Unless otherwise indicated by USFWS, the Wildlife Branch Director position will be delegated to the Louisiana Department of Wildlife and Fisheries for spills that occur within Louisiana State Waters or on a Louisiana Department of Wildlife and Fisheries Wildlife Management Area or refuge. Delegation of the position may change during a spill of extended duration.

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Wildlife Branch Organization

The Wildlife Branch Director oversees operations of the Wildlife Branch (see Figure 1) and reports to the Operations Section Chief. Within the Wildlife Branch, four Groups report to the Wildlife Branch Director:

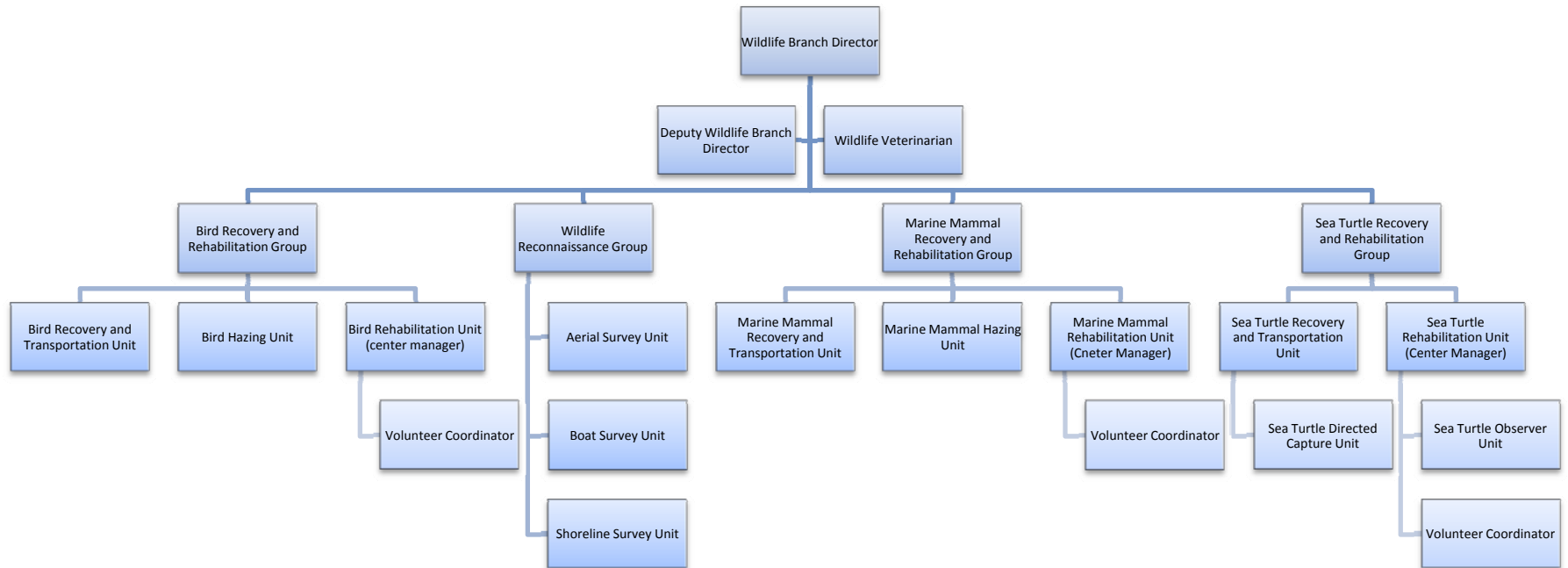
- Wildlife Reconnaissance- aerial, ground, and on-water reconnaissance of wildlife in the spill area.
- Bird Recovery and Rehabilitation- search, recovery, transport, rehabilitation, documentation and hazing/deterrence of birds.
- Marine Mammal and
- Sea Turtle Recovery and Rehabilitation- search, recovery, transport, rehabilitation, documentation, and hazing/deterrence of marine mammals.

To ensure Wildlife Branch objectives are achieved with maximum efficiency, the Wildlife Branch Director coordinates and manages the activities of all personnel in the Wildlife Branch who fall under the authority of the Unified Command during a spill response. These include federal, state, and local agencies along with commercial and non-profit organizations responsible for wildlife. The Wildlife Branch Director will manage all personnel and equipment supplied by the Potentially Responsible Party to the Wildlife Branch.

The Wildlife Branch includes the following Groups, which operate under direction of the Wildlife Branch Director: Wildlife Reconnaissance, Bird Recovery and Rehabilitation, and Marine Mammal and Sea Turtle Recovery and Rehabilitation. This organizational structure is expanded beyond the structure described In the Incident Management Handbook (USCG COMDTPUB P3120.17A), which includes only the Wildlife Recovery Group and the Wildlife Rehabilitation Center.

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Wildlife Branch Operations

Duties and Responsibilities

Once activated, the Wildlife Branch Director is responsible for ensuring that the appropriate protocol and process is followed during the search, recovery, and rehabilitation of impacted wildlife. The Wildlife Branch Director will make recommendations to the Unified Command through the Operations Section Chief regarding the need for additional Wildlife Branch resources based on anticipated wildlife impacts and associated field operations.

The Wildlife Branch, working for the Operations Section Chief, will develop operational strategies, tactics and resource needs for operations activities for the Branch in the Incident Action Plan. The Branch Director or one of the Branch staff will work closely with the Site Safety Plan specific to wildlife response activities. Operations activities may include wildlife deterrence, conducting wildlife search and recovery, transportation of oil-impacted wildlife, rehabilitation of wildlife, and release of rehabilitated wildlife. The Wildlife Branch Director will implement the operational guidelines as well as the standard of care requirements of the *Best Practices for Migratory Bird Care during Oil Spill Response*, *NOAA Marine Mammal Health and Stranding Response Program*, *Marine Mammal Oil Spill Response Guidelines*, and other appropriate guidance in all aspects of Wildlife Branch operations.

Wildlife Branch activities affect and interact with numerous other sections of the Incident Command and it is important that good communications are established and maintained between the Wildlife Branch and other responders. In particular, coordination between the Wildlife Branch and the Environmental Unit, a part of the Planning Section, is essential. The Planning Section may assign a Wildlife Technical Specialist to help with coordination. The Wildlife Branch Director is responsible for keeping the Operations Section Chief and Unified Command informed about the status of branch operations.

The Wildlife Branch is responsible for providing information to the Unified Command, the Planning Section, and the Public Information Officer/Joint Information Center relative to the daily numbers of alive and dead animals and their status. At the direction of the Operations Section Chief, the Wildlife Branch Director or a member of the Branch

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staff will attend tactics meetings, planning meetings, and Unified Command briefings. The Branch will also coordinate with Air Operations regarding wildlife reconnaissance/recovery flights, and coordinate with the Logistics Section in accordance with existing IC/UC policy for any materials needed. The Wildlife Branch is also responsible for working with the Planning Section, Demobilization Unit to develop the Wildlife Branch Demobilization Plan.

Response Actions

Activities associated with the activation of the Branch will be appropriate to the size of the spill. Activation of personnel and equipment is based primarily on anticipated adverse effects on wildlife. Depending on the size of the incident, the Wildlife Branch may range in size from just the Branch Director position to the full activation of the organization displayed in figure 1 including the associated equipment and personnel resources. Development of Wildlife Branch operations is an iterative, dynamic process that calls for good information, knowledge, experience, and judgment. It is important to understand that “activation” of the Branch does not mean that a full-scale wildlife response will be mounted. The level of response is completely dependent on the number of animals that may potentially be impacted.

On every spill response, the first action of the Wildlife Branch must be to deploy trained observers to the spill site to determine the extent of the initial and anticipated wildlife impacts in a timely manner. The ability to effectively determine the size and scale of the wildlife response is highly dependent on getting trained observers on-scene quickly. The initial observers must be trained personnel because the impact oil and other hazardous materials has on wildlife is not always obvious to the average responder. Oiling from light petroleum products, unlike heavy petroleum products, can be especially difficult to determine without the use of a trained observer. Unless heavily oiled, impacted wildlife may be mobile and may not remain at the site of the initial oiling. Results of the initial reconnaissance will determine the size and complexity of the Wildlife Branch and the subsequent deployment of personnel and equipment. This involves establishing the Wildlife Branch organizations, notifying the appropriate federal and state trustees, and determining rehabilitation facility needs. The number of animals affected, or potentially affected, will determine the number and type of personnel and equipment resources that are needed. The Wildlife Branch will work with Logistics to obtain resources, personnel, and equipment. Deterrence, search and recovery, primary care, rehabilitation, and

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release activities will proceed as deemed necessary and appropriate by the Wildlife Branch Director, with the approval of the Unified Command.

Oiled Bird Response

Birds are the most common wildlife affected by oil spills, especially marine birds, waterfowl, shorebirds, gulls, and predatory birds. These birds spend the majority of their time on or near the water's surface which puts them in direct contact with oil. When the feathers of a bird become oiled, they lose their capacity to insulate the bird's skin from the water. Once the water is allowed to come in contact with the bird's skin the bird becomes hypothermic, lethargic, and unable to feed and preen. Eventually the birds attempt to escape the water by beaching themselves. Oiled birds are prime targets for predatory and scavenging animals. This scavenging then leads to secondary oiling and further spread of the oil. It is important to retrieve alive and dead birds. The survival rate of rehabilitated birds depends greatly on conducting a quick response and using appropriate personnel and facilities.

The following table provides response actions needed when planning for oiled wildlife rescue and rehabilitation operations. The response resource for each specific spill should be developed on a case-by-case basis and the size of the Wildlife Branch will adjust as more accurate information about the spill incident and wildlife impacts become available. Most spill incidents in the Southeast Louisiana Area would utilize a Level IV wildlife response. Some extraordinary circumstances would require mobilization at Levels III or II from the outset. The Wildlife Branch will notify the Operations Section Chief promptly of needed changes in the deployment of personnel and equipment. The numbers depicted in the table are only rough estimates and are subject to change depending on spill conditions.

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	Level IV	Level III*	Level II*	Level I*
Projected Number of Oiled Birds	1-15	16-100	101-500	500+
Personnel				
Wildlife Branch Director	1	1	1	1
Wildlife Veterinarian**	1	1	1-2	1-2
Deputy Wildlife Branch Director	0	0-1	1	1-2
Bird Recovery & Rehabilitation Group Supervisor	0-1	1	1-2	2
Deputy Bird Recovery and Rehabilitation Group Supervisor	0	0	0	1
Bird Recovery and Rehabilitation Group Staff	0-4	1-4	5+	5+
Bird Recovery & Transportation Unit Leader	0-1	1	1-2	2
Bird Recovery & Transportation Unit Staff**	1+	2	6+	12+
Bird Rehabilitation Unit Leader	0-1	1	1-2	1-2
Bird Rehabilitation Unit Staff**	4+	8+	25+	50+
Volunteer Coordinator	0-1	1	1-2	2-3
Bird Hazing Unit Leader	0-1	0-1	1-2	1-2
Bird Hazing Unit Staff **	0-3	0-3	5+	5+
Wildlife Reconnaissance Group Supervisor	0-1	1	1-2	2
Aerial Survey Unit Leader	0-1	0-1	1	1
Aerial Survey Unit Staff**	1	1-2	2-4	5+
Boat Survey Unit Leader	0-1	0-1	1	1

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Boat Survey Unit Staff**	0-2+	2+	5+	10+
Shoreline Survey Unit Leader	0-1	0-1	1	1
Shoreline Survey Unit Staff**	0-2+	2+	20+	40+

Equipment				
Facility - Permanent or temporary	1	1+	2+	4+
Stabilization Facility	0	0	2+	4+
Primary Care Facility	0-1	0-1	2+	4+
Vehicle – Recovery	0-4	0-4	6+	12+
Vehicle – Transport	1	1+	4+	8+
Boat – Capture	0-2	0-2	4+	8+
ATVs	0-2	0-2	4+	8+
Air (helicopter)/land/water reconnaissance	0-1	0-1	1-2	1-2

1- The number of staff and equipment are based on a spill involving average sized birds (i.e.; gadwall or wigeon), with moderate oiling, that are easily accessible.

Size of birds and degree of oiling may require substantially different personnel and equipment resource. When marine mammals are affected, personnel and equipment requirements may double in number to account for separate response efforts. Note: Response levels are numbered consistent with National Incident Management System (NIMS compliant)

*The logistical needs of the Wildlife Branch are substantially different at the lower and upper ends of the range of projected oiled birds for each level

** These staff generally are not in the Command Post because they are in the field or at the rehabilitation facility. The other staff may or may not be located at the command post.

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Sea Turtles

Sea turtles are commonly found feeding in the coastal marine waters of Louisiana, although nesting is quite uncommon. Since sea turtles spend significant amounts of time at the surface and below the surface feeding, they may experience both external and internal oiling. Sea turtles impacted in nearshore waters may strand while sea turtles impacted offshore may remain there until detected. If promptly captured and treated, the survival rate of sea turtles is high. Spills pose logistical operational challenges, especially offshore, that must be promptly identified. The Sea Turtle Recovery and Rehabilitation Unit will develop a response plan including the following:

- Designate a wildlife coordinator;
- Develop an aerial survey plan to detect stranded and offshore animals;
- Develop capture, triage, and transport protocols;
- Identification of rehabilitation facilities and mobile treatment units;
- Rehabilitation, release, and tracking plans;
- Formation of a documentation team to follow Natural Resource Damage Assessment procedures, chain of custody. procedures, and storage of specimens;
- Designate a volunteer coordinator;
- Identify training requirements for personnel and volunteers;
- Identify equipment caches and needed resources for sea turtle response;
- Identify vessel requirements for response and coordination with vessels of opportunity; and
- Support and resources required for offshore capture teams, monitors, and transport personnel.

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Marine Mammals

There are 21 species of cetaceans (whales and dolphins) in the Gulf of Mexico inhabiting a broad range of habitats, from offshore (including continental shelf) and coastal ecosystems to bays, sounds, and estuaries (inshore). Manatees are also present in the Gulf of Mexico. All marine mammals are protected under the Marine Mammal Protection Act and some are also protected under the U.S. Endangered Species Act. Cetaceans fall under the jurisdiction of NOAA Fisheries and manatees fall under the jurisdiction of the U.S. Fish and Wildlife Service. Evidence suggests that marine mammals are unlikely to detect and avoid spilled oil and exposure can result in population level impacts (e.g. Matkin et al., 2008).

Marine Mammal Strandings and Mortalities

Regional marine mammal stranding networks should be notified by NOAA Fisheries and/or the U.S. Fish and Wildlife Service that a spill has occurred and that strandings should be reported directly to the Wildlife Branch via the 1-800 hotline number activated during the spill. If a carcass is found and NOAA Fisheries/U.S. Fish and Wildlife Service authorize a necropsy, the necropsy should follow established protocols in NOAA's Marine Mammal Oil Spill Response Guidelines (Johnson and Ziccardi, 2006) and be coordinated with NOAA Fisheries/U.S. Fish and Wildlife Service.

Live stranded marine mammals should be evaluated by trained marine mammal veterinarians and transported by trained, authorized personnel only to NOAA/U.S. Fish and Wildlife Service authorized rehabilitation facilities that meet the criteria established by NOAA Fisheries in their *Final Policy and Best Practices - Standards for Rehabilitation Facilities* (February 2009) and the U.S. Fish and Wildlife Service (for manatees).

Wildlife Branch Positions and Responsibilities

Duties and issues that relate to a specific position are listed under that position in the sections that follow. Not all positions will be staffed at each spill, therefore the duties described below need to be distributed to staff on hand.

Wildlife Branch Director

The Wildlife Branch Director is responsible for managing all wildlife rescue and rehabilitation operations and personnel. The Branch Director activates and supervises

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wildlife operations in accordance with the Incident Action Plan and directs its execution. In addition, the Branch Director directs the Branch Operations, requests resources, coordinates release of resources with the Planning Section, ensures coordination with other Sections or Units within the Incident Command, and reports to the Operations Section Chief. The magnitude of the event and the potential for wildlife to be impacted will dictate the level of staffing in the Wildlife Branch. Smaller spills will generally have less staff. Under these circumstances the Branch Director may have to take on additional responsibilities beyond those described below. In addition to the general duties listed above, the Wildlife Branch Director's duties include but are not limited to:

- Supervises the Wildlife Reconnaissance Group (coordinating aerial, shoreline, and on-water wildlife surveys), the Bird Recovery and Rehabilitation Group, and the Marine Mammal Recovery and Rehabilitation Group;
- Attends tactics meetings, planning meetings, and Unified Command briefings;
- Develops the Branch-specific portion of the Incident Action Plan for the next operational period (2006 Incident Management Handbook, p. 19-17);
- Manages and tracks Wildlife Branch personnel using an appropriate tracking system;
- Oversees the preparation of work order forms for Incident Action Plan preparation and logistics tracking;
- Provide updates to the Unified Command, Planning Section, and Public Information Officer/Joint Information Center regarding the status of wildlife and stranded marine mammals (alive and dead, observed and captured);
- Ensures that wildlife samples are collected in coordination with the Sampling Specialist;
- Identified methods to minimize collateral damage to wildlife and habitat from recovery, transportation, and reconnaissance operations;
- Ensures that qualified personnel perform wildlife recovery and rehabilitation safely and properly and under the appropriate authority (e.g. Stranding Agreements, permits, etc);

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- Establishes the oiled wildlife hotline to enable public reporting of oiled wildlife;
- Ensures appropriate use, maintenance, and disposition of ICS forms (documentation);
- Maintains Unit/Activity Log (ISC 214);
- Updates the media as requested by the Unified Command;
- Identifies resources that can be released and develops and implements Wildlife Branch Demobilization Plan; and
- Ensures Wildlife Branch personnel have appropriate/required training and certifications.

Deputy Wildlife Branch Director

The Deputy Wildlife Branch Director reports to the Branch Director and serves as a key member of the Branch Management Team. Duties of the Deputy Branch Director include, but are not limited to:

- Attend to Wildlife Branch Director responsibilities when the Director is absent;
- Develop and disseminate Branch organization chart;
- Ensure that Group and Team leaders are provided with appropriate job descriptions and job aids;
- Develops Wildlife Branch Safety Plan in concert with the Safety Officer, ensures that all personnel assigned to the Branch receive a daily pre-operational safety briefing and a post-operational de-briefing, and records a summary each day as a part of the Unit Log (ICS 214);
- Coordinate and document personnel and logistical support needs with Group Supervisors, prepare logistical requests to the Logistics Sections;
- Serve as direct liaison between the Branch and the Resources at Risk (RAR) Specialist and Shoreline Cleanup and Assessment Technique Team Leader(s) in the Environmental Unit;

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- Provide operational updates to the Situation Unit;
- Coordinate the development of standardized evidentiary protocols with U.S. Fish and Wildlife Service's law enforcement, National Marine Fisheries Service Office of Law Enforcement, and Natural Resource Damage Assessment representatives, ensuring that the needs of each entity are met;
- Coordinate with the Bird and Marine Mammal Recovery and Rehabilitation Group Leaders to determine logistical needs for:
 - Search and recovery
 - Field tagging of dead and alive animals
 - Transporting dead and alive animals
 - Necropsy of dead animals
 - Identification of a central wildlife processing center
 - Treatment and rehabilitation facilities
 - Veterinary Services
- Serve as a direct liaison with the Logistics Section to ensure proper documentation and timely processing of requests;
- Coordinate the oiled wildlife hotline; and
- Maintain Unit/Activity Log.

Wildlife Veterinarian

The Wildlife Veterinarian reports to the Branch Director, works closely with the Bird Recovery and Rehabilitation Supervisor, and is responsible for ensuring impacted animals are getting appropriate medical treatment. The Wildlife Veterinarian works with the Branch Director and Trustee agencies to develop euthanasia protocols appropriate for each spill incident.

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For marine mammals, each stranding network partner generally has an experienced Veterinarian to help respond to live stranded animals and for rehabilitation. The Wildlife Branch Veterinarian may oversee these pre-identified Veterinarians, but should not be a substitute for these experienced marine mammal veterinarians. Euthanasia protocols exist for marine mammals and shall be followed. New protocols shall not be developed by the Wildlife Veterinarian.

Wildlife Reconnaissance Group

The Wildlife Reconnaissance Group is responsible for determining the location and movement of animals that may be, or already have been, impacted. Daily and seasonal movement of birds and mammals necessitate rapid, real-time characterization and reconnaissance of wildlife concentrations. The Reconnaissance Group consist of the Aerial, Boat, and Shoreline Survey Units. Each unit may be composed of multiple teams. The Reconnaissance Group is responsible for coordinating surveys that occur in a habitat for threatened or endangered species and/or in sensitive areas such as State/Federal refuges, wildlife management areas, National Marine Sanctuary, Congressionally Designated Wilderness Areas, National Wildlife Refuges, State Wildlife Refuges and Wildlife Management Areas, or State Parks. Depending on the spill size, Wildlife Reconnaissance Group Teams may be integrated with Recovery and Transportation Unit teams of Shoreline Cleanup and Assessments Teams, although this is usually not desirable because it may over-task the teams. Experienced personnel are essential for effective wildlife reconnaissance and surveillance. Observers should be able to identify wildlife species, behavioral characteristics associated with oil impacts, and be knowledgeable about local ecological factors and landscape.

Reconnaissance Group personnel may include professional wildlife biologists, trustee agency representatives, contractors, and other trained personnel. If specialized surveys for threatened and endangered species are needed, additional wildlife specialists may be called in by the Reconnaissance Group Supervisor or Wildlife Branch Director. These specialists will advise the Branch Director and the Unified Command about threats to listed species, the locations and numbers of oiled animals, and the need for capture, deterrence, or other protection strategies. These experts will typically use species-specific observation protocols.

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Bird Recovery and Rehabilitation Group

The Bird Recovery and Rehabilitation Group is responsible for wildlife deterrence, recovering dead birds, capturing live birds, transporting them to processing centers, and providing medical care to impacted animals. Wildlife recovery by any agency or organization must be done under the direction of the Wildlife Branch, with approval of the Unified Command. Recovery and Rehabilitation Group personnel activated must comply with agreements and permits from the appropriate management agencies (i.e. State Fish and Wildlife agencies and USFWS). Recovery and Rehabilitation Group personnel are drawn from state and federal trustee agencies and approved contractors. Trained, qualified volunteers can be used as long as they comply with the MSU Morgan City Area Volunteer Policy (Chapter 9000, Appendix K) including ensuring appropriate training requirements and Occupational Safety and Health Administration standards are met. The Bird Recovery and Rehabilitation Group is made up of three units: Bird Recovery and Transportation; Bird Rehabilitation; and Bird Hazing. Depending on the spill size, these Units may not be staffed or may be staffed by dozens of highly-trained individuals. Depending on spill size, Recovery and Transportation teams may be integrated with Wildlife Reconnaissance Group teams or Shoreline Cleanup and Assessment Technique Teams.

Bird Recovery and Transportation Unit

The Bird Recovery and Transportation Unit is responsible for recovering alive and dead oiled birds and transporting them to rehabilitation facilities. Success at recovering impacted birds (especially mobile birds) depends on proper technique and timing. Only trained staff should recover live birds. Once captured, impacted live birds should be transported to the designated primary care or rehabilitation facility as soon as possible. Appropriate measures must be undertaken by the Wildlife Branch to ensure that dead animals are recovered, appropriately identified, documented, and held until the trustees approve disposal, or as directed by appropriate trustee agencies. The prompt removal of disabled and dead oiled animals from the environment can be critical to minimize the effects of secondary oiling such as poisoning of predators and scavengers. The Wildlife Branch, in consultation with the trustee agencies, will develop incident specific protocols and authorizations for removing and handling dead oiled birds for each incident. All alive, disabled, and freshly-dead animals, oiled and un-oiled, should be recovered and processed for triage and rehabilitation or for processing and storage, as appropriate or as directed by an appropriate trustee agency.

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Bird Rehabilitation Unit

The Bird Rehabilitation Unit is responsible for ensuring that alive birds exposed to oil receive the best achievable care and for ensuring that oiled birds are properly documented, sampled, tracked, and released. The Bird Rehabilitation Unit is responsible for the oversight of all rehabilitation facilities whether they are permanent or mobile. When rehabilitated animals are ready for release, clean, non-oiled release sites should be chosen in consultation with appropriate trustee agencies.

Facilities designed for oil spill response must meet minimum space requirements and incorporate all required aspects of bird treatment and rehabilitation. Facilities must comply with Federal and State regulations and must meet minimum recommendations in *Best Practices for Migratory Bird Care during Oil Spill Response*. An ideal facility should include:

- Areas for intake, physical exam, and evidence processing;
- Space for a veterinary hospital with isolation capabilities;
- Indoor bird housing and caging;
- Food storage and preparation facilities;
- Animal washing and rinsing areas;
- Indoor drying pens;
- Outdoor pool and pen areas;
- Pathology facilities;
- An area with restrooms, separate rooms for eating and volunteer training;
- Administrative offices with multiple phone and fax lines and with conference space;
- Storage;
- Access to a large parking area;

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- Adequate ventilation, hot and cold water, and climate control;
- Security capabilities for the facility.

Bird Hazing Unit

The Bird Hazing Unit is responsible for determining when and if bird deterrence operations should take place. The recommendation will be guided by site-specific and species-specific factors present at the time of the oil spill and availability of proven deterrence techniques. If deterrence is determined to be appropriate, the Unit should develop a site-specific deterrence plan in consultation with appropriate trustee agencies. Deterrence should always be considered in heavily impacted habitats, particularly when clean sites are present in the area. Wildlife that has already been oiled should not be dispersed, because this can lead to the introduction of oiled animals into uncontaminated areas and populations. Rather, oiled animals should be captured as soon as practical.

Deterrence devices include both visual and auditory techniques. A variety of deterrence devices are available and can be deployed to meet the situation including helicopters, fixed-wing aircraft, propane cannons, shell crackers, bird bombs, screamers, launchers, airboats, ATVs, sonic buoys, Mylar tape, lasers, flags, distress and alarm calls, and effigies. Pre-emptive capture is another means of keeping wildlife away from oil and cleanup operations. The use of Pre-emptive capture operations shall be directed by the Branch Director and expert team members and will depend on the habitat in the focus area and seasonality.

Deterrence activities must take place only under the authority and oversight of trustee agencies, in coordination with the Unified Command. The recommendation to haze will be guided by site-specific and species-specific factors at the time of the spill and availability of proven deterrence techniques. The Bird Recovery and Rehabilitation Group Supervisor directs the Bird Hazing Unit.

Marine Mammal Recovery and Rehabilitation Group

The Marine Mammal Recovery and Rehabilitation Group is responsible for the recovery and rehabilitation of impacted marine mammals. This involves deterrence and hazing of animals, recovering dead or alive stranded marine mammals, transporting them to

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facilities for necropsy and sampling (dead), or rehabilitation (alive), and providing medical care to impacted animals. These activities are performed in close coordination with the Unified Command along with state and federal trustee agencies and local or other participating Marine Mammal Stranding Network organizations. Wildlife recovery by any agency or organization must be conducted under the direction of the Unified Command. Their activities must comply with agreements and permits from the appropriate management agencies (i.e., State Fish and Wildlife agencies, NOAA National Marine Fisheries Service, USFWS).

Recovery and Rehabilitation Group personnel are drawn from state and federal trustee agencies and approved contractors. Unlike other Wildlife Branch Groups/Units, Marine Mammal Recovery and Rehabilitation personnel will include a high proportion of federal trustee personnel and professional wildlife responders/rehabilitators from federally approved organizations (through the local or other participating Marine Mammal Stranding Networks). Trained, qualified volunteers can be used as long as they comply with the MSU Morgan City Area Volunteer Policy (Appendix L) including ensuring appropriate training requirements and Occupational Safety and Health Administration standards are met. Trained, qualified volunteers must also have the appropriate authority under the MMPA/ESA to respond to marine mammals (Stranding Agreement, permit, etc.).

Marine Mammal Recovery Transportation Unit

The Marine Mammal Recovery Transportation Unit is responsible for recovering alive and dead impacted marine mammals and transporting them to facilities for rehabilitation or necropsy. The Marine Mammal Recovery and Transport Unit will evaluate the need to capture free-swimming impacted marine mammals on a case-by-case basis. If marine mammals are determined to be ill and require retrieval, capture will be instituted by the Marine Mammal Recovery and Transportation Unit, in conjunction with NOAA National Marine Fisheries Service (for cetaceans), USFWS (for manatees), and sufficiently trained and experienced capture personnel (members of the Marine Mammal Stranding Network). Success at recovering marine mammals depends on proper technique and timing. Only trained personnel should recover live marine mammals. Once captured, impacted live marine mammals should be transported to the designated primary care or rehabilitation facility as soon as possible. Appropriate measures must be undertaken by the Wildlife Branch to insure that dead animals are recovered

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appropriately, identified, documented, and held until the trustees approve disposal. The prompt removal of disabled and dead oiled animals from the environment can be critical to minimize the effects of secondary oiling such as poisoning of predators and scavengers. All alive, disabled, and freshly dead animals, oiled and un-oiled, should be recovered and processed for triage and rehabilitation or for the processing and storage, as appropriate. A Marine Mammal Stranding Report must be submitted for dead marine mammal sightings and upon capture and transport of live mammals.

Marine Mammal Rehabilitation Unit

The Marine Mammal Rehabilitation Unit is responsible for ensuring that cetaceans and manatees exposed to oil receive the best achievable care and for ensuring that oiled marine mammals are properly documented, sampled and tracked. Wildlife care includes triage, stabilization, intake/documentation, treatment, rehabilitation and release. The Marine Mammal Volunteer Coordinator also works under this group.

When rehabilitated animals are ready for release, clean, non-impacted release sites should be chosen after consulting the appropriate trustee agency or agencies. While exceptions can be made during spill emergencies, some agencies have specific requirements or policies regarding releasing animals on their properties. For cetaceans, *NOAA Fisheries Final Policies and Best Practices- Standards for Release* (February 2009), must also be followed and approval issued by the NOAA Southeast Regional Administrator. As a part of spill response actions, marine mammals are tagged and, in some cases, fitted with telemetry equipment for post-release monitoring. To guide the Marine Mammal Rehabilitation Unit in the treatment of remaining animals, wildlife pathologists or Marine Mammal Stranding Network veterinarians may conduct necropsies on animals during a spill response. However, the Wildlife Branch Director or his designee must obtain preapproval from the Unified Command for such examinations. In addition, representatives of the appropriate federal trustee agency may need to be present and have specific samples collected and analyzed.

Marine Mammal Hazing Unit

The Marine Mammal Hazing Unit is responsible for determining when and if marine mammal deterrence operations should take place. Deterrence of marine mammals is very similar in nature and function to that of birds, as detailed above. Deterrence activities must take place only under the authority and oversight of trustee agencies in coordination with the Environmental Unit. The Wildlife Branch Director will make the

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recommendation to haze to the Operations Section Chief. The recommendation will be guided by site-specific and species-specific factors present at the time of the spill and availability of proven deterrence techniques. All deterrence activities must be conducted under the appropriate authority. Deterrence activities, observations, and results are to be reported to the Marine Mammal Recovery and Rehabilitation Group Supervisor, who will report to the Wildlife Branch Director and the Planning Section's Environmental Unit Leader.

Sea Turtle Recovery and Rehabilitation Group

The Sea Turtle Recovery and Rehabilitation Group is responsible for the recovery and rehabilitation of impacted sea turtles. This involves deterrence and hazing, recovering dead or capturing live oiled sea turtles, transporting them to processing centers, and providing medical care to impacted animals. These activities are performed in close coordination with the Unified Command along with state and federal trustee agencies. Wildlife recovery by any agency or organization must be conducted under the direction of the Unified Command. Their activities must comply with agreements, permits, and policies from the appropriate management agencies (i.e., State Fish and Wildlife agencies, NOAA Fisheries Service, USFWS).

Recovery and Rehabilitation Group personnel are drawn from state and federal trustee agencies and approved contractors. Unlike other Wildlife Branch Groups/Units, sea turtle personnel will include a high proportion of state and federal trustee personnel and professional wildlife rehabilitators from approved organizations and stranding network partners. Trained, qualified volunteers can be used as long as they comply with NOAA Fisheries Service and USFWS policies and requirements, and the MSU Morgan City Area Volunteer Policy (Appendix L) including ensuring appropriate training requirements and Occupational Safety and Health Administration standards are met.

Sea Turtle Recovery and Rehabilitation Unit

The Sea Turtle Recovery and Rehabilitation Unit evaluate the need to capture live sea turtles in the water on a case-by-case basis. Responders under Unified Command may be directed to recover animals following protocols and report them to the Wildlife Branch for transport and/or treatment. Appropriate measures must be undertaken by the Wildlife Branch to insure that dead animals are recovered appropriately, identified,

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documented, and held until the trustees approve disposal. Release criteria and monitoring/tracking plans for rehabilitated sea turtles will be developed. The Sea Turtle Transportation and Rehabilitation Unit will work closely with the Documentation coordinator.

The Sea Turtle Recovery Transportation Unit is responsible for recovering alive and dead impacted sea turtles and transporting them to rehabilitation facilities.

The Sea Turtle Recovery and Transportation Unit generally collects all stranded animals and all dead animals whether in the water or on the beach. The prompt removal of disabled and dead oiled animals from the environment can be critical to minimize the effects of secondary oiling such as poisoning of predators and scavengers.

Sea Turtle Directed Capture Unit

For offshore spills, directed captures of sea turtles may be required. A plan will be instituted by the Sea Turtle Directed Capture Unit in conjunction with NOAA Fisheries Service, and authorized capture personnel. Any live-captured sea turtles should be properly treated and transported to the designated primary care or rehabilitation facility in coordination with the Sea Turtle Recovery and Transportation Unit as soon as possible. All live sea turtles collected should be processed and rehabilitated in approved rehabilitation facilities following protocols developed during the response.

Sea Turtle Observer Unit

The use of observers to collect data will be administered through the Wildlife Branch in close coordination with the Environmental Unit of the Planning Section.

Volunteers

Spill incidents that impact wildlife often generate significant interest from the general public to volunteer their efforts. Some of these volunteer workers will be assigned jobs where they are compensated; others will be assigned work where they do not receive compensation. Regardless of where and how this volunteer work force is put to use, they must be managed and appropriately trained. During a spill, the Wildlife Branch Director, in coordination with the Bird and/or Marine Mammal Recovery & Rehabilitation Group Supervisors, will determine the need to request volunteer assistance. If volunteers are used during a spill response, a volunteer coordinator (reporting to the

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appropriate Recovery & Rehabilitation Group Leader and coordinating with the overall volunteer coordinator in the Planning Section) shall be identified to direct volunteer notification, training and “employment” activities.

Volunteers shall be brought into the incident in accordance with the guidelines outlined in Chapter 9000 Appendix L.

Demobilization of Wildlife Operations

Upon conclusion of Wildlife Branch operations, its activities are demobilized following the standard checkout procedures identified through the ICS and the Unified Command. Wildlife Branch demobilization only occurs after a conclusive determination by the Wildlife Branch Director in consultation with the Groups within the Wildlife Branch and other trustee agencies and land managers that all wildlife affected by the spill have been accounted for in response operations.

Demobilization of the Wildlife Branch often lags behind that of other response operations for several reasons, such as animals remaining in rehabilitative care, the presence of residual oil, and the presence of visibly oiled marine mammals, sea turtles, and free-flying birds. The last resource of the Unified Command to be demobilized may be rehabilitation personnel, equipment and facilities used during the spill. Because cleaning, treatment and rehabilitation of oiled and injured wildlife may last several weeks to months, animals brought into the rehabilitation center late in the response may require care after other response resources have demobilized. During that time, as more animals are released and fewer animals remain in care, personnel and equipment resources will be gradually demobilized as appropriate.

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Louisiana Wildlife Rescue Organizations

The following is a list of permitted Wildlife Rescue Organizations located in Louisiana.

Name	Permit #	Wildlife Type	City	State	Day Phone
	#R-95-039	Native Mammals	Alexandria	LA	(337) 472-9966
	#R-96-01	Native Mammals	Livingston	LA	(225) 698-3168
	#R-96-02	Native Birds and Mammals	Haughton	LA	(337) 949-1596
	#R-96-03	Native Birds and Mammals	Sulphur	LA	(337) 762-3111
Caddo Parish Commission	#R-96-04	Native Birds and Mammals	Shreveport	LA	(318) 929-2806
	#R-96-05	Native Mammals	Mandeville	LA	(504) 626-5542
	#R-96-06	Native Birds and Mammals	Slidell	LA	(504) 649-6036
Terrebonne Humane Society	#R-96-07	Native Birds	Houma	LA	(985) 873-1095

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	#R-96-08	Native Mammals	Harahan	LA	(504) 738-0683
	#R-96-09	Native Birds and Mammals	Lake Charles	LA	(337) 477-6129
	#R-96-10	Native Mammals	Belle Chasse	LA	(504) 477-6129
	#R-96-11	Native Birds and Mammals	Lafayette	LA	(337) 433-5955
Westlake Bird Sanctuary & Rehabilitation Center	#R-96-12	Native Birds and Mammals	Westlake	LA	(337) 433-5955
	#R-96-13	Turtles and Tortoises	Bastrop	LA	(318) 281-0113
	#R-96-14	Native Birds and Mammals	Grand Coteau	LA	(337) 662-1053
Helping Hands, Inc.	#R-96-16	Native Birds	Metairie	LA	(504) 888-5510
LSU Raptor and Rehabilitation Unit	#R-96-17	Native Birds and Mammals	Baton Rouge	LA	(225) 578-9600
Louisiana Purchase	#R-96-19	Native Birds and	Monroe	LA	(318) 329-2400

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Gardens and Zoo		Mammals			
Clearwater Wildlife Sanctuary	#R-96-20	Native Birds and Mammals	Covington	LA	(504) 892-0760
	#R-96-21	Native Mammals	Monroe	LA	(318) 343-6062
Bayou Wildlife Rescue	#R-96-22	Native Mammals	Marrero	LA	(504) 348-1878
	#R-96-23	Native Mammals	Metairie	LA	(504) 455-4087
	#R-96-24	Native Mammals	Mandeville	LA	(504) 626-8871
Calcasieu Parish Animal Control	#R-96-25	Birds and Mammals	Lake Charles	LA	(337) 439-8879
	#R-96-27	Native Birds and Mammals	Jennings	LA	(337) 824-1190
Louisiana Wildlife CPR	#R-96-28	Native Birds and Mammals	Metairie	LA	(504) 488-9832
	#R-96-29	Native Mammals	Monroe	LA	(318) 343-7466
	#R-96-30	Native Birds and Mammals	Ponchatoula	LA	(504) 386-6374

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#R-96-31	Native Birds and Mammals	Shriever	LA	(985) 447-1013
#R-96-32	Native Mammals	Monroe	LA	(318) 839-3831

SOUTHEAST
LOUISIANA
AREA
CONTINGENCY
PLAN

Chapter 9000 Appendix I
Special Monitoring of
Applied Response
Technologies

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SPECIAL MONITORING of APPLIED RESPONSE TECHNOLOGIES

Developed by:

U.S. Coast Guard
National Oceanic and Atmospheric Administration
U.S. Environmental Protection Agency
Centers for Disease Control and Prevention
Minerals Management Service



Smoke rising from the *New Carissa*, February 1999. Photo by USCG

SMART is a living document

SMART is a living document. We expect that changing technologies, accumulated experience, and operational improvements will bring about changes to the SMART program and to the document. We would welcome any comment or suggestion you may have to improve the SMART program.

Please send your comments to:

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SMART approval status

As of January, 2001 EPA Regions II, III, and VI adopted SMART. It was reviewed and approved by the National Response Team (NRT).

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SMART is a Guidance Document Only

Purpose and Use of this Guidance:

This manual and any internal procedures adopted for its implementation are intended solely as guidance. They do not constitute rulemaking by any agency and may not be relied upon to create right or benefit, substantive or procedural, enforceable by law or in equity, by any person. Any agency or person may take action at variance with this manual or its internal implementing procedures. Mention of trade names or commercial products does not constitute endorsement or recommendation for their use by the USCG, NOAA, EPA, CDC, or the Government of the United States of America.

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INTRODUCTION

The need for protocols to monitor response technologies during oil spills has been recognized since the early 1980s. Technological advances in dispersant applications and in situ burning (referred to as *applied response technologies*) have resulted in their increased acceptance in most regions in the U.S. Many regions have set up pre-approval zones for dispersant and in-situ burn operations, and established pre-approval conditions, including the requirement for monitoring protocols. This reaffirms the need for having national protocols to standardize monitoring, especially when the Federal Government assumes full responsibility for the response under the National Oil and Hazardous Substances Pollution Contingency Plan (Title 40 CFR Part 300). Protocols are also needed to serve as guidelines for assisting or overseeing industry's monitoring efforts during spills.

In November 1997, a workgroup consisting of Federal oil spill scientists and responders from the U.S. Coast Guard, the National Oceanic and Atmospheric Administration, the U.S. Environmental Protection Agency, and the Centers for Disease Control and Prevention, convened in Mobile, Alabama to draft guidelines for generating this protocol. The workgroup built upon currently available programs and procedures, mainly the Special Response Operations Monitoring Program (SROMP), developed in 1994, and lessons learned during spill responses and drills. The result of this collaboration is the Special Monitoring of Applied Response Technologies (SMART) program.

SMART establishes a monitoring system for rapid collection and reporting of real-time, scientifically based information, in order to assist the Unified Command with decision-making during in situ burning or dispersant operations. SMART recommends monitoring methods, equipment, personnel training, and command and control procedures that strike a balance between the operational demand for rapid response and the Unified Command's need for feedback from the field in order to make informed decisions.

SMART is not limited to oil spills. It can be adapted to hazardous substance responses where particulate air emissions should be monitored, and to hydrocarbon-based chemical spills into fresh or marine water.

General Information on SMART Modules

A. General Considerations and Assumptions

Several considerations guided the workgroup in developing the SMART guidelines:

1. SMART is designed for use at oil spills both inland and in coastal zones, as described in the National Oil and Hazardous Substances Pollution Contingency Plan.
2. SMART does not directly address the health and safety of spill responders or monitoring personnel, since this is covered by the general site safety plan for the incident (as required by 29 CFR 1910.120).
3. SMART does not provide complete training on monitoring for a specific technology. Rather, the program assumes that monitoring personnel are fully trained and qualified to use the equipment and techniques mentioned and to follow the SMART guidelines.
4. SMART attempts to balance feasible and operationally efficient monitoring with solid scientific principles.
5. In general, SMART guidelines are based on the roles and capabilities of available federal, state, and local teams, and NOAA's Scientific Support Coordinators (SSC). The SSC most

often fills the role of Technical Specialist, mentioned throughout the document. Users may adopt and modify the modules to address specific needs.

6. SMART uses the best available technology that is operationally practical. The SMART modules represent a living document and will be revised and improved based on lessons learned from the field, advances in technology, and developments in techniques.
7. SMART **should not** be construed as a regulatory requirement. It is an option available for the Unified Command to assist in decision-making. While every effort should be made to implement SMART or parts of it in a timely manner, **in situ burning or dispersant application should not be delayed** to allow the deployment of the SMART teams.
8. SMART is not intended to supplant private efforts in monitoring response technologies, but is written for adoption and adaptation by any private or public agency. Furthermore, users may choose to tailor the modules to specific regional needs. While currently addressing monitoring for in-situ burning and dispersant operations, SMART will be expanded to include monitoring guidelines for other response technologies.
9. It is important that the Unified Command agree on the monitoring objectives and goals early on in an incident. This decision, like all others, should be documented.

B. Organization

The SMART document is arranged in modules. Each module is self-sustaining and addresses monitoring of a single response technology. The modules are divided into three sections:

Section 1: Background Information provides a brief overview of the response technology being used, defines the primary purpose for monitoring, and discusses monitoring assumptions.

Section 2: Monitoring Procedures provide general guidelines on what, where, when, and how to monitor; information on organization; information flow; team members; and reporting of data.

Section 3: Attachments provide detailed information to support and expand sections 1 and 2.

MONITORING DISPERSANT OPERATIONS

1. BACKGROUND

1.1 Mission Statement

To provide a monitoring protocol for rapid collection of real-time, scientifically based information, to assist the Unified Command with decision-making during dispersant applications.

1.2 Overview of Dispersants

Chemical dispersants combine with oil and break a surface slick into small droplets that are mixed into the water column by wind, waves, and currents. The key components of a chemical dispersant are one or more surface-active agents, or surfactants. The surfactants reduce the oil-water interfacial tension, thus requiring only a small amount of mixing energy to increase the surface area and break the slick into droplets.

Several actions must occur for a surface oil slick to be chemically dispersed:

- The surfactant must be applied to the oil in an appropriate ratio;
- The surfactant must mix with the oil or move to the oil/water interface;
- The molecules must orient properly to reduce interfacial tension;
- Energy (such as waves) must be applied to form oil droplets; and
- The droplets must not recoalesce significantly.

Dispersants can be applied by air from airplanes and helicopters, by land using pumping/spray systems, or by boat. They are usually applied in small droplets and in lower volumes than the oil being treated.

1.3 Monitoring Dispersant Application

When dispersants are used during spill response, the Unified Command needs to know whether the operation is effective in dispersing the oil. The SMART dispersant monitoring module is designed to provide the Unified Command with real-time feedback on the efficacy of dispersant application. Data collected in Tier III of the SMART dispersant protocol may be useful for evaluating the dilution and transport of the dispersed oil. **SMART does not monitor the fate, effects, or impacts of dispersed oil.**

Dispersant operations and the need to monitor them vary greatly. Therefore, SMART recommends three levels (or tiers) of monitoring.

1. Tier I employs the simplest operation, visual monitoring, which may be coupled with Infra Red Thermal Imaging or other remote detection methods.
2. Tier II combines visual monitoring with on-water teams conducting real-time water column monitoring at a single depth, with water-sample collection for later analysis. **While fluorometry remains the most technologically advantageous detection method, other approaches may be considered. The performance-based guidelines provided in attachment 10 define SMART Dispersant Module Criteria for instrument selection and validation**
3. Tier III expands on-water monitoring to meet the information needs of the Unified Command. It may include monitoring at multiple depths, the use of a portable water laboratory, and/or additional water sampling. Tier III monitoring might for example include the redeployment of the monitoring team to a sensitive resource (such as near a coral reef system) as either a protection strategy or to monitor for evidence of exposure. In addition, Tier III might include the use of the monitoring

package for activities unrelated to actual dispersant operations such as monitoring of natural dispersion or to support surface washing activities where water column concerns have been identified. Any Tier III operation will be conducted with additional scientific input from the Unified Command to determine both feasibility and help direct field activities. The Scientific Support Coordinator or other Technical Specialists would assist the SMART Monitoring Team in achieving such alternative monitoring goals.

2. MONITORING PROCEDURES

2.1 Tier I: Visual Observations

Tier I recommends visual observation by a trained observer. A trained observer, using visual aids, can provide a general, qualitative assessment of dispersant effectiveness. Use of guides such as the NOAA *Dispersant Application Observer Job Aid* is recommended for consistency. Observations should be photographed and videotaped to help communicate them to the Unified Command, and to better document the data for future use.

When available, visual monitoring may be enhanced by advanced sensing instruments such as infrared thermal imaging. These and other devices can provide a higher degree of sensitivity in determining dispersant effectiveness.

Visual monitoring is relatively simple and readily done. However, visual observations do not always provide confirmation that the oil is dispersed. Tier II provides a near real-time method using water column monitoring via a direct reading instrument and water sampling.

2.2 Tier II: On-Water Monitoring for Efficacy

Sometimes dispersant operations effectiveness is difficult to determine by visual observation alone. To confirm the visual observations, a monitoring team may be deployed to the dispersant application area to confirm the visual observations by using real-time monitoring and water sampling. SMART defines it as Tier II monitoring.

Tier II prescribes single depth monitoring at 1-meter but rough field conditions may force continuous flow monitoring at increased depths of up to 2 meters. Water sampling may be conducted in concert with in-situ monitoring rather than collecting samples from the flow-through hose. Such a change may reduce direct comparisons between field instrument and laboratory verifications, but the data is still expected to meet mission requirements.

A water-column monitoring team composed of at least one trained technician and a support person is deployed on a suitable platform. Under ideal circumstances, the team collects data in three primary target locations: (1) background water (no oil); (2) oiled surface slicks prior to dispersant application, and (3) post-application, after the oil has been treated with dispersants. Data are collected in real-time by both a built-in data-logging device and by the technician who monitors the readings from the instrument's digital readout and records them in a sampling log. The sampling log not only provides a backup to the data logger, but allows the results to be communicated, near real-time, to the appropriate technical specialist in the Unified Command. Data logged by the instrument are used for documentation and scientific evaluation.

The field team should record the time, instrument readings, and any relevant observations at selected time intervals. Global Positioning System (GPS) instruments are used to ascertain the exact position of each reading.

If feasible, water samples should be collected in bottles to validate and quantify monitoring results. Samples should be collected at the outlet port or discharge side of the monitoring instrument to ensure the integrity of the readings. Exact time and position is noted for each sample taken to correlate the instrument reading. The number of water samples taken reflects the monitoring effort. Generally, five samples collected for each data run is considered adequate in addition to background samples. The water samples are stored in a cooler and sent to a laboratory for future analysis.

2.3 Tier III: Additional Monitoring

Tiers I and II provide feedback to the Unified Command on the effectiveness of dispersant application. If dispersants are effective and additional information on the movement of the dispersed oil plume is desired, SMART Tier III procedures can address this need.

Tier III follows Tier II procedures, but collects information on the transport and dispersion of the oil in the water column. It helps to verify that the dispersed oil is diluting toward background levels. Tier III is simply an expanded monitoring role that is intended to meet the needs of the Unified Command.

Tier III monitoring may be conducted as follows:

1. Multiple depths with one instrument: This monitoring technique provides a cross-section of relative concentrations of dispersed oil at different depths, measuring the dilution of dispersed oil down to background levels. When transecting the dispersant-treated slick (as outlined for Tier II) the team stops the vessel at location(s) where elevated readings are detected at 1 meter and, while holding position, the team monitors and collects samples at multiple increments down to a maximum depth of 10 meters. Readings are taken at each water depth, and the data recorded both automatically in the instrument data logger and manually by the monitors. Manual readings should be taken at discrete time intervals of 2 minutes, 5 minutes, etc. as specified by the Monitoring Group Supervisor or as indicated in a written sampling plan developed by the Dispersant Technical Specialist.
2. Transect at two different depths: This technique also looks at changes in concentration trends, but uses two monitoring instruments at different depths as the monitoring vessel transects the dispersed oil slick while making continuous observations. It is done as follows:

Monitoring is conducted at two different depths, 1 and 5 meters, or any two water depths agreed upon by the Incident Commander or the Unified Command. Two sampling setups and two separate monitoring instruments are used on a single vessel. The vessel transects the dispersant-treated slick as outlined in Tier II, except that now data are collected simultaneously for two water depths. While the data logger in each instrument automatically records the data separately, the monitoring team manually records the data from both instrument simultaneously at discrete time intervals of 2 minutes, 5 minutes, etc. as specified by the Monitoring Group Supervisor or the sampling plan developed by the Dispersant Technical Specialist. Comparison of the readings at the two water depths may provide information on the dilution trend of the dispersed oil.

3. Water parameters: In addition to instrument data, the Unified Command may request that water physical and chemical parameters be measured. This can be done by using a portable lab connected in-line with the instrument to measure water temperature, conductivity, dissolved oxygen content, pH, and turbidity. These data can help explain the behavior of the dispersed oil. The turbidity data may provide additional information on increased concentrations of dispersed oil if turbidity is elevated. The other physical and chemical parameters measure the characteristics of the water column that could possibly affect the rate of dispersion.

4. As in Tier II, water samples are collected, but in greater numbers to help validate instrument readings.

Calibration and documentation used for Tier II are valid for Tier III as well, including the use of a check standard to verify instrument response. Because of the increased complexity of Tier III, a dispersant technical specialist (e.g., member of the scientific support team) should be on location to assist the monitoring efforts.

A critical point to keep in mind is that in the hectic and rapidly changing conditions of spill response, flexibility and adaptability are essential for success. The sampling plan is dictated by many factors such as the availability of equipment and personnel, on-scene conditions, and the window of opportunity for dispersant application. The need for flexibility in sampling design, effort, and rapid deployment (possibly using a vessel of opportunity), may dictate the nature and extent of the monitoring. To assist the monitoring efforts, it is important that the unified command agrees on the goals and objectives of monitoring and chooses the Tier or combination thereof to meet the needs of the response.

2.4 Mobilizing Monitoring Resources

Dispersant application has a narrow window of opportunity. Time is of the essence and timely notification is critical. It is imperative that the monitoring teams and technical advisors are notified of possible dispersant application and SMART monitoring deployment as soon as they are considered, even if there is uncertainty about carrying out this response option. Prompt notification increases the likelihood of timely and orderly monitoring.

The characteristics of the spill and the use of dispersants determine the extent of the monitoring effort and, consequently, the number of teams needed for monitoring. For small-scale dispersant applications, a single visual monitoring team may suffice. For large dispersant applications several visual and water-column monitoring teams may be needed.

2.5 Using and Interpreting Monitoring Results

Providing the Unified Command with objective information on dispersant efficacy is the goal of Tier I and II dispersant monitoring. When visual observations and on-site water column monitoring confirm that the dispersant operation is not effective, the Unified Command may consider evaluating further use. If, on the other hand, visual observations and/or water column monitoring suggest that the dispersant operation is effective, dispersant use may be continued.

When using fluorometry, the readings will not stay steady at a constant level but will vary widely, reflecting the patchiness and inconsistency of the dispersed oil plume. Persons reviewing the data should look for trends and patterns providing good indications of increased hydrocarbon concentrations above background. As a general guideline only, a fluorometer signal increase in the dispersed oil plume of five times or greater over the difference between the readings at the untreated oil slick and background (no oil) is a strong positive indication. This should not be used as an action level for turning on or off dispersant operations. The final recommendation for turning a dispersant operation on or off is best left to the judgment of the Technical Specialist charged with interpreting the data. The Unified Command, in consultation with the Technical Specialist, should agree early on as to the trend or pattern that they would consider indicative or non-indicative of a successful dispersant operation. This decision should be documented.

2.6 SMART as Part of the ICS Organization

SMART activities are directed by the Operations Section Chief in the Incident Command System (ICS). A "group" should be formed in the Operations Section to direct the monitoring effort. The head of this group is the Monitoring Group Supervisor. Under each group there are teams: Visual

Monitoring Teams and Water Column Monitoring Teams. At a minimum, each monitoring team consists of two trained members: a monitor and an assistant monitor. An additional team member could be used to assist with sampling and recording. The monitor serves as the team leader. The teams report to the Monitoring Group Supervisor, who directs and coordinates team operations, under the control of the Operations Section Chief.

Dispersant monitoring operations are very detailed. They are linked with the dispersant application, but from an ICS management perspective, they should be separated. Resources for monitoring should be dedicated and not perform other operational functions.

2.7 Information Flow and Data Handling

Communication of monitoring results should flow from the field (Monitoring Group Supervisor) to those persons in the Unified Command who can interpret the results and use the data. Typically this falls under the responsibility of a Technical Specialist on dispersants in the Planning Section of the command structure. For the U.S. Coast Guard, the technical specialist is the Scientific Support Coordinator. Note that the operational control of the monitoring groups remains with the Operations Section Chief, but the reporting of information is to the Technical Specialist in the Planning Section.

The observation and monitoring data will flow from the Monitoring Teams to the Monitoring Group Supervisor. The Group Supervisor forwards the data to the Technical Specialist. The Technical Specialist or his/her representative reviews the data and, most importantly, formulates recommendations based on the data. The Technical Specialist communicates these recommendations to the Unified Command.

Quality assurance and control should be applied to the data at all levels. The Technical Specialist in the Planning section is the custodian of the data during the operation. The data belongs to the Unified Command. The Unified Command should ensure that the data are properly stored, archived, and accessible for the benefit of future monitoring operations.

3. ATTACHMENTS

The following attachments are designed to assist response personnel in implementing the SMART protocol. A short description of each attachment is provided below. Attachments may be modified as required to meet the stated objectives. **These attachments are still valid related to the use of the Turner Design AU-10 instrument package. Should monitoring teams choose to change to alternative instrument packages, like protocols would be required to insure proper training, documentation, and QA/QC.**

Number	Title	Description
3.1	Roles and Responsibilities	Detailed roles and responsibilities for responders filling monitoring positions
3.2	Command, Control, and Data Flow	An ICS structure for controlling monitoring units and transferring monitoring results
3.3	Dispersant Observation General Guidelines	General guidelines for Tier I monitoring
3.4	Dispersant Observation Training Outline	Outline of what should be covered for Tier I observation training
3.5	Dispersant Observation Checklist	Equipment and procedure checklist for Tier I monitoring
3.6	Dispersant Observation Pre-Flight List	A checklist for getting air resources coordinated and ready for Tier I monitoring
3.7	Dispersant Observation Reporting Form	A form for recording Tier I observations
3.8	Dispersant Monitoring Training Outline	A training outline for water column monitoring done in Tiers II and III
3.9	Dispersant Monitoring Job Aid Checklist	A list of the tasks to accomplish before, during, and after the monitoring operations
3.10	Dispersant Monitoring Performance Guidelines	A list of performance guidelines for monitoring dispersants
3.11	Dispersant Monitoring Field Guidelines	Field procedures for using Tier II and III monitoring protocols
3.12	Dispersant Monitoring Water Sampling	Procedures for collecting water samples for Tiers II and III
3.13	Dispersant Monitoring Recorder Sheet	A form for recording fluorometer readings for Tiers II and III

3.1 Roles and Responsibilities

3.1.1 Visual Monitoring Team

The Visual Monitoring Team is ideally composed of two persons: a Monitor and an Assistant Monitor.

The Monitor:

- Functions as the team leader
- Qualitatively measures dispersant effectiveness from visual observation
- Communicates results to the Monitoring Group Supervisor.

The Assistant Monitor:

- Provides photo and visual documentation of dispersant effectiveness
- Assists the Monitor as directed.

3.1.2 Water-Column Monitoring Team

The Water-Column Monitoring Team is composed of a minimum of two persons: a Monitor and Assistant Monitor. They shall perform their duties in accordance with the Tier II and Tier III monitoring procedures.

The Monitor:

- Functions as the team leader
- Operates water-column monitoring equipment
- Collects water samples for lab analysis
- Communicates results to the Monitoring Group Supervisor.

The Assistant Monitor:

- Provides photo and visual documentation of dispersant effectiveness
- Assists Monitor as directed
- Completes all logs, forms, and labels for recording water column measurements, water quality measurements, interferences, and environmental parameters.

3.1.3 Monitoring Group Supervisor

The Monitoring Group Supervisor:

- Directs Visual Monitoring and Water Column Monitoring teams to accomplish their responsibilities
- Follows directions provided by the Operations Section in the ICS
- Communicates monitoring results to the Technical Specialist in the Planning Section
- The Monitoring Group Supervisor may not be needed for a Tier I deployment. In these cases, the Visual Monitoring Team monitor may perform the duties of the Monitoring Group Supervisor.

3.1.4 Dispersant Monitoring Technical Specialist (Federal: NOAA SSC)

The Technical Specialist or his/her representative:

- Establishes communication with the Monitoring Group Supervisor
- Advises the Group Supervisor on team placement and data collection procedures
- Receives the data from the Group Supervisor
- Ensures QA/QC of the data, and analyzes the data in the context of other available information and incident-specific conditions
- Formulates recommendations and forwards them to the Unified Command
- Makes the recommendations and data available to other entities in the ICS
- Archives the data for later use, prepares report as needed.

3.2 Command, Control, and Data Flow

In general, dispersant monitoring operations take place as an integral part of the Incident Command System (see Figures 1 and 2).

Dispersant monitoring operations are tactically deployed by the Operations Section Chief or deputy, in cooperation with the Technical Specialist (SSC) in the Planning Section regarding the specifics of the monitoring operations, especially if they affect the data collected. The Monitoring Group Supervisor provides specific on-scene directions to the monitoring teams during field deployment and operations.

The observation and monitoring data flow from the Monitoring Teams to the Monitoring Group Supervisor. After initial QA/QC the Group Supervisor passes the data to the Technical Specialist to review, apply QA/QC if needed, and, most importantly, formulate recommendations based on the data. The Technical Specialist forwards these recommendations to the Unified Command.

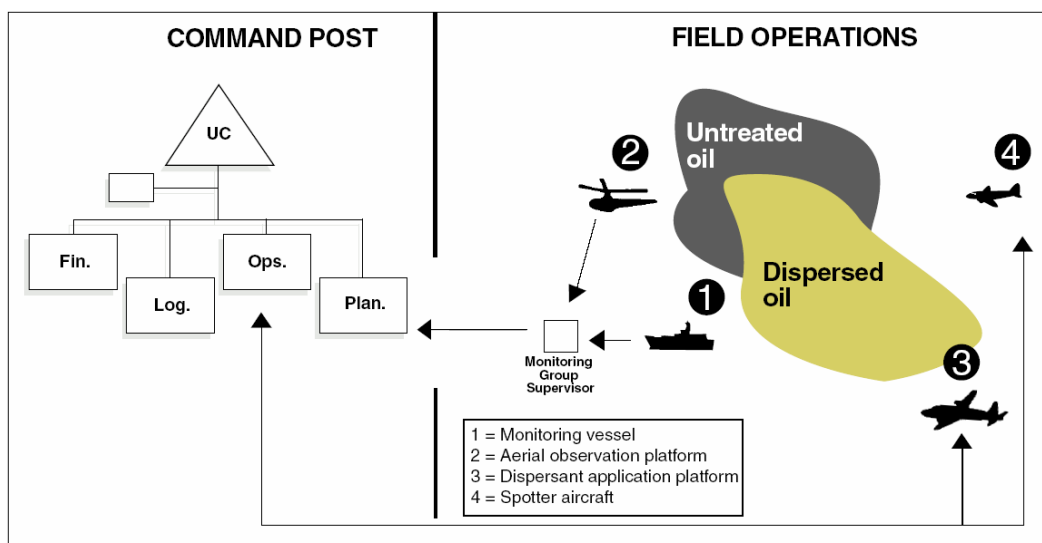


Figure 1. Command, control, and data flow during dispersant monitoring operations.

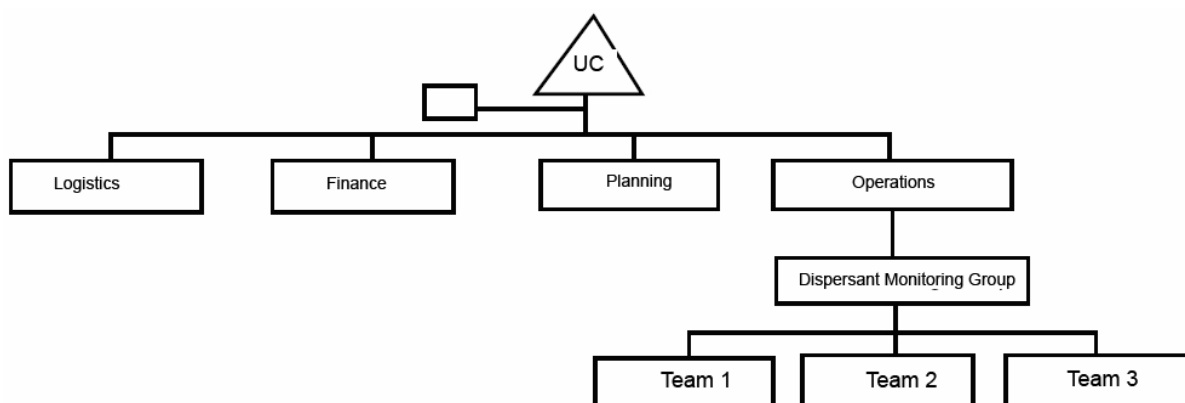


Figure 2. The Dispersant Monitoring Group in the ICS structure.

3.3 Dispersant Observation General Guidelines

3.3.1 Goal

The goal of Tier I monitoring is to identify oil, visually assess efficacy of dispersants applied to oil, and report the observations to the Unified Command with recommendations. The recommendations may be to continue, to modify, or to evaluate further monitoring or use because dispersants were not observed to be effective.

3.3.2 Guidelines and Pointers

3.3.2.1 Reporting Observations

- The observer does not make operational decisions, e.g., how much dispersant to apply, or when and where to apply it. These decisions are made at the Operations Section level, and the observer makes observations based on those decisions.
- Different observers at the same site may reach different conclusions about how much of the slick has been dispersed. For that reason, a comprehensive standard reporting criteria and use of a common set of guidelines is imperative. Use of the NOAA *Dispersant Application Observer Job Aid* is highly encouraged.

3.3.2.2 Oil on the Water

- Oil surface slicks and plumes can appear different for many reasons including oil or product characteristics, time of day (different sun angles), weather, sea state, rate at which oil disperses. The use of the NOAA *Open Water Oil Identification Job Aid for Aerial Observation* is highly recommended.
- Low-contrast conditions (e.g., overcast, twilight, and haze) make observations difficult.
- For best viewing, the sun should be behind the observer and with the aircraft at an altitude of about 200 - 300 feet flying at a 30-degree angle to the slick.

3.3.2.3 Dispersant Applications

- During dispersant application, it may be impossible to determine the actual area of thickest oil concentrations, resulting in variable oil/dispersant application rates. This could lead to variations in the effectiveness of application. The observer should report these conditions.
- Initial applications may have a herding effect on the oil. This would cause the slick to appear to be shrinking when, in fact, it is the dispersant “pushing” the oil together. Due to this effect, in some cases, the oil slick may even disappear from the sea surface for a short time.
- After dispersant application, there may be color changes in the emulsified slick due to reduction in water content and viscosity, and changes in the shape of the slick, due to the de-emulsification action of the dispersant.
- Many trials have indicated that dispersants apparently modify the spreading rates of oils, and within a few hours treated slicks cover much larger areas than control slicks.
- In some situations, especially where there may be insufficient mixing energy, oil may resurface.

3.3.2.4 Effective/Ineffective Applications

- Dispersed oil plume formation may not be instantaneous after dispersant application. In some cases, such as when the oil is emulsified, it can take several hours. A dispersed oil plume may not form at all.
- The appearance of the dispersed plume can range from brown to white (cloudy) to no visible underwater plume (this is why Tier II may be necessary).
- Sometimes other things such as suspended solids may resemble dispersed oil.
- The visibility of the dispersed plume will vary according to water clarity. In some cases, remaining surface oil and sheen may mask oil dispersing under the slick and thus interfere with observations of the dispersed oil plume.
- Dispersed oil plumes are often highly irregular in shape and non-uniform in concentration. This may lead to errors in estimating dispersant efficiency.
- If a visible cloud in the water column is observed, the dispersant is working. If a visible cloud in the water column is not observed, it is difficult to determine whether the dispersant is working.
- If there are differences in the appearance between the treated slick and an untreated slick, the dispersant may be working.
- Boat wakes through oil may appear as a successful dispersion of oil; however, this may be just the vessel wake breaking a path through the oil (physically parting the oil), not dispersing it.

3.4 Dispersant Observation Training Outline

Below is a suggested outline for dispersant observation training.

Topics and sub-topics	Duration
Observation Platforms	30 min.
<ul style="list-style-type: none"> • Helo or fixed-wing, separate from application platform • Safety considerations: daylight; safe flying conditions • Logistical considerations: personnel; equipment; communication • Planning an over-flight 	
Oil on water	1 hour
<ul style="list-style-type: none"> • Physical properties • Different types of oil • Chemistry, crude vs. refined product • Appearance and behavior • Effects of wind, waves, and weather 	
How dispersants work	45 min.
<ul style="list-style-type: none"> • Method of action • Compatible/incompatible products • Appropriate environmental conditions (wave energy, temperature, salinity, etc.) • Oil weathering • Oil slick thickness • Beaching, sinking, etc. 	
Dispersant application systems	45 min.
<ul style="list-style-type: none"> • Platform: boat, helo, plan • Encounter rate • Importance of droplet size • Dispersant-to-oil ratio (dosage) 	
• Effective application	45 min.
<ul style="list-style-type: none"> • Hitting the target • Dispersal into water column • Color changes • Herding effect 	
• Ineffective application	30 min.
<ul style="list-style-type: none"> • Missing the target • Oil remaining on surface • Coalescence and resurfacing 	
• Wildlife concerns	30 min.
<ul style="list-style-type: none"> • Identifying marine mammals and turtles • Rafting birds 	
• Documenting observations	30 min.
<ul style="list-style-type: none"> • Estimating surface coverage • Photographs: sun reflection effects, use of polarizing filter, videotaping • Written notes and sketches 	
• Reporting observations	30 min.
<ul style="list-style-type: none"> • Calibrating eyeballs • Recommended format • Information to include • Who to report to • Coordination with water-column monitoring 	

3.5 Dispersant Observation Checklist

Below is a dispersant observation checklist. Check √ the items/tasks accomplished.

Check √	Item
	Observation Aids
	Base maps / charts of the area
	Clipboard and notebook
	Pens / pencils
	Checklists and reporting forms
	Handheld GPS with extra set of batteries
	Observation job aids (<i>Oil on Water & Dispersant Observation</i>)
	Still camera
	Extra film
	Video camera
	Binoculars
	Safety Equipment
	Personal flotation device
	Emergency locator beacon
	Survival equipment
	NOMEX coveralls (if available)
	Coldwater flotation suit (if water temperature requires)
	Intercom
	Direct communications back to the Incident Command Post
	Safety Brief
	Preflight safety brief with pilot
	Safety features of aircraft (fire extinguishers, communications devices, emergency locator beacon, flotation release, raft, first aid kit, etc.)
	Emergency exit procedures
	Purpose of mission
	Area orientation / copy of previous over-flight
	Route / flight plan
	Duration of flight
	Preferred altitude
	Landing sites
	Number of people on mission
	Estimated weight of people and gear
	Gear deployment (if needed, i.e., dye marker, current drogue)
	Frequency to communicate back to command post

3.6 Dispersant Observation Pre-Flight List

Spill Information				
Incident Name:				
Source Name:				
Date / Time Spill Occurred				
Location of Spill: Latitude			Longitude	
Type of Oil Spilled:			Amount of Oil Spilled:	
Weather On Scene				
Wind Speed and Direction				
Visibility:			Ceiling:	
Precipitation:			Sea State:	
Aircraft Assignments				
Title	Name	Call Sign	ETD	ETA
Spotter (s)				
Sprayer (s)				
Observer (s)				
Monitor (s)				
Supervisor				
Safety Check				
Check all safety equipment. Pilot conducts safety brief				
Entry/Exit Points				
	Airport	Tactical Call Sign		
Entry:				
Exit:				
Communications (complete only as needed; primary/secondary)				
Observer to Spotter (air to air)	VHF	UHF	Other	
Observer to Monitor (air to vessel)	VHF	UHF	Other	
Observer to Supervisor (air to ground)	VHF	UHF	Other	
Supervisor to Monitor (ground to vessel)	VHF	UHF	Other	
Monitor to Monitor (vessel to vessel)	VHF	UHF	Other	

3.7 Dispersant Observation Reporting Form

Names of observers/Agency: _____

Phone/pager: _____ Platform: _____

Date of application: _____ Location: Lat.: _____ Long.: _____

Distance from shore: _____

Time dispersant application started: _____ Completed: _____

Air temperature: _____ Wind direction _____ Wind speed: _____

Water temperature: _____ Water depth: _____ Sea state: _____

Visibility: _____

Altitude (observation and application platforms): _____

Type of application method (aerial/vessel): _____

Type of oil: _____

Oil properties: specific gravity _____ viscosity _____ pour point _____

Name of dispersant: _____

Surface area of slick: _____

Operational constraints imposed by agencies: _____

Percent slick treated: _____ Estimated efficacy: _____

Visual appearance of application: _____

Submerged cloud observed? _____

Recoalescence (reappearance of oil): _____

Efficacy of application in achieving goal (reduce shoreline impact, etc.): _____

Presence of wildlife (any observed effects, e.g., fish kill): _____

Photographic documentation: _____

Lessons learned: _____

3.8 Fluorometry Monitoring Training Outline

3.8.1 General¹

Training for Tier II and III monitoring consists of an initial training for personnel involved in monitoring operations, Group Supervisor training, and refresher training sessions every six months. Emphasis is placed on field exercise and practice.

3.8.2 Basic Training

Monitor Level Training includes monitoring concepts, instrument operation, workprocedures, and a field exercise.

Topic	Duration
Brief overview of dispersant monitoring. Review of SMART: What is it, why do it, what is it good for.	1 hour
Monitoring strategy: who, where, when. Reporting	1 hour
Basic instrument operation (hands-on): how the fluorometer works, how to operate: brief description of mechanism, setup and calibration, reading the data, what the data mean, troubleshooting; using Global Positioning Systems; downloading data; taking water samples	3 hours
Field exercise: Set up instruments within available boat platforms, measure background water readings at various locations. Using fluorescein dye or other specified fluorescent source monitor for levels above background. Practice recording, reporting, and downloading data.	3-4 hours

3.8.3 Group Supervisor Training

Group Supervisor training may include:

- Independent training with the monitoring teams; or
- An additional structured day of training as suggested below

Topic	Duration
Review of ICS and role of monitoring group in it, roles of Monitoring Group Supervisor, what the data mean, QA/QC of data, command and control of teams, communication, and reporting the data.	1 hour
Field exercise. Practice deploying instruments in the field with emphasis on reporting, QA/QC of data, communication between teams and the Group Supervisor, and communication with the Technical Specialist.	3-6 hours
Back to the base, practice downloading the data.	30 min.
Lessons learned.	30 min.

¹ This training is designed for fluorometers. Other instruments could provide valid results, and may be suitable for SMART operations.

3.8.4 Refresher Training

Topic	Duration
Review of SMART: What is it, why do it, what is its purpose.	15 min.
Monitoring and reporting: Who, where, and when; level of concern; what the data mean; communication; and reporting the data	30-45 min.
Basic instrument operation (hands-on): how the fluorometer works and how to operate it; brief description of the mechanism, setup, calibration, reading data, and troubleshooting; using GPS.	2 hours
Downloading data	30 min.
Field exercise: Outside the classroom, set up instrument on a platform, and measure background readings. Using fluorescence or other common input sources, monitor fluorescence levels. Practice recording, reporting, and downloading data.	1-3 hours
Lessons learned	30-45 min.

3.9 Dispersant Monitoring Job Aid Checklist

This checklist is designed to assist SMART dispersant monitoring by listing some of the tasks to accomplish before, during, and after the monitoring operations.

Check <input checked="" type="checkbox"/>	Item	Do
	Preparations	
	Activate personnel	<ul style="list-style-type: none"> • Contact and mobilize the monitoring teams and Technical Specialist (SSC where applicable)
	Check equipment	<ul style="list-style-type: none"> • Check equipment (use checklists provided) • Verify that the fluorometer is operational • Include safety equipment
	Obtain deployment platforms	Coordinate with incident Operations and Planning Section regarding deployment platforms (air, sea, land)
	Amend site safety plan	Amend the general site safety plan for monitoring operations.
	Monitoring Operations	
	Coordinate plan	<ul style="list-style-type: none"> • Coordinate with the Operations Section Chief • Coordinate with Technical Specialist
	Conduct briefing	<ul style="list-style-type: none"> • Monitoring: what, where, who, how • Safety and emergency procedures
	Deploy to location	Coordinate with Operations Section.
	Setup instrumentation	<ul style="list-style-type: none"> • Unpack and set up the fluorometer per user manual • Record fluorometer response using the check standards
	Evaluate monitoring site	<ul style="list-style-type: none"> • Verify that the site is safe • Coordinate with spotter aircraft (if available)
	Conduct monitoring (See attachment 11 for details)	<ul style="list-style-type: none"> • Background, no oil present • Background, not treated with dispersants • Treated area
	Conduct data logging (see attachment 12)	<ul style="list-style-type: none"> • Date and time • Location (from GPS) • Verify that the instrument data logger is recording the data • Manually record fluorometer readings every five minutes • Record relevant observations
	Conduct water sampling (see attachment)	<ul style="list-style-type: none"> • Collect water samples post-fluorometer in certified, clean, amber bottles for lab analysis
	Conduct photo and video documentation	<ul style="list-style-type: none"> • Document relevant images (e.g., monitoring procedures, slick appearance, evidence of dispersed oil)
	Conduct quality assurance and control	<ul style="list-style-type: none"> • Instrument response acceptable? • Check standards current? • Control sampling done at oil-free and at untreated locations? • Water samples in bottles taken for lab analysis? • Date and time corrected and verified? • Any interfering factors?

	Report (by Teams)	Report to Group Supervisor: <ul style="list-style-type: none"> • General observation (e.g., dispersed oil visually apparent) • Background readings • Untreated oil readings • Treated oil readings
	Report (by Group Supervisor)	Report to Technical Specialist: <ul style="list-style-type: none"> • General observation • Background readings • Untreated oil readings • Treated oil readings
	Report by Technical Specialist (SSC)	Report to Unified Command: <ul style="list-style-type: none"> • Dispersant effectiveness • Recommendation to continue or re-evaluate use of dispersant.
	Post monitoring	
	Conduct debrief	<ul style="list-style-type: none"> • What went right, what can be done better • Problems and possible solutions • Capture comments and suggestions
	Preserve data	<ul style="list-style-type: none"> • Send water samples to the lab • Download logged data from fluorometer to computer • Collect and review Recorder data logs • Correlate water samples to fluorometer readings • Generate report
	Prepare for next spill	Clean, recharge, restock equipment

3.10 Dispersant Monitoring Performance Guidelines

SMART does not require nor endorse a specific instrument or brand for dispersant monitoring. Rather, SMART specifies performance criteria, and instruments meeting them may be used for monitoring.

- 1) Instrument package must be field rugged and portable. Instrument package must be able to operate from a vessel or small boat under a variety of field conditions, including air temperatures between 5 and 35°C, water temperatures between 5 and 30°C, seas to 5 feet, humidity up to 100%, drenching rain, and even drenching sea spray. The criteria for field deployment should be limited by the safety of the field monitoring team and not instrument package limitations.
- 2) Instrument package must be able to operate continuously in real-time or near-real time mode by analyzing seawater either in-situ (instrument package is actually deployed in the sea) or ex-situ (seawater is continuously pumped from a desired depth).
- 3) Monitoring depth must be controllable to between 1 meter and 3 meters. Discrete water sampling for post-incident laboratory validation is required at the same depths as actual instrument monitoring. Note, actual analysis of water samples collected may or may not be required by the FOSC.
- 4) Instrument must be able to detect dispersed crude oil in seawater. To allow a wide range of instruments to be considered, no specific detection method is specified. If fluorometry is used, the excitation and emission wavelengths monitored should be selected to enhance detection of crude oil rather than simply hydrocarbons, in order to reduce matrix effects (for the Turner AU-10, long wavelength kits developed for oil detection are preferred over the short wavelength kits developed by the manufacture for other applications).
- 5) Instrument must be able to provide a digital readout of measured values. Given that different oils that have undergone partial degradation due to oil weathering will not provide consistent or accurate concentration data, measured values reported as “raw” units are preferred for field operations over concentration estimations that might be misleading as to the true dispersed oil and water concentrations.
- 6) In addition to a digital readout (as defined above), the instrument must be able to digitally log field data for post-incident analysis. Data logging must be in real-time, but downloading of achieved data is not required until after the monitoring activity, i.e., downloading the raw data to a computer once the boat has returned from the field operation is acceptable.
- 7) For instrument validation prior to operational use, the instrument must have a minimum detection limit (MDL) of 1 ppm of dispersed fresh crude oil in artificial seawater and provide a linear detection to at least 100 ppm with an error of less than 30% compared to a known standard. The preferred calibration oil is Alaskan North Slope Crude or South Louisiana Crude (the oils specified by the EPA’s Dispersant Effectiveness). Similar dispersible crude oils may be used if availability is a limitation (diesel fuel is not a suitable substitute). Some method of instrument calibration or validation is required on-scene prior to any operational monitoring for Quality Assurance/Quality Control (QA/QC). In the past, the use of a fluorescent dye at a concentration that would provide an equivalent value of 18 ppm for fresh ANS Crude was used for both calibration and field validation.

3.11 Dispersant Monitoring Field Guidelines

3.11.1 Overview

Dispersant monitoring with fluorometers employs a continuous flow fluorometer at adjustable water depths. Using a portable outrigger, the sampling hose is deployed off the side of the boat and rigged so that the motion of the boat's propeller or the wake of the sampling boat does not disrupt the sampling line. The fluorometer is calibrated with a check standard immediately prior to use in accordance with the operator's manual. In addition, water samples are collected for confirmation by conventional laboratory analysis.

3.11.2 Tier II Monitoring Operations

3.11.2.1 Monitoring Procedures

Monitoring the water column for dispersant efficacy includes three parts:

1. Water sampling for background reading, away from the oil slick;
2. Sampling for naturally dispersed oil, under the oil slick but before dispersants are applied; and
3. Monitoring for dispersed oil under the slick area treated with dispersants.

3.11.2.2 Background sampling, no oil

En route to the sampling area and close to it, the sampling boat performs a monitoring run where there is no surface slick. This sampling run at 1-meter depth (or deeper depending on sea state conditions) will establish background levels before further sampling.

3.11.2.3 Background sampling, naturally dispersed oil

When reaching the sampling area, the sampling boat makes the sampling transects at 1-meter depths across the surface oil slick(s) to determine the level of natural dispersion before monitoring the chemical dispersion of the oil slick(s).

3.11.2.4 Monitoring of dispersed oil

After establishing background levels outside the treated area, the sampling boat intercepts the dispersed subsurface plume. The sampling boat may have to temporarily suspend continuous sampling after collecting baseline values in order to move fast enough to intercept the plume. The sampling boat moves across the path of the dispersed oil plume to a point where the center of the dispersed plume can be predicted based on the size of the treatment area and the locations of new coordinates. The sampling boat may have to be directed by an aerial asset to ensure correct positioning over the dispersed slick.

When conducting the monitoring, the transects consist of one or more "legs," each leg being as close as possible to a constant course and speed. The recommended speed is 1-2 knots. The monitoring team records the vessel position at the beginning and end of each leg.

The instrument data may be reviewed in real time to assess the relative enhanced dispersion of the water-soluble fraction of the oil. Figure 1 shows an example of how the continuous flow data may be presented.

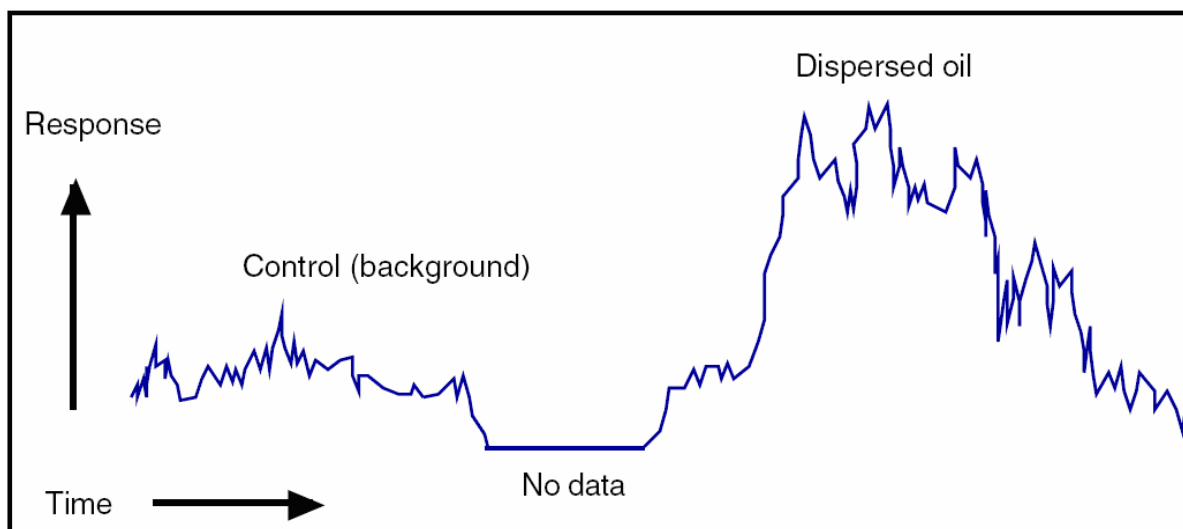


Figure 1. Example of a graphical presentation of fluorometer data.

3.11.3 Tier II Monitoring Locations: The Box Coordinates Method

The observation aircraft identifies the target slick or target zone for the sampling vessel by a four-corner box (Figure 2). Each corner of the box is a specific latitude/longitude, and the target zone is plotted on a chart or map for easy reference. The sampling vessel positions near the slick and configures the fluorometer sampling array. The pre-application sampling transect crosses the narrow width of the box. After completing the sampling transect, the sampling vessel waits at a safe distance during dispersant application. Data logging may continue during this period. Fifteen to twenty minutes after dispersants have been applied, the observation aircraft generates a second box by providing the latitude and longitude coordinates of the four corners corresponding to any observed dispersed oil plume. The post-application transect is identical to the pre-application transect. If no plume is observed, the sampling vessel samples the same transect used for pre-application.

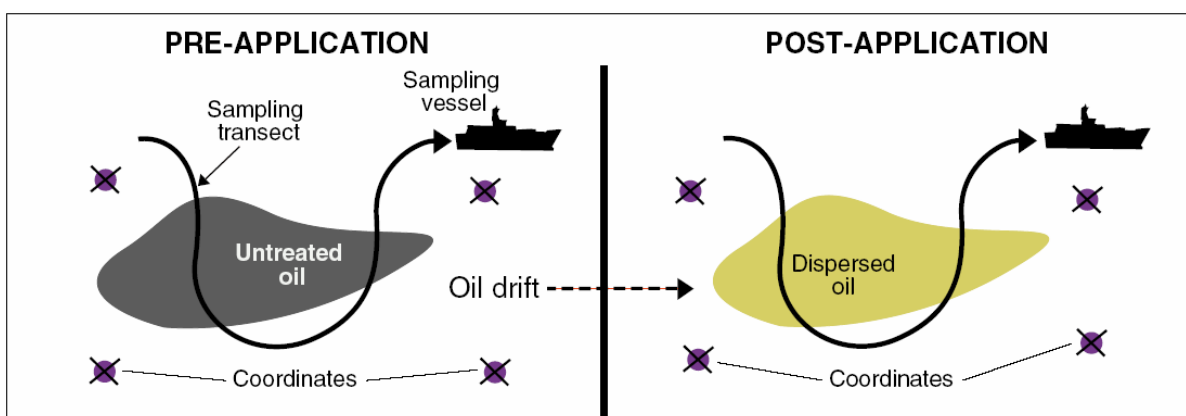


Figure 2. The box coordinates Method.

3.11.4 Tier III Monitoring Operations

If monitoring indicates that dispersant application is effective, the Unified Command may request that additional monitoring be done to collect information on the transport and dilution trends of the dispersed oil. Tier III may be conducted to address this information need. Tier III is highly flexible. Any Tier III operation will be conducted with additional scientific input from the Unified Command to determine both feasibility and help direct field activities. The Scientific Support Coordinator or

other Technical Specialists would assist the SMART Monitoring Team in achieving such alternative monitoring goals.

3.11.4.1 Multiple Depths with One Instrument

This monitoring technique provides a cross section of relative concentrations of dispersed oil at different depths. To conduct this operation, the team stops the vessel while transecting the dispersant-treated slick at a location where the fluorometry monitoring at the one-meter depth indicated elevated readings. While holding steady at this location, the team lowers the fluorometer sampling hose at several increments down to approximately ten meters (Figure 7). Monitoring is done for several minutes (2-3 minutes) for each water depth, and the readings recorded both automatically by the instrument's data logger and manually by the monitoring team, in the data logging form. This monitoring mode, like Tier II, requires one vessel and one fluorometer with a team to operate it.

3.11.4.2 Simultaneous Monitoring at Two Different Depths.

If two fluorometers and monitoring setups are available, the transect outlined for Tier II may be expanded to provide fluorometry data for two different water depths (one and five meters are commonly used). Two sampling set-ups (outriggers, hoses, etc.) and two separate fluorometers (same model) are used, all on a single vessel, with enough monitoring personnel to operate both instruments. The team transects the dispersant-treated slick as outlined in Tier II, but simultaneously collect data for two water depths (Figure 7).

While the data logger in each instrument is automatically recording the data separately, the monitoring teams manually record the data from both instruments at the same time. Comparison of the readings at the two water depths may provide information on the dilution trend of the dispersed oil.

If requested by the Unified Command, water chemical and physical parameters may be collected by using a portable water quality lab in-line with the fluorometer to measure water temperature, conductivity, dissolved oxygen content, pH, and turbidity. These data can help explain the behavior of the dispersed oil.

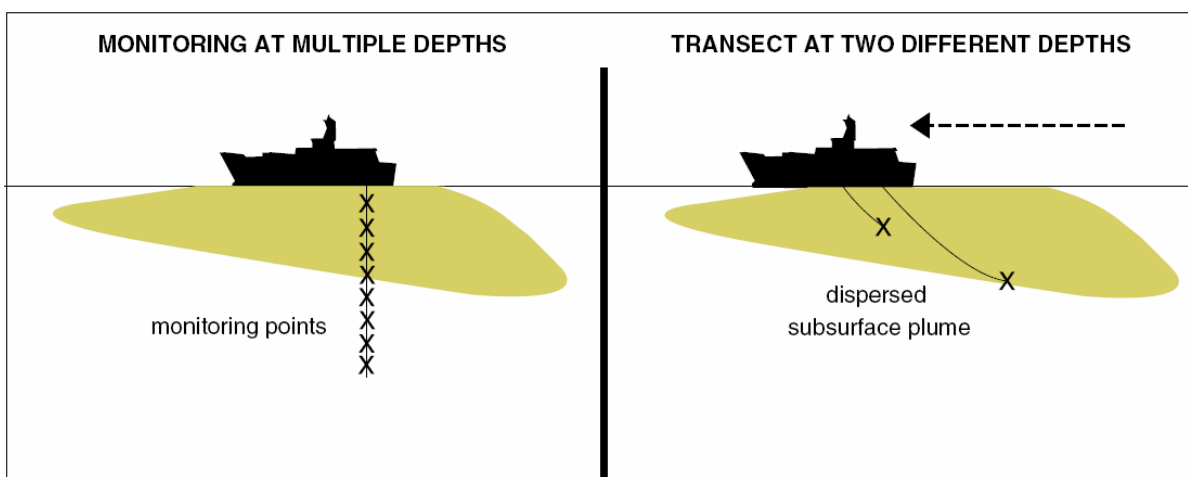


Figure 3: Monitoring options for Tier III.

3.12 Dispersant Monitoring Water Sampling

3.12.1. Purpose

Collection of water samples during Tier II and III monitoring should assist in correlating instrument readings in the field to actual dispersed oil concentrations in the water column. The samples provide validation of the field monitoring. The following guidelines were drafted for flow-through fluorometers. The procedures must be modified for alternative instruments. Such modifications might include discrete water sampling in concert with monitoring. The guidelines provided below are general, and should serve as an initial starting point for water sample collection. The number of samples collected may vary, depending on the operation and the need for verification.

3.12.2. Guidelines

3.12.2.1 Equipment

1. Certified pre-cleaned amber 500-ml bottles with Teflon™-lined caps.
 - For Tier II, a minimum of six bottles is required.
 - For Tier III, a minimum of thirteen bottles is required.
2. Labels for bottles documenting time and location of collection.
3. Observation notes corresponding fluorometer readings to water sample collection, and any other observations.

3.12.2.2 Procedure

1. Open valve for water sample collection and allow water to run for ten seconds before opening and filling the bottle.
2. Fill the bottle to the top and allow no headspace in bottles after sealing.
3. Label bottle with exact time of initial filling from the fluorometer clock as well as sampling depth, transect, and the distance of water hose from the outflow port of the fluorometer to the actual collection point of the water sample (to account for residence time of water in the hose)
4. Store filled bottles in a cooler with ice while on the monitoring vessel. Keep refrigerated (do not freeze) after returning to shore and send to the laboratory as soon as possible.
5. Measure and record the length of the hose between the fluorometer outlet and the bottle end, hose diameter, and flow rate (by filling a bucket). This will assist in accurately linking water sample results to fluorometer readings.

3.12.2.3 Number of Samples

1. Collect one water sample per monitoring depth during the background (no oil) transect. The fluorometer readings prior to collection should be relatively constant.
2. Collect two samples per monitoring depth during the pre-dispersant monitoring (under untreated oil slick). Try to collect water samples correlating with representative fluorometer values obtained.
3. Collect approximately three samples per monitoring depth during the post-dispersant transects. These samples should represent the range of high, middle, and low values obtained from the fluorometer screen.

4. Label the bottles and store them in a cooler with ice. Do not freeze. Enter water sample number, time, and correlated fluorometer reading in the Recorder Log for future data processing

3.13 Dispersant Monitoring Recorder Form

Date: _____ Fluorometer #: _____
 Project: _____ Platform: _____
 Monitoring Start/End Time: _____
 Team members: _____
 On-scene weather (log all possible entries) Wind direction from: _____ Wind speed: _____
 Sea state: _____ Cloud cover: _____ Visibility: _____
 Air temp. : _____ Sea temp.: _____

Comments should include: Presence or lack of surface oil or dispersed oil plume, whether conducting background run, transect in relation to slick, instrument or gear problem, or any other noteworthy event. Positions should always be recorded when a sample is taken. Otherwise, a log entry every five minutes is sufficient.

Time	Water depth	Fluorometer reading	GPS reading	Sample taken?	Comments & observations
			lat: _____ long: _____		
			lat: _____ long: _____		
			lat: _____ long: _____		
			lat: _____ long: _____		
			lat: _____ long: _____		
			lat: _____ long: _____		
			lat: _____ long: _____		
			lat: _____ long: _____		
			lat: _____ long: _____		
			lat: _____ long: _____		
			lat: _____ long: _____		
			lat: _____ long: _____		
			lat: _____ long: _____		
			lat: _____ long: _____		
			lat: _____ long: _____		

MONITORING IN-SITU BURNING OPERATIONS

1. BACKGROUND

1.1 Mission Statement

To provide a monitoring protocol for rapid collection of real-time, scientifically based information to assist the Unified Command with decision-making during in situ burning operations.

1.2 Overview of In situ Burning

In situ burning of oil may offer a logistically simple, rapid, and relatively safe means for reducing the net environmental impact of an oil spill. Because a large portion of the oil is converted to gaseous combustion products, in situ burning can substantially reduce the need for collection, storage, transport, and disposal of recovered material. In situ burning, however, has several disadvantages: burning can take place only when the oil is not significantly emulsified, when wind and sea conditions are calm, and when dedicated equipment is available. In addition, in situ burning emits a plume of black smoke, composed primarily (80-85%) of carbon dioxide and water; the remainder of the plume is gases and particulates, mostly black carbon particulates, known as soot. These soot particulates give the smoke its dark color. Downwind of the fire, the gases dissipate to acceptable levels relatively quickly. The main public health concern is the particulates in the smoke plume.

With the acceptance of in situ burning as a spill response option, concerns have been raised regarding the possible effects of the particulates in the smoke plume on the general public downwind. SMART is designed to address these concerns and better aid the Unified Command in decisions related to initiating, continuing, or terminating in situ burning.

2. MONITORING PROCEDURES

2.1 General Considerations

In general, SMART is conducted when there is a concern that the general public may be exposed to smoke from the burning oil. It follows that monitoring should be conducted when the predicted trajectory of the smoke plume indicates that the smoke may reach population centers, and the concentrations of smoke particulates at ground level may exceed safe levels. Monitoring is not required, however, when impacts are not anticipated.

Execution of in situ burning has a narrow window of opportunity. It is imperative that the monitoring teams are alerted of possible in situ burning and SMART operations as soon as burning is being considered, even if implementation is not certain. This increases the likelihood of timely and orderly SMART operations.

2.2 Sampling and Reporting

Monitoring operations deploy one or more monitoring teams. SMART recommends at least three monitoring teams for large-scale burning operations. Each team uses a real-time particulate monitor capable of detecting the small particulates emitted by the burn (ten microns in diameter or smaller), a global positioning system, and other equipment required for collecting and documenting the data. Each monitoring instrument provides an instantaneous particulate concentration as well as the time-weighted average over the duration of the data collection. The readings are displayed on the instrument's screen and stored in its data logger. In addition, particulate concentrations are logged manually every few minutes by the monitoring team in the recorder data log.

The monitoring teams are deployed at designated areas of concern to determine ambient concentrations of particulates before the burn starts. During the burn, sampling continues and readings are recorded both in the data logger of the instrument and manually in the recorder data log. After the burn has ended and the smoke plume has dissipated, the teams remain in place for some time (15-30 minutes) and again sample for and record ambient particulate concentrations.

During the course of the sampling, it is expected that the instantaneous readings will vary widely. However, the calculated time-weighted average readings are less variable, since they represent the average of the readings collected over the sampling duration, and hence are a better indicator of particulate concentration trend. When the time-weighted average readings approach or exceed the Level of Concern (LOC), the team leader conveys this information to the In-Situ Burn Monitoring Group Supervisor (ISB-MGS) who passes it on to the Technical Specialist in the Planning Section (Scientific Support Coordinator, where applicable), which reviews and interprets the data and passes them, with appropriate recommendations, to the Unified Command.

2.3 Monitoring Locations

Monitoring locations are dictated by the potential for smoke exposure to human and environmentally sensitive areas. Taking into account the prevailing winds and atmospheric conditions, the location and magnitude of the burn, modeling output (if available), the location of population centers, and input from state and local health officials, the monitoring teams are deployed where the potential exposure to the smoke may be most substantial (sensitive locations). Precise monitoring locations should be flexible and determined on a case-by-case basis. In general, one team is deployed at the upwind edge of a sensitive location. A second team is deployed at the downwind end of this location. Both teams remain at their designated locations, moving only to improve sampling capabilities. A third team is more mobile and is deployed at the discretion of the ISB-MGS.

It should be emphasized that, while visual monitoring is conducted continuously as long as the burn takes place, air sampling using SMART is not needed if there is no potential for human exposure to the smoke.

2.4 Level of Concern

The Level of Concern for SMART operations follows the National Response Team (NRT) guidelines. As of March 1999, the NRT recommends a conservative upper limit of 150 micrograms of PM-10 per cubic meter of air, averaged over one hour. Furthermore, the NRT emphasizes that this LOC does not constitute a fine line between safe and unsafe conditions, but should instead be used as an action level: If it is exceeded substantially, human exposure to particulates may be elevated to a degree that justifies precautionary actions. However, if particulate levels remain generally below the recommended limit with few or no transitory excursions above it, there is no reason to believe that the population is being exposed to particulate concentrations above the EPA's National Ambient Air Quality Standard (NAAQS).

It is important to keep in mind that real-time particulate monitoring is one factor among several, including smoke modeling and trajectory analysis, visual observations, and behavior of the smoke plume. The Unified Command must determine early on in the response what conditions, in addition to the LOC, justify termination of a burn or other action to protect public health. The Unified Command should work closely with local Public Health organizations in determining burn termination thresholds.

When addressing particulate monitoring for in situ burning, the NRT emphasizes that concentration trend, rather than individual readings, should be used to decide whether to continue or terminate the burn. For SMART operations, the time-weighted average (TWA) generated by the particulate monitors should be used to ascertain the trend. The NRT recommends that burning not take place if

the air quality in the region already exceeds the NAAQS and if burning the oil will add to the particulate exposure concentration. SMART can be used to take background readings to indicate whether the region is within the NAAQS, before the burn operation takes place. The monitoring teams should report ambient readings to the Unified Command, especially if these readings approach or exceed the NAAQS.

2.5 SMART as Part of the ICS Organization

SMART activities are directed by the Operations Section Chief in the Incident Command System (ICS). It is recommended that a "group" be formed in the Operations Section that directs the monitoring effort. The head of this group is the Monitoring Group Supervisor. Under each group there are monitoring teams. At a minimum, each monitoring team consists of two trained members: a monitor and assistant monitor. An additional team member could be used to assist with sampling and recording. The monitor serves as the team leader. The teams report to the Monitoring Group Supervisor who directs and coordinates team operations, under the control of the Operations Section Chief.

2.6 Information Flow and Data Handling

Communication of monitoring results should flow from the field (Monitoring Group Supervisor) to those persons in the Unified Command who can interpret the results and use the data. Typically, this falls under the responsibility of a Technical Specialist on in-situ burning in the Planning Section of the command structure.

The observation and monitoring data will flow from the Monitoring Teams to the Monitoring Group Supervisor. The Group Supervisor forwards the data to the Technical Specialist. The Technical Specialist or his/her representative reviews the data and, most importantly, formulates recommendations based on the data. The Technical Specialist communicates these recommendations to the Unified Command.

Quality assurance and control should be applied to the data at all levels. The Technical Specialist is the custodian of the data during the operation, but ultimately the data belongs to the Unified Command. The Unified Command should ensure that the data are properly archived, presentable, and accessible for the benefit of future monitoring operations.

3. ATTACHMENTS

The following attachments are designed to assist response personnel in implementing the SMART protocol. A short description of each attachment is provided below.

Number	Title	Description
3.1	Roles and Responsibilities	Provides detailed roles and responsibilities for responders filling monitoring positions
3.2	Command, Control, and Data Flow	A suggested ICS structure for controlling monitoring units and transferring monitoring results
3.3	ISB Monitoring Training Outline	General training guidelines for ISB monitoring
3.4	ISB Monitoring Job Aid Checklist	A checklist to assist in assembling and deploying SMART ISB monitoring teams
3.5	ISB Monitoring Equipment List	A list of equipment needed to perform SMART operations
3.6	ISB Monitoring Instrumentation Requirements	Abbreviated performance requirements for particulate monitors
3.7	ISB Monitoring Recorder Sheet	A template for manual recording of burn data
3.8	ISB Monitoring Possible Locations	An example of monitoring locations for offshore ISB operations
3.9	ISB Monitoring Data Sample: Graph	An example of real ISB data

3.1 Roles and Responsibilities

3.1.1 Team Leader

The Team Leader

- Selects specific team location
- Conducts monitoring
- Ensures health and safety of team
- Ensures monitoring QA/QC
- Establishes communication with the group supervisor
- Conveys to him/her monitoring data as needed

3.1.2 Monitoring Group Supervisor

The Group Supervisor

- Oversees the deployment of the teams in the group
- Ensures safe operation of the teams
- Ensures QA/QC of monitoring and data
- Establishes communication with the field teams and the command post
- Conveys to the command post particulate level trends as needed
- Addresses monitoring technical and operational problems, if encountered

3.1.3 In-Situ Burn Technical Specialist

The Technical Specialist or his/her representative

- Establishes communication with the Monitoring Group Supervisor
- Receives the data from the Group Supervisor
- Ensures QA/QC of the data
- Analyzes the data in the context of other available information and incident-specific conditions, formulates recommendations to the Unified Command
- Forwards the recommendations to the Unified Command
- Makes the recommendations and data available to other entities in the ICS, as needed
- Archives the data for later use

Role and function	Training	Number
<u>Monitoring Team Leader</u> Leads the monitoring team	SMART Monitor Training	3
<u>Monitor Assistant</u> Assists with data collection.	SMART Monitor Training	3
<u>Group Supervisor</u> Coordinates and directs teams; field QA/QC of data; links with UC.	SMART Monitor training. Group Supervisor training	1 per group
<u>Technical Specialist</u> Overall QA/QC of data; reads and interprets data; provides recommendations to the Unified Command	SMART Monitor training. Scientific aspects of ISB	1 per response

3.2 Command, Control, and Data Flow

In general, in situ burn monitoring operations take place as an integral part of the Incident Command System (Figures 1 and 2).

ISB monitoring operations are directed by the Operations Section Chief or deputy. The Operations Section Chief provides the Monitoring Group Supervisor with tactical directions and support regarding deployment, resources, communications, and general mission as adapted to the specific incident. The Operations Section consults with the ISB monitoring Technical Specialist about the specifics of the monitoring operations, especially if they affect the data collected. The Monitoring Group Supervisor provides specific direction to the monitoring teams during field deployment and operations.

The observation and monitoring data flow from the Monitoring Teams to the Monitoring Group Supervisor. After initial QA/QC the Group Supervisor passes the data to the Technical Specialist. The Technical Specialist or his/her representative reviews the data, applies QA/QC if needed, and, most importantly, formulates recommendations based on the data. The Technical Specialist forwards these recommendations to the Unified Command.

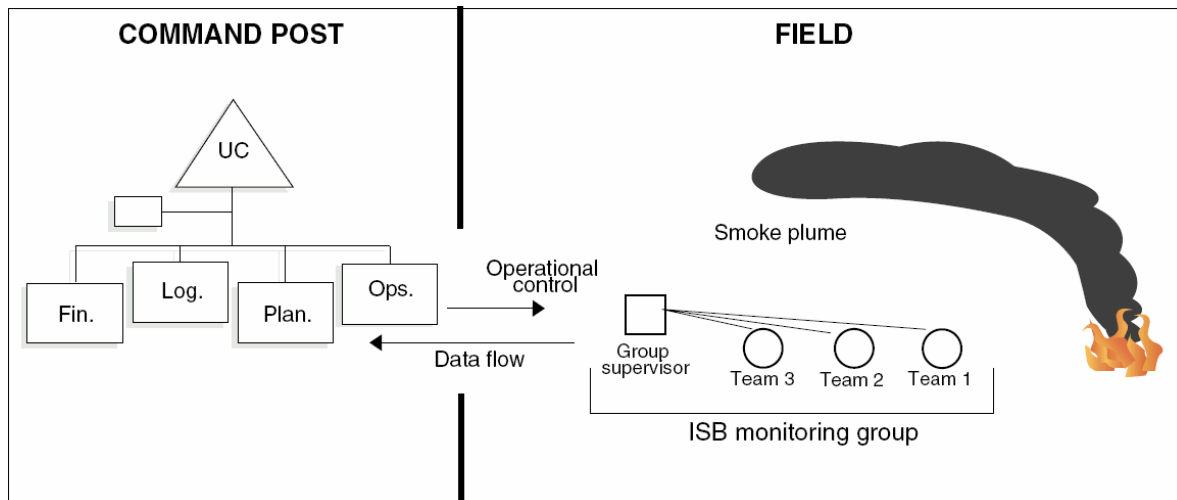


Figure 1. Command, control, and data flow during in-situ burning monitoring operations.

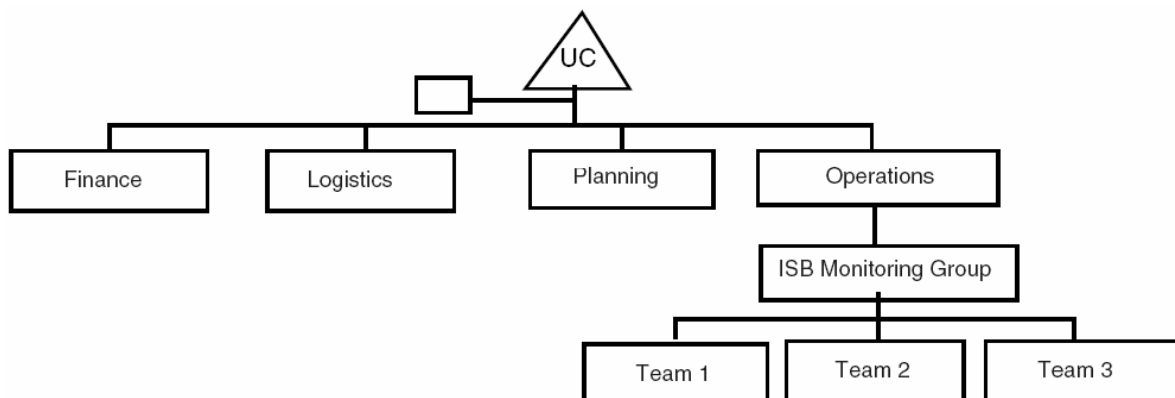


Figure 2. ISB Monitoring Group in the ICS organization.

3.3 ISB Monitoring Training Outline

3.3.1 General

Training for in-situ burning monitoring operations consists of an initial Monitor Level Training for all, Group Supervisor Training for supervisors, and refresher training sessions every six months for all.

3.3.2 Monitor Level Training

The Monitor Level Training includes monitoring concepts, instrument operation, work procedures, and a field exercise.

Topic	Duration
<ul style="list-style-type: none"> • Brief review of in-situ burning. • Review of SMART: What is it, why do it, what is it good for. 	1 hour
<ul style="list-style-type: none"> • Monitoring strategy: Who, where, when. • Open water, inland. • Reporting: What and to whom • LOC: What is the LOC, how to report it. • Instantaneous reading vs. TWA, use of recorder data sheet 	1 hour
<ul style="list-style-type: none"> • Basic instrument operation (hands-on): How the particulate monitoring instrument works, and how to operate it: brief description of mechanism, setup, and calibration, reading the data, what do the data mean; trouble shooting. • Using GPS • Downloading data 	2 hours
Field exercise: Set up the instruments outdoors and measure background readings. Using a smoke source monitor for particulate levels, practice recording the data and reporting it. When done, practice downloading the data.	4 hours

3.3.3 Group Supervisor Training

Group Supervisor training may include two options:

- Independent training at each unit; or
- An additional structured day of training as suggested below

Topic	Duration
<ul style="list-style-type: none"> • Review of ICS and the role of the Monitoring Group in it • Roles of Monitoring Group Supervisor • What the data mean • QA/QC of data • Command and control of teams • Communication with the Technical Specialist 	1 hour
Field exercise: Practice deploying instruments in the field with emphasis on reporting, QA/QC of data, communication between teams and the group supervisor, and group supervisor to the Technical Specialist.	3-6 hours
Back to the base, practice downloading the data	30 min.
Lessons learned	30 min.

3.3.4 Refresher Training

Topic	Duration
Review of SMART: What is it, why do it, what is it good for.	15 min.
<ul style="list-style-type: none">• Monitoring and reporting: Who, where, and when• Level of concern• What do the data mean• Reporting the data• Work with the Technical Specialist (SSC).	30-45 min.
<ul style="list-style-type: none">• Basic instrument operation (hands-on): How the monitoring instrument works, how to operate it; brief description of mechanism, setup, and calibration;• Reading the data, trouble-shooting.• Using GPS.	2 hours
Downloading data	30 min.
<ul style="list-style-type: none">• Field exercise: Outside the classroom, set up the instrument and measure background readings. Using a smoke source, monitor particulate levels.• Practice recording the data and reporting it.• Back to the base, download data.	1-2 hours

3.4 ISB Monitoring Job Aid Checklist

This checklist is designed to assist SMART in situ burning monitoring by listing some of the tasks to accomplish before, during, and after the monitoring operations.

Check <input checked="" type="checkbox"/>	Item	Do
	Preparations	
	Activate personnel	Notify monitoring personnel and the Technical Specialist (SSC where applicable)
	Conduct equipment check	<ul style="list-style-type: none"> • Check equipment using equipment checkup list. • Verify that the monitoring instruments are operational and fully charged • Include safety equipment
	Coordinate logistics	Coordinate logistics (e.g., deployment platform) with ICS Operations
	Amend Site Safety Plan	Amend site safety plan to include monitoring operations
	Monitoring Operations	
	Monitoring Group setup	<ul style="list-style-type: none"> • Coordinate with Operations Section Chief • Coordinate with Technical Specialist
	Conduct Briefing	<ul style="list-style-type: none"> • Monitoring: what, where, who, how • Safety and emergency procedures
	Deploy to location	Coordinate with Operations Section Chief
	Select site	<ul style="list-style-type: none"> • Safe • Consistent with monitoring plan • As little interference as possible • Communication with Group Supervisor and UC possible
	Set up instrumentation	Unpack monitoring instruments and set up, verify calibration, if applicable
	Mark position	<ul style="list-style-type: none"> • Use GPS to mark position in recorder sheet • Re-enter position if changing location
	Collect background data	Start monitoring. If possible, record background data before the burn begins
	Collect burn data	<ul style="list-style-type: none"> • Continue monitoring as long as burn is on • Monitor for background readings for 15-30 minutes after the smoke clears
	Record data	Enter: <ul style="list-style-type: none"> • Instantaneous and TWA readings every 3-5 minutes, or other fixed intervals • Initial position from GPS, new position if moving • Initial wind speed and direction, air temperature, relative humidity, re-enter if conditions change
	Conduct quality assurance and control	<ul style="list-style-type: none"> • Verify that instrument is logging the data • Record data, location, relative humidity, temp, wind, interferences in the recorder data sheet • Note and record interference from other sources of particulates such as industry, vehicles, vessels

	Report by team	Report to Group Supervisor: <ul style="list-style-type: none"> • Initial background readings • TWA readings (every 15 min.) • TWA readings when exceeding 150 $\mu\text{g}/\text{m}^3$, (every 5 min.) • Interferences • Safety problems • QA/QC and monitoring problems
	Report by Group Supervisor	Report to the Technical Specialist (SSC): <ul style="list-style-type: none"> • Initial background readings • TWA, when exceeding 150 $\mu\text{g}/\text{m}^3$ • Data QA/QC and monitoring problems
	Report by Technical Specialist (SSC)	Report to the Unified Command: <ul style="list-style-type: none"> • TWA consistently exceeding 150 $\mu\text{g}/\text{m}^3$ • Recommend go/no-go
	Post Monitoring	
	Debrief and lessons learned	<ul style="list-style-type: none"> • What went right, what went wrong • Problems and possible solutions • Capture comments and suggestions
	Preserve data	<ul style="list-style-type: none"> • Download logged data from monitoring instrument to a computer • Collect and review Recorder data logs • Generate report
	Prepare for next burn	Clean, recharge, restock equipment

3.5 ISB Monitoring Equipment List

(For each team, unless otherwise noted)

Check <input type="checkbox"/>	Item	Qty	Remarks
	Particulate monitoring instrument, accessories and manuals	1 or more	
	Computer and cables	1/group	Should include downloading software
	Printer	1/group	
	Recorder data sheets	10	
	Write-in-the-rain notebooks, pens	3	
	Job aid check list	1	
	GPS	1	
	Extra batteries for GPS	1 set	
	Radio	1	
	Cell phone	1	
	Binoculars	1	
	Stop watch	1	
	Camera	1	digital camera or camcorder optional
	Film	3	
	Thermometer	1	
	Humidity meter	1	
	Anemometer	1	

3.6 Particulate Monitor Performance Requirements

SMART does not require nor endorse a specific brand of particulate monitoring instrument. Rather, SMART specifies performance criteria, and instruments meeting them may be used for ISB monitoring.

Performance Criteria

- Rugged and portable: The monitor should be suitable for field work, withstand shock, and be easily transportable in a vehicle, small boat or helicopter. Maximum size of the packaged instrument should not exceed that of a carry-on piece of luggage
- Operating temperature: 15-120 °F
- Suitability: The instrument should be suitable for the media measured, i.e., smoke particulates
- Operating duration: Eight hours or more
- Readout: The instrument should provide real-time, continuous readings, as well as time-weighted average readings in $\mu\text{g}/\text{m}^3$
- Data logging: The instrument should provide data logging for 8 hours or more
- Reliability: The instrument should be based on tried-and-true technology and operate as specified
- Sensitivity: A minimum sensitivity of $1 \mu\text{g}/\text{m}^3$
- Concentration range: At least $1\text{-}40000 \mu\text{g}/\text{m}^3$
- Data download: The instrument should be compatible with readily available computer technology, and provide software for downloading data

3.7 ISB Monitoring Possible Locations

Monitoring locations are dictated by the potential for smoke exposure to human populations. In general, the monitoring teams deploy where the potential for human exposure to smoke is most probable. Precise monitoring locations should be flexible and determined on a case-by-case basis. In the figure below, one team is deployed at the upwind edge of a sensitive location (e.g., a town). A second team deploys at the downwind end of this location. Both teams stay at the sensitive location, moving only to improve sampling capabilities. A third team is more mobile, and deploys at the discretion of the Group Supervisor.

It should be emphasized that, while visual observation is conducted continuously as long as the burn takes place, air sampling using SMART is not required if there is no potential for human exposure to the smoke.

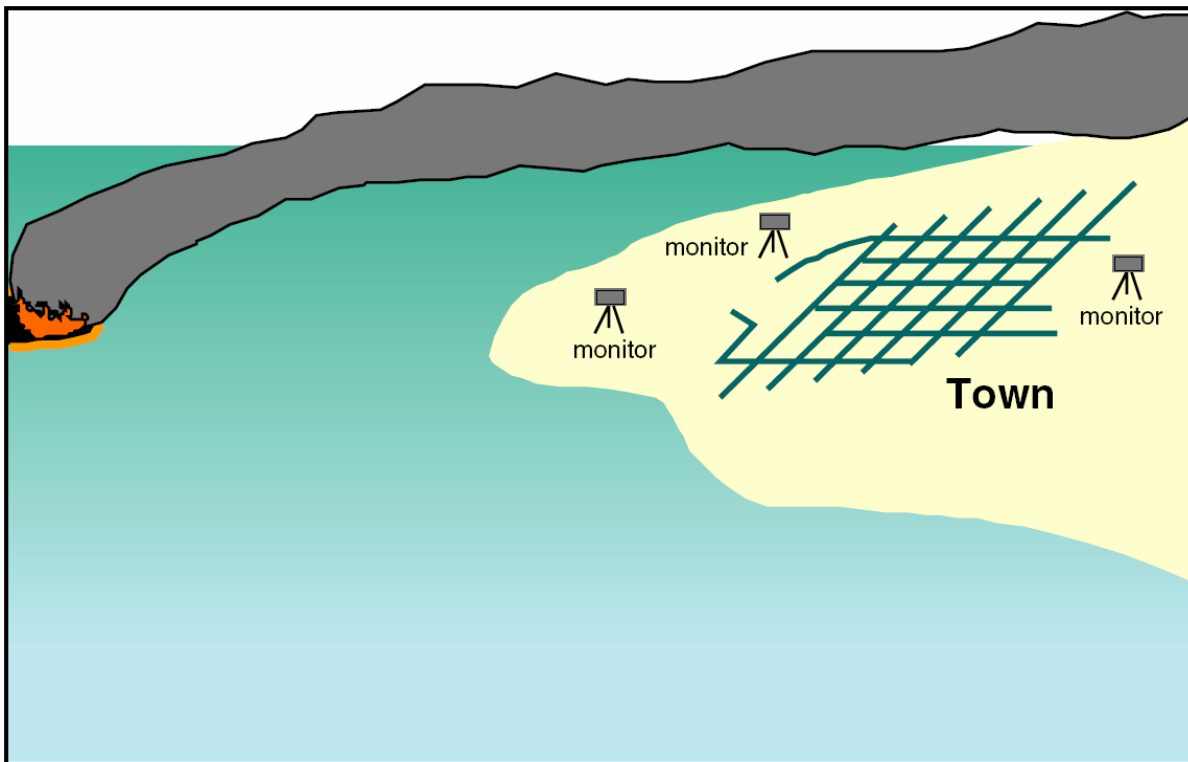


Figure 1. Possible locations of monitors (not to scale).

3.8 ISB Monitoring Recorder Sheet

Date: _____

General Location: _____

General information	Weather information
Recorder name	Temperature
Operator name	Wind direction
Vehicle/vessel #	Wind speed
Monitoring Instrument #	Relative humidity
Burn #	Cloud cover
Calibration factors:	

Comments should include: location of the smoke plume relative to the instrument, interfering particulate sources, any malfunction of the instrument

Time	GPS reading	Particulates concentration	Comments & observations
	lat: _____ long: _____	Inst: _____ TWA: _____	
	lat: _____ long: _____	Inst: _____ TWA: _____	
	lat: _____ long: _____	Inst: _____ TWA: _____	
	lat: _____ long: _____	Inst: _____ TWA: _____	
	lat: _____ long: _____	Inst: _____ TWA: _____	
	lat: _____ long: _____	Inst: _____ TWA: _____	
	lat: _____ long: _____	Inst: _____ TWA: _____	
	lat: _____ long: _____	Inst: _____ TWA: _____	
	lat: _____ long: _____	Inst: _____ TWA: _____	
	lat: _____ long: _____	Inst: _____ TWA: _____	
	lat: _____ long: _____	Inst: _____ TWA: _____	
	lat: _____ long: _____	Inst: _____ TWA: _____	
	lat: _____ long: _____	Inst: _____ TWA: _____	
	lat: _____ long: _____	Inst: _____ TWA: _____	
	lat: _____ long: _____	Inst: _____ TWA: _____	

3.9 ISB Monitoring Data Sample: Graph

The graph below represents field monitoring data from a test burn smoke plume near Mobile, Alabama, on September 25, 1997, after the data were downloaded from the instrument. The graph (Figure 1) portrays the differences between the transient instantaneous readings (Conc.) and the time weighted average readings (TWA). Note that while instantaneous readings varied widely, the TWA remained relatively constant throughout the burn. The TWA provides an indication of the concentration trends, which is a more stable and reliable indicator of exposure to particulates.

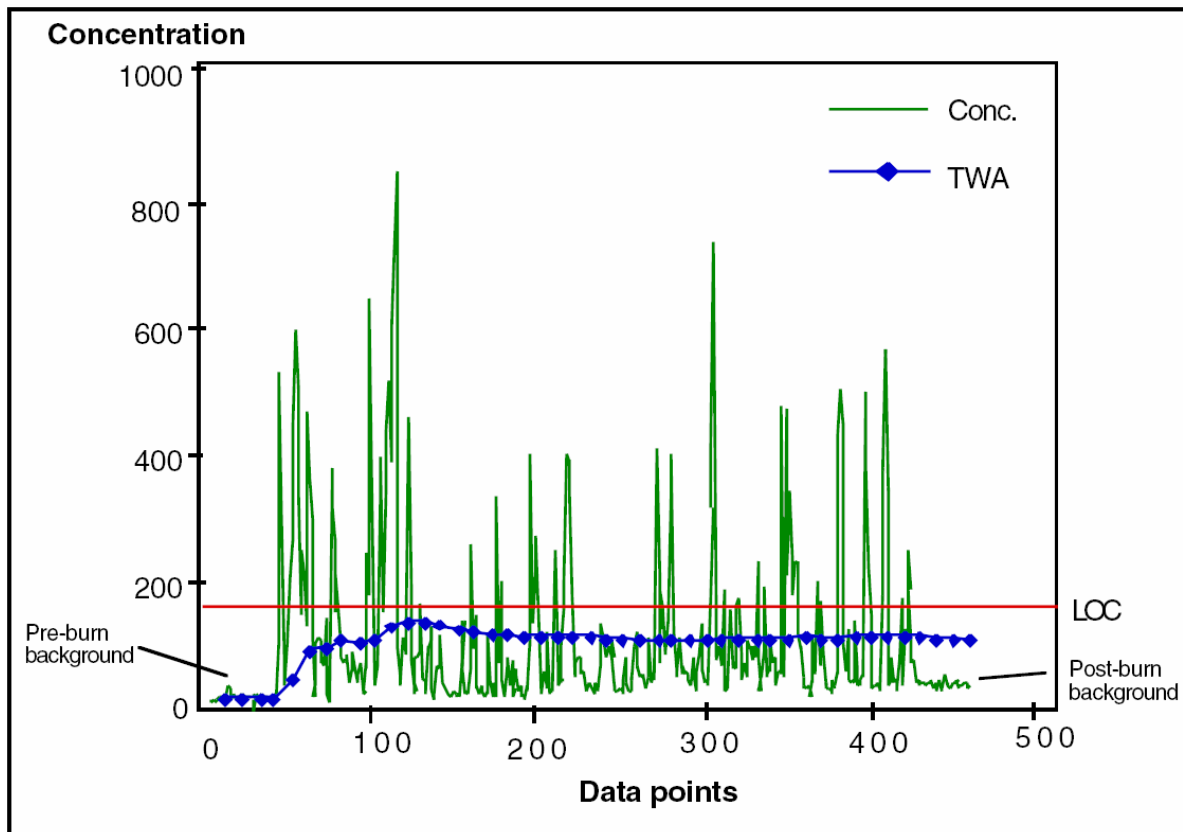


Figure 1. Graph of instantaneous and TWA particulate concentrations

SMART RESOURCES

Comments and suggestions on the SMART program and document

Fax: (206) 526-6329; Email: smart.mail@noaa.gov

SMART Web Sites

<http://response.restoration.noaa.gov/smart>

In-situ Burning Page

<http://response.restoration.noaa.gov/ISB>

Dispersant Guided Tour

<http://response.restoration.noaa.gov/dispersantstour>

Dispersant Application Observer Job Aid

http://response.restoration.noaa.gov/dispersants_jobaid

US Coast Guard

<http://www.uscg.mil/>

USCG National Strike Force

<http://www.uscg.mil/hq/nsfweb>

NOAA OR&R

<http://response.restoration.noaa.gov>

EPA ERT

<http://www.ert.org>

CDC

<http://www.cdc.gov/>

MMS Oil Spill Response Research Program

<http://www.mms.gov/taroilspills/>

OHMSETT Facility

<http://www.ohmsett.com/>

Southeast Louisiana Area Contingency Plan

Chapter 9000
Appendix J
Places of Refuge

Southeast Louisiana Area Contingency Plan

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Places of Refuge Policy

Introduction

A ship in need of assistance may require a temporary place of refuge with adequate water depth for lightering or repairs in order to protect the marine environment. Ships may need to be brought into a harbor, anchored, or moored in protected waters, or temporarily beached in order to safely make repairs and stop the loss of oil or other hazardous substances. Disabled ships need to be repaired in order to resume safe navigation and prevent a shipwreck resulting in the loss of fuel and/or cargo. If leaking ships are not repaired, spilled oil and hazardous substances may affect the public health, environmental resources, and shorelines.

There is no single place of refuge for all ships and all situations. Decisions relating to Places of Refuge encompass a wide range of security, environmental, social, economic, and operational issues that vary according to each situation, including the environmental sensitivity and protected status of the areas within or adjacent to a potential place of refuge. The initial decision to permit a ship to seek a place of refuge, as well as the decisions and actions implementing that decision, are inherently based upon an assessment of the risk factors involved and the exercise of sound judgment and discretion.

Places of Refuge are sites that could potentially be used for a disabled or damaged ship needing shelter for repairs. While information on potential sites may be pre-inventoried, this does not imply that any of these sites will be the location of choice in a future event. Selection of a place of refuge by the US Coast Guard Captain of the Port in consultation with other Federal agencies, State, Tribal, and Local governments, and other stakeholders will always be made on a case by case basis. If time allows the Captain of the Port will activate a Unified Command under the Incident Command System (ICS) to address a request for a place of refuge.

When a Place of Refuge incident occurs that is likely to involve more than one Area Contingency Plan, existing cross-jurisdictional protocols will be activate.

This section incorporates a decision-making process for Masters to use when requesting a place of refuge. The guidelines in this section incorporate the Guidelines on Places of Refuge for Ships in need of Assistance adopted by the International Maritime Organization (IMO), and assume use of ICS to manage the incident.

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When safety of life is involved, existing search and rescue conventions and protocols should be used. When a ship is in need of assistance but safety of life is not involved, these guidelines should be followed to evaluate whether a ship should remain in the same position, continue on its voyage, be brought into a place of refuge, taken out to sea, or intentionally scuttled in deep water.

Purpose

- To provide a decision making process for response to requests for Places of Refuge; and
- To apply existing procedures for coordinated trans-boundary and trans-jurisdictional decision-making when necessary in responding to a request for a place of refuge.

Definitions

Ship in need of assistance means a ship in a situation, apart from one requiring rescue of persons on board, which could lead to loss of the vessel or an environmental or navigational hazard.

A *ship* is defined as any vessel (self propelled or non self propelled) that can be used for the commercial carriage of cargo or passengers, as well as non-commercial applications, including but not limited to freight ships, tank ships, deck barges, tank barges, and large yachts.

Place of refuge means a place where a ship in need of assistance can take action to stabilize its condition, reduce the hazards to navigation, and to protect human life and the environment. Places of Refuge can be man-made harbors, port, natural embayments, or offshore waters.

MAS means a Maritime Assistance Service, as defined in the International Maritime Organization's resolution. PLEASE NOTE: In the US and Canada, the United State Coast Guard and the Canadian Coast Guard respectively are the agencies responsible for receiving reports and serving as the point of contact for the shipmaster while notifying reports and serving as the point of contact for the shipmaster while notifying other agencies in the event of an incident.

Guidelines mean each of the decision-making guidelines and matter set forth above and below. Notwithstanding any such word as "may," "should," "will,"

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”must,” or “shall,” these guidelines are intended solely as factors that may be considered during the execution and implementation of any such decisions.

Force Majeure is a doctrine of international law which confers limited legal immunity upon vessels which are forced to seek refuge or repairs within the jurisdiction of another nation due to uncontrollable external forces or conditions. This limited immunity prohibits coastal state enforcement of its laws which were breached due to the vessel’s entry under force majeure.

Jurisdiction

Under 33 CFR Part 6.04, the U.S. Coast Guard Captain of the Port (COTP) has authority to order ships into and out of ports, harbors, and embayments in order to protect the public, the environment and maritime commerce. The COTP is the designated Federal On-Scene Coordinator (FOSCR) for the U.S. coastal zone. Per the National Contingency Plan (NCP), 40 CFR part 300. There may be some maritime homeland security situation where the COTP, acting as the Federal Maritime Security Coordinator, may have access to Sensitive Security Information (SSI) and/or classified information- not readily shareable with other stakeholders- that may impact the final disposition of a vessel requesting “Force Majeure” or permitting a vessel to seek a place of refuge or approval of a salvage plan. These circumstances are dealt with on a case by case basis and information shared with other agencies is on a “need to know” basis.

The State of Louisiana has the authority to represent and protect State interests for incidents within State waters. The State has jurisdiction over state-owned shoreline and in near-shore waters out to three miles.

Local governments or port authorities may have authority over near-shore waters including ports and harbors. If so, a local government or port representative may serve as a Local On-Scene Coordinator per the Southeast Louisiana ACP.

Natural Resource agencies have authority to manage their lands, marine areas, wildlife, habitat, and natural resources as mandated in their laws and regulations. Natural Resource agencies fill position in ICS and provide resource information to the UC. In addition, Natural Resource agencies are member of the Region VI Regional Response Team (RRT).

Tribal governments may own land and have fishing rights in marine areas that could be impacted by a ship seeking a place of refuge. If so, a tribal government representative(s) may fill position in ICD or may serve as a Local On-Scene Coordinator per the Southeast Louisiana ACP.

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The Master of the ship has control of the ship and is responsible for requesting a place of refuge from the COTP. The Master provides details on the status of the ship and justification for needing a place of refuge in accordance with the IMO Guidelines on Places of Refuge.

Management Structure to Address Places of Refuge

If time allows, the COTP should consult with appropriate federal, state, and local stakeholders via the RRT or other appropriate mechanism to address a request for a place of refuge. A Unified Command (UC) may be activated as required. The UC should provide an opportunity for consultation with resource agencies, tribal governments, local authorities, and other stakeholders as appropriate. Technical specialists, such as marine engineers, maritime pilots, vessel inspectors/surveyors, or salvors may be activated to assist in managing the incident. The UC should utilize the checklists provided in this manual, based on pre-identified information whenever available, to determine the risk associated with the request. Once identified, an analysis should be performed balancing the public and environmental risks with the risks to the ship and the ship/cargo owner in order to decide if and where to move a ship in need of assistance.

If there is not time to activate a UC or the RRT, the COTP should make the decision whether to grant or deny the request for a place of refuge. To the extent possible, the COTP should use the checklists provided in this manual, and reference pre-identified information on potential Places of Refuge for the immediate area in order to select an appropriate site. Following the decision, the COTP should immediately notify appropriate stakeholders.

Appendix I contains a list of potential stakeholders for ships requiring a place of refuge.

This policy provides a template for pre-identified information to support the decision making checklists below, consistent with section 3.5-3.6 of the IMO Guidelines on Places of Refuge for Ships in Need of Assistance.

Decision –Making Process

The COTP in consultation with the UC, if formed, and if available the RRT, should perform an objective analysis of the advantages and disadvantages of allowing or not allowing a ship in need of assistance to proceed to a place of refuge, to the extent possible. This analysis should identify the potential environmental, social, economic, and security impacts at the site. The COTP will consider these multiple factors to determine the appropriate course of action to

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prevent and mitigate the short- and long-term impacts to public health and the environment, local commerce, the ship and the ship/cargo owners.

The COTP should evaluate consequences to the vessel and the environment:

- If the ship remains in the same position;
- If the ship continues on its voyage;
- If the ship reached a place of refuge;
- If the ship is taken out to sea; or
- If the ship is intentionally scuttled in deep water.

The decision-making process should evaluate each of these options using the following steps to determine if a ship in need of assistance should be granted a place of refuge. These steps are not in prioritized order, but should be addressed as part of a total assessment for each of the five options above.

Step 1

The Master of the vessel, or his/her representative (the operating company and/or salvor), should request a place of refuge from the appropriate COTP. The Master should provide as much information as possible, including:

- The status of the ship. Crew, passengers, and weather;
- Medical issues, deaths, or needs of assistance and the specific assistance required;
- Intended actions and potential consequences if the request for a Place of Refuge is denied;
- If the ship is flooding, whether the pumping system is operable and is keeping up with the flooding rate;
- Status of vessel steering, propulsion, and firefighting capability;
- The steps already taken to mitigate the problem, and results;
- What needs or requirements will the ship have once in a place of refuge; and

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- Status of notifications completed by Master: i.e. owners/operators/agents/Qualified Individuals/Class Society, etc.

Step 2

When time allows, the COTP should consult with appropriate agencies via the RRT to address the issue, and activate a UC when the situation dictates.

If there is not time to consult with partner agencies, the COTP should grant or deny the request for a place of refuge, and inform the State, other concerned agencies, and appropriate stakeholders at the earliest time to determine if any protective measures are required.

Step 3

In either case, the COTP or UC should:

Require the vessel Master, owner/operator, or agent; Qualified Individual etc. to contract with a salvor and oil spill response organization (OSRO), or other specialized contractor if this has not already been done;

As the situation dictates, establish a command post and prepare to initiate a response;

If the vessel is drifting, determine its trajectory to shore and potential impact sites;

Notify the Federal Bureau of Investigation (FBI) Intelligence Coordination Center or the DHS Homeland Security Operations Center if there are any security concerns;

When appropriate and if time allows, dispatch an inspection team with expertise appropriate to the situation to board the ship and evaluate conditions, depending on risk, sea conditions, security risk, nature of distress etc;

Confer with the USCG MSC Ship Salvage Group, the vessel owners or naval architects;

Evaluate the following factors to determine if the ship in need of assistance should remain in the same position, continue on its voyage, be taken out to sea, intentionally scuttled, or be directed to a place of refuge.

Human Health & Safety

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[] Safety and Health condition of those on board as well as risk to public safety

Environment

[] The environmental consequences of staying put, continuing on its voyage, being taken out to sea, being intentionally scuttles in deep water, or going to a place of refuge (reference Step 5 below)

Ship Status & Risk Factors

[] The type and size of the ship

[] The status/seaworthiness of the ship, in particular buoyancy, stability, structural integrity, availability of propulsion and power generation, docking ability, progressive deterioration, etc...

[] Types, quantities, hazards, and condition of petroleum products, hazardous substances, and/or other cargo onboard

[] The impending threat to the ship or need for a pilot

[] Weather conditions and forecasts

[] The Master's ability to navigate the ship or need for a pilot

[] Distance and estimated time to reach a place of refuge

[] Vessel traffic in the area where the ship is currently located

[] Mitigation measures already taken

[] Determine crew status, health, staffing levels, etc...

Response & Salvage Resources

[] Availability or rescue tugs/tow vessels of sufficient size and power to aid the ship in distress

[] Salvage and spill response resources on-scene with the ship and available during transit

[] Vessel traffic in the potential destination area

[] Access to a pier or dock with repair facilities

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[] Whether salvage and lightering can safely be performed at each alternative location

Other Command Management Factors

[] Provisions of financial security and insurance by the ship owner/operator

[] Agreement by the Master and owner/operator of the ship to the proposals of the COTP/UC

[] Public expectations and media outreach

[] Capability of Master to detain crew on board until cleared by Customs and Border Protection and the USCG

Step 4

If the COTP/UC determines that the risks are generally acceptable to direct a ship into a place of refuge, the following factors should be further evaluated to determine a specific place.

Human Health & Safety

[] Assessment of human factors, including crew fatigue and overall health

[] Safety of persons at or near the place of refuge with regard to risks of explosion, fire, and pollution

[] Security concerns associated with a port or harbor area

[] Available emergency response capabilities and evacuation routes and facilities

[] Available fire-fighting and police capabilities

Environment

[] Potential environmental and cultural impacts of pollution (reference Step 5 below) or the response to a pollution incident

[] Existing resource protection strategies and availability or response resources to implement the strategies

[] Status of potential Place of Refuge (protection status, commercial area, near population centers)

Port or Anchorage Area Criteria

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- [] The type and size of the ship in relation to the size of the place of refuge
- [] Adequate water depth to accommodate the ship
- [] Navigational approach, including vessel traffic and associated risks
- [] Pilotage requirements
- [] Tides and currents
- [] Seasonal conditions
- [] Anchoring ground or suitable docking facilities
- [] Availability of repair facilities such as dry docks, workshops, and cranes
- [] Military operations in vicinity
- [] Availability of cargo transfer and storage facilities
- [] Land/and/or Air access
- [] Weather and sea state including prevailing winds
- [] Requirements from port authorities, area landowners/managers
- [] Are the proposed activities specifically prohibited and/or are there permitting or notification requirements that need to be followed

Beaching Site Criteria

- [] Depth of water, not covering vessel deck
- [] The type of shore bottom
- [] Navigational approach and pilotage requirements
- [] Seasonal conditions
- [] The openness of the site to ocean waves/currents
- [] Land and/or air access
- [] Prevailing wind patterns and forecasts

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[] Tidal range

[] Vessel stability and structure for beaching

Economic Factors

[] Potential economic impacts of pollution

[] Potential disruptions to other port operations or marine commerce

[] Potential impacts on local fisheries, commercial fisheries, and/or natural resources exposed on the transit route

[] Economic impact of the decision on the ship owner/operator and the cargo owner

[] Economic impact related to loss of natural resources, area quality and recreational use

Response, Salvage, Firefighting, and Repair Resources

[] Available salvage and spill response resources

[] Available firefighting resources

[] Availability or appropriate and compatible lightering equipment and receiving vessels

[] Availability of product storage (e.g., tank barge, shore-side storage tank, other ships)

[] Availability of skilled labor and trained personnel

[] Access to repair equipment and facilities

[] Salvage and response vessel access to the Place of Refuge

Other Command Management Factors

[] Liability, insurance, and compensation issues and limits

[] Requirements of jurisdictional authorities for financial responsibility and bonding

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☐ Required notifications such as maritime pilots, Immigration, Customs, and security

☐ Transitional or trans-jurisdictional coordination agreements/plans, if applicable

☐ Public expectations and media outreach

Step 5

To protect environmental, historic, and cultural resources, the COTP/UC should determine the presence of a proximity to the following for any Place of Refuge location:

☐ Resources at risk such as threatened or endangered species, seasonal breeding locations, or designated critical habitat

☐ Essential fish habitat

☐ Maricultural/aquaculture facilities

☐ Other priority sensitive areas, including cultural and historic properties

☐ Other resources, lands and/or waters with special designations

☐ Offshore fisheries

☐ Near shore fisheries

☐ Subsistence use patterns and treaties

☐ Recreation/tourism information

☐ Spill trajectories

Step 6

After the final analysis has been completed and a decision made, the COPT or UC through a formal document (such as a Decision Memo), should ensure that other authorities and stakeholders are appropriately informed.

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Area List of Potential Stakeholders for Incident-Specific Consultation Regarding Places of Refuge

The Southeast Louisiana Area Committee should ensure that current contact information is available through the committee members for the categories listed below:

- Federal On-Scene Coordinator
- State On-Scene Coordinator
- Federal Natural Resource Trustees
- State Natural Resource Trustees
- Federally-Recognized Tribes or First Nations
- Land Owners/Land Managers in addition to trustees identified above
 - Local (e.g., borough/municipal) governments
 - Potentially impacted facility owners
 - Port Authorities
- Other Stakeholders or Agencies
 - Regional Citizen Advisory Councils or other appropriate public interest groups
 - Harbor Safety Committees
 - Selected commercial operator (e.g., fish hatcheries, agriculture sires)
 - Immigration, Customs, the Federal Bureau of Investigation, the Department of Homeland Security, and the Federal Emergency Management Agency
 - Maritime pilot groups serving the area
 - Center of Disease Control/State and Local Health Departments

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Template for Pre-Identifying Information Necessary for Responding to Requests for Places of Refuge

Ideally, the Southeast Louisiana Area Committee should gather information on all potential Places of Refuge within the boundaries of the committee.

This appendix provides a template for the collection of general information on the planning as well as specific information on sites such as docks and piers, anchorages and moorings, and possible beaching sites. The checklists in this template support the decision making checklist in the Places of Refuge Manual by providing for the advance collection of information and are therefore crucial to expediting a Place of Refuge decision-making process.

While information on possible sites may be pre-inventoried, this does not imply that any of these sites will be the location of choice in a future event. Selection of a place of refuge by the COTP in consultation with other agencies and stakeholders will always be made on a case-by-case basis.

A workgroup may be established to pre-identify information on coastal port or places that will give the COTP valuable information on a decision to choose a Place of Refuge in an emergency situation. The workgroup may include representatives from the USCG, the State, Local and Natural Resource Agencies, and marine pilots associations. In addition, native tribes and other interested and knowledgeable stakeholders should be invited to participate.

General Information

[] Casualty risk associated with the routine vessel traffic routes in the planning area

[] Availability of rescue tugs/tow vessels of sufficient size and power to aid in the vessel in distress and predicted arrival times

[] Salvage, lightering, firefighting, and spill response resources available to this jurisdiction, including delivery times

[] Transnational or trans-jurisdictional coordination agreements/plans, is applicable

[] Shorelines likely to be impacted either during transits to a place of refuge or if refuge is denied:

- Shoreline names and locations as appropriate

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- Shoreline types and generally acceptable cleaning methods
- Description of sensitive resources/areas along the coastlines likely to be impacted, including fisheries, aquaculture sites, cultural and historic sites, Threatened and Endangered species, subsistence use, recreation/tourism, or specially designated lands or waters
- Existing resource protection strategies
- General wind/wave/current information and source for real-time tide/wind/wave/current information
- Seasonal conditions
- Potential risks to populations along the coasts with regard to explosion, fire and pollution; availability of evacuation routes
- General information on coastal vessel traffic patterns
- Other pertinent information

Information for Use in Choosing Places of Refuge

Docks and Piers

For each site:

- [] Site number (to correspond to map/chart showing location)
- [] Site name
- [] Site location
- [] Water depth at mean low tide
- [] Beach/shoreline types and generally
- [] Bottom types
- [] General wind/wave/current information
- [] Openness of the site to ocean waves/currents

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- [] Source for real-time tide/wind/wave/current information
- [] Seasonal conditions
- [] Standard navigational approach, including vessel traffic patterns and associate risks
- [] Pilotage requirements
- [] Nearby port operations and potential impacts
- [] Brief description of port facilities
- [] Brief description of repair facilities/capabilities/skilled labor
- [] Availability of cargo transfer and storage facilities
- [] Land and/or air access
- [] Risk to persons at or near the location with regard to explosion, fire, and pollution; availability or evacuation routes
- [] Description of sensitive resources/areas at the site and along potential access routes to that site, including fisheries, aquaculture sites, cultural and historic sites, Threatened and Endangered species, subsistence use, recreation/tourism, or specially designated lands or waters
- [] Existing resource protection strategies
- [] Availability of salvage, spill response, and emergency response resource including police and firefighting
- [] Security measures in place
- [] Requirements for permission from area landowners/managers
- [] Financial assurance requirements of port authorities
- [] Liability and compensation issues and limits
- [] Required notification such as Immigration or Customs

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[] Identification of Stakeholders including 24/7 contact information

[] Other pertinent information

Anchorage and Moorings

For each site:

[] Site number (to correspond to map/chart showing location)

[] Site name

[] Site location (descriptive and lat/long coordinates)

[] Water depths at mean low tide

[] Beach/shoreline types and generally accepted cleaning methods

[] Bottom types

[] General wind/wave/current information

[] Openness of the site to ocean waves/currents

[] Source for real-time tide/wind/wave/current information

[] Seasonal conditions

[] Standard navigational approach, including vessel traffic and associated risks

[] Pilotage requirements

[] Nearby port operations, if any, and potential impacts

[] Brief description of the facilities (if any)

[] Availability of cargo transfer and storage vessels

[] Land and/or air access

[] Risks to persons at or near the location with regard to explosion, fire, and pollution; availability of evacuation routes

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[] Description of sensitive resources/area at the site and along potential access routes to that site, including fisheries, aquaculture sites, cultural and historic sites, Threatened and Endangered species, subsistence use, recreation/tourism, or specially designated lands or waters

[] Existing resource protection strategies

[] Availability of salvage, spill response, and emergency response resource, including police and firefighting, and their potential access to the site

[] Security measures in place

[] Requirements for permission from area landowners/managers, is applicable

[] Financial accordance requirements of local port authorities, is applicable

[] Liability and compensation issues and limits

[] Required notifications such as Immigration or Customs

[] Identification of stakeholders including 24/7 contact information

[] Other pertinent information

Beaching Sites

For each site:

[] Site number (to correspond to map/chart showing location)

[] Site name

[] Site location (descriptive and lat/long coordinates)

[] Water depths at mean low tide

[] Beach/shoreline types and generally accepted cleaning methods

[] Bottom types

[] General wind/wave/current information

[] Openness of the site to ocean waves/currents

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- [] Source for real-time tide/wind/wave/current information
- [] Seasonal conditions
- [] Standard navigational approach, including vessel traffic and associated risks
- [] Pilotage requirements
- [] Nearby port operations, if any, and potential impacts
- [] Brief description of the facilities (if any)
- [] Availability of cargo transfer and storage vessels
- [] Land and/or air access
- [] Risks to persons at or near the location with regard to explosion, fire, and pollution; availability of evacuation routes
- [] Description of sensitive resources/area at the site and along potential access routes to that site, including fisheries, aquaculture sites, cultural and historic sites, Threatened and Endangered species, subsistence use, recreation/tourism, or specially designated lands or waters
- [] Existing resource protection strategies
- [] Availability of salvage, spill response, and emergency response resource, including police and firefighting, and their potential access to the site
- [] Security measures in place
- [] Requirements for permission from area landowners/managers, is applicable
- [] Financial accordance requirements of local port authorities, is applicable
- [] Liability and compensation issues and limits
- [] Required notifications such as Immigration or Customs
- [] Identification of stakeholders including 24/7 contact information
- [] Other pertinent information

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Chapter 9000, Appendix H Wildlife Response Plan

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Chapter 9000
Appendix K
Health and Safety
Policy

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Health and Safety Policy

Background

This policy was developed to provide Federal and State health and safety guidance for oil/hazardous substance incidents within the boundaries of the Southeast Louisiana Area Committee.

Purpose

The Purpose of health and safety efforts conducted during an environmental emergency are to ensure the protection of the responders, clean-up crews and the public from the possible hazards. The guidance contained in this policy document is intended to assist Safety Officers to establish, manage, and operate a safe spill response to the reported incident.

Health and Safety

Federal Health and Safety Guidance

Federal and state government employees, private industry employees, and other contract personnel involved in oil spill response activities must comply with all applicable worker health and safety laws and regulations. The Occupational Safety and Health (OSH) Act was enacted December 29, 1970 and granted authority to the Secretary of Labor to promulgate, modify, and revoke safety and health standards. The primary federal regulations for hazardous waste operations and emergency response are found in 29 CFR Part 1910.120. This regulation specifies the safety and health requirements for employees involved in clean-up operations at uncontrolled hazardous waste sites being cleaned up under government mandate and in certain hazardous waste treatment, storage, and disposal operations conducted under the Resource Conservation and Recovery Act of 1976 (RCRA). The regulations apply to both emergency response and post-emergency response clean-up of hazardous substance spills.

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The definition of hazardous substance used in these regulations is much broader than CERCLA, encompassing all materials listed in 49 CFR Part 172. Thus, most oils and oil spill responses are covered by these regulations. Response policies shall be consistent with federal regulations.

The Occupational Safety and Health Administration (OSHA) classifies an area impacted by oil as an uncontrolled hazardous waste site. The role of the site safety and health supervisor is to assess the site, determine the safety and health hazards present, and determine if Federal OSHA regulations apply. If an OSHA field compliance officer is on scene, he/she should be consulted to determine the applicability of OSHA regulations. Disputes should be referred to the Department of Labor representative of the RRT.

One key provision of the OSH Act provided 50/50 funding to those states that developed their own state program, which is at least as effective as the federal program in providing safe and healthful employment. The State of Louisiana does not have a federally approved state managed program and, therefore, all workers involved with oil spill response activities must comply with the federal regulations.

Louisiana State Health and Safety Guidance

Federal regulations specify minimum training levels for responders to hazardous substance incidents. OSHA enforces the requirements for federal and private workers. State and local employees must follow the same regulations.

Safety Officer Advance Planning

The incident Safety Officer (SOFR) will need personnel and equipment very quickly in the event of an incident. It would be beneficial, if possible, to have preset lists of resources, equipment, personal protective equipment (PPE), and personnel for a large incident that could be pared down for smaller incidents. This will allow the SOFR to get a request into the Logistics Section quickly while the SOFR begins to tackle the chaotic issues at the beginning of an incident. A go kit with information resources preprinted, or on computer disk (laptop and personnel printer if available) and some safety and detection equipment would increase the response effectiveness of the SOFR. A good Site Safety and Health

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plan (see below) form that the SOFR is familiar with will be a good guide/checklist to cover the safety issues of an incident and quickly develop the site safety plan. This type of preplanning is critical to allow the SOFR to quickly respond to the needs of the personnel responding to an incident.

Site Safety and Health Plans

The following site safety and health plans can be used as a general guide to facilitate rapid development of site safety and health plans during spill response. They are NON-MANDATORY guidelines intended to support appropriate site-specific sit planning. They were developed for response personnel involved in EMERGENCY and/or POST-EMERGENCY operations and may not provide sufficient detail for long-term remedial sites.

A generic site safety and health plan is provided for oil/hazardous substance responses along with a PROPOSED ASTM STANDARD Site Safety and Health Plan for oil spill response. Both documents provide a set of attachments that should be used as needed. The generic and proposed ASTM standard site safety plans are not intended to satisfy all requirements for written procedures. A site-specific site safety and health plan must be backed up by other documents which add more detailed information which may not necessarily be needed in the field (EXAMPLES: a site safety and health program, a respiratory protection program, or a medical monitoring program.)

Once the PROPOSED ASTM STANDARD is approved this will replace the generic Site Safety and Health Plan in the policy.

ICS Compatible Site Safety and Health Plan

Purpose

The ICS compatible Site Safety and Health Plan, ICS Form 208, is designed for safety and health personnel that use ICS. It is compatible with ICS and is intended to meet the requirements of the Hazardous Waste Operations and Emergency Response regulation (29 CFR Part 1910.120). The plan avoids the duplication found between many other site safety plans and certain ICS forms. It

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is also in a format familiar to users of ICS. Although primarily designed for oil and hazardous substance incidents, the plan can be used from all hazard situations. The most up-to-date ICS compatible Site Safety and Health Plan, ICS Form 208 can be found at the USCG Homeport internet site <http://homeport.uscg.mil/mycg/portal/ep/home.do>, click on library, click on Incident Command System ICS and click on [Coast Guard ICS Forms \(Individual\)](#).

Development

The ICS compatible Site Safety and Health Plan was initiated at USCG Headquarters, Office of Response in 1998. Several Coast Guard personnel were involved in the development and review of the plan. The plan was then reviewed and refined by industry representatives.

Emergency Safety and Response Plan (Form SSP-A)

Purpose

The Emergency Safety and Response Plan provides the SOFR and ICS personnel a plan for safe guarding personnel during the initial emergency phase of the response. It is only used during the emergency phase of the response, which is defined as a situation involving an uncontrolled release/discharge. It is also intended to meet the requirements of the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulation, 29 CFR Part 1910.120.

Preparation

The SOFR or his/her designated staff starts the Emergency Site Safety and Response Plan. They initially address the hazards common to all operations involved in the response (initial site characterization). Outside support organizations must be contacted to ensure the plan is consistent with other plans (local, state, other federal plans). Form SSP-G need not be completed if this form is used. When the operation proceeds into the post-emergency phase (site stabilized and clean-up operations begun) forms SSP-B and SSP-G should be used. For large incidents, the Emergency Site Safety and Response Plan complements the Incident Action Plan. For smaller incidents, the Emergency Site Safety and Response Plan complements ICS Form 201.

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Distribution

The Emergency Safety and Response Plan is completed by the SOFR and forwarded to the Planning Section Chief. Copies are made and attached to the Assignment List(s), ICS Form 204. The Operations Section Chief, Directors, Supervisors, or Leaders get a copy of the plan. They must ensure it is available on site for all personnel to review. The SOFR is responsible for ensuring that the Emergency Site Safety and Response Plan properly addresses the hazards of the operation. The SOFR accomplishes this through on site enforcement and feedback to the operational units.

Instructions

Item#	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident
2	Date/Time Prepared	Enter date (month, day, year) prepared
3	Operational Period	Enter the time interval for which the assignment applies
4	Attachments	Enter attachments. Material Safety Data Sheets are mandatory under 1910.120. Safe Work Practices may also be attached.
5	Organization	List the personnel responsible for these positions. IC and SOFR are mandatory.
6	Physical Hazards & Protection	Check off the physical hazards at the site. Identify the major tasks involved in the response (skimming, lightering, overpacking, etc.) Check off the controls that would be used to safeguard workers from the physical hazards for each major task.
7	Chemicals	List the chemicals involved in the response. Chemicals may be listed numerically. Check

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		off hazards, potential health effects, pathway of dispersion, and exposure route to the chemical. Numbers corresponding to the chemical may be entered into the check blocks to differentiate. Check off PPE to be used. Identify the type of PPE selected (for example: gloves: butyl rubber).
8	Instruments	Indicate the instruments being used for monitoring. List the action levels adjacent to the instruments being used. Identify the chemicals being monitored. List the physical parameters of the chemicals. Use a separate form for additional chemicals monitored.
9	Decontamination	Check off the decontamination steps to be used. Numbers may be entered to indicate the preferred sequence. Identify any intervening steps necessary on the form or in a separate attachment.
10	Site Maps	Draw a rough site map. Ensure all the information listed is identified on the map.
11	Potential Emergencies	Identify any potential emergencies that may occur. If none, so state. Check off the appropriate alarms that may be used. Identify emergency prevention and evacuation procedures in the space provided or on a separate attached sheet.
12	Communications	Indicate type of site communications (phone, radio). Indicate phone numbers for frequencies for the command, tactical, and

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		entry functions.
13	Site Security	Identify the personnel assigned. Identify security procedures in the space provided or on a separate attached sheet. Identify the equipment needed to support security operations.
14	Emergency Medical	Identify the personnel assigned. Identify emergency medical procedures in the space provided or on a separate attached sheet. Identify the equipment needed to support security operations.
15	Prepared by:	Enter the name and position of the person completing the worksheet
16	Date/time briefed	Enter the date/time the document was briefed to the appropriate workers and by whom.

Site Safety Plan (Form SSP-B)

Purpose

The Site Safety Plan provides the SOFR and ICS personnel a plan for safeguarding personnel during the post-emergency phase of an incident. The post-emergency phase is when the situation is stabilized and cleanup operations have begun. SSP-B is intended to meet the requirements of the HAZWOPER regulation, 29 CFR Part 1910.120.

Preparation

The SOFR or his/her designated staff starts the Site Safety Plan. They initially address the hazards common to all operations involved in the response (initial site characterization). The plan is then reproduced and, as a minimum, sent to ICS Group/Division Supervisors. They amend it according to unique job or on-

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scene hazards with support from the SOFR and/or his/her staff (detailed site characterization). The plan is continuously updated to address changing conditions. During the first hours of the response, where most response functions are in the emergency phase, the SOFR may chose to use the Emergency Safety and Response Plan (SSP-A) in place of the Site Safety Plan. For large incidents, the SSP-B compliments the Incident Action Plan. For smaller incidents, the SSP-B compliments ICS Form 201. The SOFR is encouraged to use the HAZWOPER Compliance Checklist (Form SSP-K) to ensure the Incident Action Plan and the 201 address the requirements and all other pertinent ICS forms (203, 205, 206, etc.) are completed.

Distribution

The initial Site Safety Plan completed by the SOFR is forwarded to the Planning Section Chief. Copies are made and attached to the Assignments List(s), ICS Form 104. The Operations Section Chief, Directors, Supervisors, or Leaders get a copy and make on site amendments specific to their operation. They must also ensure it is available on site for all personnel to review. The SOFR provides personnel from his/her staff to assist in the detailed site characterization. The SOFR is responsible for ensuring that the Site Safety Plan for each assignment properly addresses the hazards of that assignment. The SOFR shall ensure completion of the Worker Acknowledgement Form (SSP-I).The SOFR accomplishes this through on site enforcement and feedback to the operational units.

Instructions

Item#	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident
2	Date/time Prepared	Enter date (month, day, year) prepared
3	Operational Period	Enter the time interval for which the assignment applies
4	Safety Officer	Enter the name of the Safety Officer and means of contact

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5	Group/Division Sup Strike Team/TF Leader	The Supervisor/leader who receives this form will enter their name here
6	Location & size of site	Enter the geographical location of the site and the approximate square area
7	Site Accessibility	Check the block(s) if the site is accessible by land, water, air, etc.
8	For Emergency Contact	Enter the name and way to contact the individual who handles emergencies.
9	Attachments	Enter attachments. Material Safety Data Sheets are mandatory under 1910.120. Safe Work Practices may also be attached.
10	Job/Task Activity	Enter Job/Task & Activities, list hazards, list potential injury and health effects, check exposure routes and identify controls. If more detail is needed for controls, provided attachments.
11	Prepared by	Enter the name and position of the person completing the worksheet
12	Briefed on _____ by	Enter the sate/time the document was briefed to the appropriate workers and by whom

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Site Map for Site Safety Plan (SSP-C)

Purpose

The Site Map for the Site Safety Plan is required by 29 CFR Part 1910.120. It provides, in one place, a visual description of the site, which can help ICS personnel locate hazards, identify evacuation routes, and places of refuge.

Preparation

The Site Map for the Site Safety Plan can be completed by the SOFR, his/her staff, or by ICS personnel (Group Supervisors, Task Force/Strike Team Leaders) working at a site with unique and specific hazards. One or several maps may be developed, depending on the size of the incident and the uniqueness of the hazards. The key is to ensure that the workers using the map(s) can clearly identify the work zones, locations, of hazards, evacuation routes and places of refuge.

Distribution

This form must be located with the Site Safety Plan (SSP-B). It therefore follows the same distribution route.

Instructions

Item#	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident
2	Date/Time prepared	Enter date (month, day, year) prepared
3	Operational Period	Enter the time interval for which the assignments applies
4	Safety Officer	Enter then name of the Safety Officer and means of contact

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5	Supervisor/Leader	The Supervisor/Leader who receives this form will enter their name here
6	Location & size of site	Enter the geographical location of the site and the approximate square area.
7	Site Accessibility	Check the block(s) if the site is accessible by land, water, air, etc.
8	For Emergency Contact	Enter the name and way to contact the individual who handles emergencies
9	Include	Ensure the map includes the listed items provided in this block
10	Prepared by	Enter the name and position of the person completing the worksheet
11	Briefed on _____ by	Enter the date/time the document was briefed to the appropriate workers and by whom

Emergency Response Plan (ICS Form 208D)

Purpose

The Emergency Response Plan provides information on measures to be taken in the event of an emergency. It is used in conjunction with the Site Safety Plan (Form SSP-B). It is required by 29 CFR Part 1910.120.

Preparation

The SOFR, his/her staff member if the Site Supervisor/Leader prepares the Emergency Response Plan. A copy of the Medical Plan (ICS Form 206) shall always be attached to this form.

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Distribution

This form must be located with the Site Safety Plan (SSP-B). It therefore follows the same distribution.

Instructions

Item#	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident
2	Date/Time Prepared	Enter date (month, day, year) prepared
3	Operational Period	Enter the time interval for which the assignment applies
4	Safety Officer	Enter the name of the Safety Officer and means of contact
5	Supervisors/Leader	The Supervisor/Leader who receives this form will enter their name here
6	Location & size of site	Enter the geographical location of the site and the approximate square area
7	For Emergency Contact	Enter the name and way to contact the individual who handles emergencies
8	Attachments	Enter attachments. ICS Form 206 must be included
9	Emergency Alarm	Enter a description of the sound of the emergency alarm and its location
10	Backup Alarm	Enter a description of the sound of the emergency alarm and its location
11	Emergency Hand	Enter the emergency hand signals to be used

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	Signals	
12	Emergency Personal Protective Equipment Requires	Enter the emergency PPE that may be needed in the event of an emergency
13	Emergency Notification Procedures	Enter the procedures for notifying the appropriate personnel and organizations in the event of an emergency
14	Places of Refuge	Enter by name the place of refuge personnel can go to in the event of an emergency
15	Emergency Decon & Evacuation Steps	Enter emergency decontamination steps and evacuation procedures
16	Site Security Measures	Enter site security measures needed for emergencies
17	Prepared by	Enter the name and position of the person completing the worksheet
18	Briefed on _____ by	Enter the date/time the document was briefed to the appropriate workers and by whom

Daily Air Monitoring Log (Form SSP-E)

Purpose

The Daily Air Monitoring Log provides documentation of air monitoring conducted during an incident. The log is supplement to the Site Safety Plan (SSP-B). It is only required when performing air monitoring operations. The information used from the log can help update the Site Safety Plan.

Preparation

Persons conducting monitoring complete the Daily Air Monitoring Log. Normally these are air-monitoring units under the Site Safety Officer. If there is a decision

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not to monitor during a spill, the reasons must be available on site, readily available and briefed to all impacted ICS personnel.

Instructions

Item#	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident
2	Date/Time Prepared	Enter date (month, day, year) prepared
3	Operational Period	Enter the time interval for which the assignment applies
4	Safety Officer	Enter the name of the Safety Officer and means of contact
5	Location & size of site	Enter the geographical location of the site and the approximate square area
6	Hazards of concern	Enter the hazards being monitored
7	Action Levels	Enter the hazards being monitored
8	Weather	Enter weather information. Ensure units of measure are listed. Include wind direction and wind speed.
9	Air Monitoring Data	Enter the instruments type and number, persons monitoring, results with appropriate units, location of reading, date and time of reading, interferences and comments. Detection limits of the instruments used should be captured in 9.g, interferences and comments.
10	Safety Officer Review	The Safety Officer must review and sign the form

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Personal Protective Equipment (SSP-F)

Purpose

The Personal Protective Equipment (PPE) Form is a list of PPE to be used in operations. The listing of PPE is required by 29 CFR Part 1910.120.

Preparation

The PPE form is completed by the SOFR, or his/her staff. PPE common to all ICS Operations personnel is addressed first. Jobs with unique PPE requirements (i.e. fall protection) are addressed next. When the form is delivered on site, the ICS Director, Supervisor, or Leader may amend the list to ensure personnel are adequately protected from job hazards. It must be completed prior to the onset of any operation, unless addressed elsewhere by Standard Operating Procedures.

Distribution

This form must be located with the Site Safety Plan (SSP-B). It therefore follows the same distribution.

Instructions

Item#	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident
2	Date/Time Prepared	Enter date (month, day, year) prepared
3	Operational Period	Enter the time interval for which the assignment applies
4	Safety Officer	Enter the name of the Safety Officer and means of contact
5	Supervisor/Leader	The Supervisor/Leader who receives this

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		form will enter their name here
6	Location & size of site	Enter the geographical location of the site and the approximate square area
7	Hazard(s) Addressed	Enter the hazards that need to be safeguarded against
8	For emergencies Contact	Enter the name and way to contact the individual who handles emergencies
9	Equipment	List the equipment needed to address the hazards. If pre-designed Safe Work Practices are used, indicate here and attach form
10	References consulted	List the references used in making the selection of PPE
11	Inspection procedures	Enter the procedures for inspecting PPE prior to donning. If pre-designed Safe Work Practices are used, indicate here and attach to form
12	Donning Procedures	Enter the procedures for putting on the PPE. If pre-designed Safe Work Practices are used, indicate here and attach to form
13	Doffing Procedures	Enter the information for removing the PPE. Of pre-designed Safe Work Practices are used, indicate here and attach to form
14	Limitations and Precautions	List the limitations and precautions when using PPE. Include the maximum time to be inside the PPE. Heat Stress concerns, psychomotor skill detracting and other factors

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15	Prepared by	Enter the name as position of the person completing the worksheet
16	Briefed on _____ by	Enter the date/time the document was briefed to the appropriate workers and by whom

Decontamination

Purpose

The Decontamination form provides information on how workers can avoid contamination and how to get decontaminated. It is a supplemental form to the Site Safety Plan.

Preparation

The Decontamination Form can be completed by the SOFR, and member of his/her staff, or by the Group/Division Supervisor, Task Force/Strike Team Leader on the site.

Distribution

This form must be located with the Site Safety Plan (SSP-B). It therefore follows the same distribution.

Instructions

Item#	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident
2	Date/Time Prepared	Enter date (month, day, year) prepared

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3	Operational Period	Enter the time interval for which the assignment applies
4	Safety Officer	Enter the name of the Safety Officer and means of contact
5	Supervisor/Leader	The Supervisor/Leader who receives this form will enter their name here
6	Location & size of site	Enter the geographical location of the site and the approximate square area
7	For emergencies Contact	Enter the name and way to contact the individual who handles emergencies
8	Hazard(s) Addressed	Enter the hazards that need to be safeguarded against
9	Equipment	List the equipment needed to address the hazards. If pre-designed Safe Work Practices are used, indicate here and attach form
10	References consulted	List the references used in making the selection for PPE
11	Contamination Avoidance Practices	Enter procedures for personnel to avoid contamination. If pre-designed Safe Work Practices are used, indicate there and attach to form
12	Decon Diagram	Draw a diagram for the decontamination operation. If pre-designed Safe Work Practices are used, indicate here and attach to form
13	Decon Steps	List the decontamination steps
14	Prepared by	Enter the name and position of the person completing the worksheet
15	Briefed on ____ by	Enter the date/time the document was briefed to the

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appropriate workers and by whom

Site Safety Enforcement Log (SSP-H)

Purpose

The Site Safety Plan Enforcement Log is used to help enforce safety during an incident.

Preparation

The SOFR and/or his/her staff complete the Site Safety Plan Enforcement Log. The log is completed as Safety personnel are on scene reviewing the site. It should be completed at a minimum once per day. The number of enforcement logs to be completed depends on the size of the incident. Enough should be completed to ensure that site safety is being adequately enforced.

Distribution

The Site Safety Enforcement Log, when completed, is delivered to the SOFR. The SOFR can use the form to amend the Site Safety Plan (SSP-A or B).

Instructions

Item#	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident
2	Date/Time Prepared	Enter date (month, day, year) prepared
3	Operational Period	Enter the time interval for which the assignment applies
4	Safety Officer	Enter the name of the Safety Officer and means of contact
5	Supervisor/Leader	The Supervisor/Leader who receives this form will enter their name here

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6	For emergencies Contact	Enter the name and way to contact the individual who handles emergencies
7	Attachment	List any attached supporting documentation
8	Job/Task Activity	Enter only those Job Task/activated for which a deficiency is noted
	Hazards	Enter the hazards not being sufficiently addressed
	Deficiency	Enter the deficiency
	Action Taken	Enter the corrective action taken to address the deficiency
	Safety Plan Amended?	Enter whether the onsite safety plan was amended
	Signature of Supervisor/Leader	Ensure the Supervisor/Leader signs the form to acknowledge the deficiency
9	Prepared by	Enter the name and position of the person completing the worksheet
10	Briefed on_____ by	Enter the date/time the document was briefed to the appropriate workers and by whom

Worker Acknowledgement Form (SSP-I)

Purpose

The Worker Acknowledgement form is used to document workers who have received safety briefings.

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Preparation

Those personnel responsible for conduction safety briefings complete this form initially. Once the briefings are completed, workers who were briefed print their name, sign, date, and indicate the time of the briefing.

Distribution

This form is returned to the SOFR or designated representative at the end of each operational period.

Instructions

Item#	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident
2	Site Location	Indicate the location where the briefings are held
3	Attachment	Indicate any attachments used as part of the briefings
4	Type of briefing	Check the block next to the type of briefing
5	Presented by	Enter the name of the person conducting the briefing
6	Date	Enter the date of the briefing
7	Time	Enter the time of the briefing
8	Worker Name	Workers receiving the briefing print their name, sign, date, and enter the time they acknowledge the briefing

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Emergency Safety and Response Plan Compliance Checklist (SSP-J)

Purpose

The purpose of the Emergency Safety and Response Plan 1910.120 Compliance Checklist is to ensure that incident response operations are in compliance with 29 CFR part 1910.120, HAWOPER. It also identifies how from SSP-J can be used to satisfy the HAZWOPER requirements. This checklist is an optional form.

Preparation

The Emergency Safety and Response Compliance Checklist is completed by the SOFR or his/her staff as frequent as necessary whenever the SOFR wants to ensure regulatory compliance. It is best used in conjunction with the Site Safety Plan Enforcement Log (SSP-H). The Site Safety Plan Forms (A-G) best meet some of the requirements. The Incident Action Plan is suited to address other requirements, and the SOFR should ensure the IAP addresses them. Other requirements are performance based and are best evaluated on scene by the SOFR or his/her staff

Distribution

The SOFR should maintain the Emergency Safety and Response Plan 1910.120 Compliance Checklist.

Instructions

Item#	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident
2	Date/Time prepared	Enter date (month, day, year) prepared
3	Operational Period	Enter the time interval for which the assignment applies

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4	Supervisor/Leader	The Supervisor/Leader who receives this form will enter their name here
5	Location of site	Enter site location
6	Cites	These are the regulatory cites within 1910.120. The major headings are highlighted in bold. Informational cites or cites that are duplicative are not included
7	Requirements	This lists the requirements in a question format. Some require documentation or some form of action.
8	ICS Form	List this requirements covered in SSP-A
9	Check Block	Enter the check if the site satisfies the requirement
10	Comments	This provides additional information on the requirement. The user may also enter comments
11	Prepared by	Enter the name and position of the person completing the worksheet

HAZWOPER 1910.120 Compliance Checklist

Purpose

The purpose of the HAZWOPER 1910.120 Compliance Checklist is to ensure that incident response operations are in compliance with 29 CFR Part 1910.120, HAZWOPER. It also identified how other ICS forms can be used to satisfy the HAZWOPER requirements. This is an optional form.

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Preparation

The HAZWOPER 1910.120 Compliance Checklist is completed by the SOFR or his/her staff as frequently as necessary whenever the SOFR wants to ensure regulatory compliance. It is best used in conjunction with the Site Safety Plan Enforcement Log (SSP_H). The Site Safety Plan Forms (A-G) best meet some of the requirements. The Incident Action Plan is suited to address other requirements, and the SOFR should ensure the IAP addresses them. Other requirements are performance based and are best evaluated on scene by the SOFR or his/her staff.

Distribution

The HAZWOPER 1910.120 Compliance Checklist should be maintained by the SOFR.

Instructions

Item#	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident
2	Date/Time prepared	Enter date (month, day, year) prepared
3	Operational Period	Enter the time interval for which the assignment applies
4	Supervisor/Leader	The Supervisor/Leader who receives this form will enter their name here
5	Location of site	Enter site location
6	Cites	These are the regulatory cites within 1910.120. The major headings are highlighted in bold. Informational cites or cites that are duplicative are not included

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7	Requirements	This lists the requirements in a question format. Some require documentation or some form of action.
8	ICS Form	List those ICS Forms that cover the requirement. IAP designations mean it should be covered in the IAP, it does not guarantee it is covered. The SOFR must ensure this.
9	Check Block	Enter the check if the site satisfies the requirement
10	Comments	This provides additional information on the requirement. The user may also enter comments
11	Prepared by	Enter the name and position of the person completing the worksheet

HAZWOPER 1910.120 Drum Compliance Checklist

(SSP-L)

Purpose

The purpose of the HAZWOPER 1910.120 Drum Compliance Checklist is to ensure that incident response operations are in compliance with 29 CFR Part 1910.120, HAWOPER whenever drums are encountered during an incident. This is an optional form.

Preparation

The HAZWOPER 1910.120 Drum Compliance Checklist is completed by the SOFR of his/her staff as frequently as necessary whenever the SOFR wants to ensure regulatory compliance. It is best used in conjunction with the Site Safety

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Plan Enforcement Log (SSP-H). This Site Safety Plan Forms (A-G) best meet some of the requirements. Other requirements are performance based and are best evaluated on scene by the SOFR or his/her staff.

Distribution

The HAZWOPER 1910.120 Drum Compliance Checklist should be maintained by the SOFR.

Instructions

Item#	Item Title	Instructions
1	Incident Name	Print the name assigned to the incident
2	Date/Time prepared	Enter date (month, day, year) prepared
3	Operational Period	Enter the time interval for which the assignment applies
4	Safety Officer	Enter the name of the SOFR and means of contact
5	Supervisor/Leader	The Supervisor/Leader who receives this form will enter their name here
6	Location & Size of the site	Enter the geographical location of the site and the approximate square area
7	For Emergencies Contact	Enter the name and way to contact the individual who handles emergencies
8	Note	<u>Tanks and vaults</u> should also be treated in the same manner as described in the checklist (1910.120(j)(9)).
9	Cites	These are the regulatory cites within 1910.120. The major headings are highlighted in bold. Informational cites or cites that are duplicative are not included

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10	Requirements	This lists the requirements in a question format. Some require documentation or some form of action.
11	Check Block	Enter the check if the site satisfies the requirement
12	Comments	This provides additional information on the requirement. The user may also enter comments
13	Prepared by	Enter the name and position of the person completing the worksheet

Site Safety Plan Attachments (SSP-ATTACH 1-#)

Purpose

The Site Safety Plan attachments provide ready-made safe work practices for the SOFR and ICS Personnel. They are optional documents designed to assist the SOFR in communicating and enforcing control of safety hazards. They were derived from the U.S. Coast Guard's national Strike Force's Guide for Developing Oil Spill Site Safety Plans (NSFCCINST N16465.2).

Preparation

The SSP-Attachments require little to no preparation. Some of them have blank sections (due to information changing) that are required to be filled in by the SOFR or his/her staff. The SOFR is encouraged to use the format presented by the attachments for developing his/her own additional safe work practices.

Distribution

These forms must be located with the Site Safety Plan (SSP-A/B). They are therefore following the same distribution.

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Chapter 9000
Appendix L
Volunteer Policy

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Volunteer Policy

Use of Volunteers during a Pollution Incident

The demands of an incident may exceed the resources of government organizations. Volunteers can support response efforts in many ways but the use of volunteers during an oil spill response is not automatic. The decision to employ volunteers will take into account the benefits that might be gained and the safety and liability realities. The UC, in the early stages of the event, will make the decision whether volunteers will be employed and capabilities in which they can serve.

The use of volunteers to assist in oil spill responses is recognized in the NCP, 40 CFR Part 300.185(c). The definition section of the NCP includes “volunteer” as follows:

A Volunteer is any individual accepted to perform services by the lead agency which has authority to accept volunteer services (examples: See 16 U.S.C. 742f(c)). A volunteer is subject to the provisions of the authorizing statute and the NCP.

Volunteers fall into two general categories:

Affiliated Volunteers

Affiliated volunteers are those individuals associated with an Affiliated Volunteer Organization prior to an incident. They usually have received sufficient training to allow them to contribute to their host organization, although individuals may not be trained in oil spill response. Affiliated Volunteer Organizations generally hold a non-profit status and provide some form of training, maintain an affiliated volunteer database, and have volunteer functions to facilitate current volunteer experience and communication. These groups also accept donations of money or materials.

Convergent Volunteers

Convergent volunteers are individuals not affiliated with an existing Affiliated Volunteer Organization. After a spill has occurred, convergent volunteers may express a spontaneous desire to participate in a response effort, but may have little to no oil spill response training. Oil spills typically receive significant press coverage and produce strong public concern for public health and injury to wildlife and the environment. This visibility and concern motivates citizens to assist where they can in the oil spill response. The ability to give the public an

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opportunity to volunteer during an oil spill can be helpful for their emotional experience and can assist in altering public perception in a positive manner.

Human health and safety is the first priority in a decision regarding use of volunteers. The benefit of volunteer efforts must be weighed against concerns for volunteer safety. Based on the conditions specific to an incident, the UC will determine the suitability of integrating volunteers, whether affiliated or convergent, into an oil spill response.

Unaffiliated/Convergent Volunteer Management Planning

Local government and nonprofit sector agencies are generally responsible for the mobilization, management, and support of volunteers, with support from the State and Federal levels. Specialized planning, information sharing, and management structure are necessary to coordinate efforts and maximize the benefits of volunteer involvement.

Consistent and timely communication should be utilized in order to educate the public, minimize confusion, and clarify expectations. Volunteers can be successful participants in emergency management systems when they are flexible, cooperative, aware of risks, and willing to be coordinated by local emergency management experts. Ideally, all volunteers should be affiliated with an established organization and trained for specific disaster response activities. However, the spontaneous nature of individual volunteering is inevitable; therefore it must be planned for and managed.

The successful integration of citizen involvement in an emergency management setting is imperative to prepare for, respond to, recover from, and mitigate the effects of disasters in our communities. Therefore, all unaffiliated volunteers should be directed toward State Volunteer Coordinators or non-governmental organizations.

Volunteer Organization in ICS

During an initial response before volunteer interests have been expressed, the ICS structure may not contain positions specifically dedicated to volunteer management. As the Unified Command (UC) becomes aware of individuals or organizations interested in providing volunteer services, the UC should make assignments for a Volunteers Unit in the Planning Section. During preparation for the tactics meeting phase of the Planning "P", the Resource Unit Leader (RESL), Planning Section Chief (PSC), and Operations Section Chief (OSC) will

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determine specific roles, site locations, safety requirements, and required number of volunteers needed in the applicable operational period. When the UC approves the use of volunteers, the UC will have the options of:

- Assigning a Volunteer Coordinator within the Planning Section if volunteer interest is low;
- Assigning a Volunteer Unit Leader (VUL) within the Planning Section if volunteer interest is moderate; or
- Expanding the Command Staff to include a Volunteer Officer (VO).

The UC will supply logistical support to volunteers while operationally deployed (regardless of status condition), engage in logistical support, and continue this relationship with volunteers regarding and issues resulting from volunteerism during the response. Volunteers will not report directly to the Command Post for registration and training, but will be registered, trained, and deployed from an alternate location.

If the UC makes a decision to coordinate with Local Government in using volunteers (other than oiled wildlife), Local Government representatives will be notified via the LNO or the VUL. Local Government will advise the UC regarding their ability to assist in the requested volunteer effort. If a particular local government cannot assist in volunteer coordination, the UC or VUL can request a neighboring city or Parish to facilitate volunteer coordination for the un-assisting local government. After participating local governments partners have received, registered, and trained the requisite volunteers, that local agency will continue to coordinate with the VUL in the management of volunteers throughout the response. Volunteers shall only be deployed through direct written tasking from the UC during the tactics meeting via the IAP process.

Volunteer Coordinator/ Volunteer Unit Leader

The National Response Framework identifies the VUL as ideally being a Federal, State, or local official trained in managing volunteers, knowledgeable in contingency operations, and capable of providing leadership. This guidance should also be considered when assigning a Volunteer Coordinator for incidents with low volunteer interest.

In the event that volunteer interest during an incident is low, a Volunteer Coordinator will be assigned within the Planning Section to handle all volunteer associated issues. The Volunteer Coordinator workload should be periodically

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evaluated by the PSC to determine if assigning a VUL is necessary, as volunteer interest may change dramatically during an incident.

For incidents with moderate to high volunteer interest, a VUL will be established under the Planning Section. To effectively manage volunteers the VUL should have additional staff trained in the managing and training of volunteers. This staff should include representatives from local government agencies within the affected jurisdictions, as much as possible.

The VUL is responsible for managing and overseeing all aspects of volunteer participation, including coordination with local government agencies. The VUL is part of the Planning Section and reports to the Resource Unit Leader. The VUL responsibilities include:

- Ensure proper registration, tracking, and implementation of volunteers, according to UC guidance;
- Coordinate with RUL to determine where volunteers are needed;
- Coordinate with the JIC to advise the public of scheduled volunteer information sessions, where/how to register volunteer interest, whether volunteers are/are not needed; how volunteers might interfere with response workers and the limited roles volunteers may perform if needed (i.e. potential health risks; cannot pick up oiled rocks or wildlife unless specially trained);
- Identify any necessary skills and training needs;
- Verify minimum additional training needed, as necessary, with the SOFR or units requesting volunteers (if special skills are required);
- Activate, as necessary, standby contractors for various training needs;
- Activate pre-identified and pre-trained volunteers as necessary;
- Coordinate with Logistics Section Chief for Volunteer housing and meal accommodations;
- Assist with volunteer special needs, as possible; and
- Maintain Unit/Activity Log (ICS form 214).

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Federal Agency Volunteer Management Policy

The three primary federal regulations governing oil spill response, 40 CFR Part 300, 29 CFR Part 1910.120 (Occupational Safety and Health Standards/Hazardous Waste Operations and Emergency Response) and 40 CFR Part 311 (Worker Protections) do not exclude the use of volunteer organizations. However, all spill response operations must comply with these regulations. 29 CFR Part 1910.120 outlines various health and safety requirements for different on-site activities. In addition, various federal property owners (e.g. DOD and DOE) may have specific regulations, policies, or national security concerns regarding the use of volunteers. The Cost Guard requires a “hold harmless” clause to be signed by each volunteer. The legal representative of these organizations must be consulted prior to employing volunteers.

Policy/Regulations/Other Guidance

- June 2009 COMDTNOTE (081453Z) “Use of Volunteers During Oil Spills; Interim Policy”.
- Emergency Response Program to Hazardous Response Releases, 29 CFR 1910.120(q); see also Appendix E.
- 8182 Department of Labor OSHA 3172.
- 40 CFR Part 311.
- <http://www.training.fema.gov/is/> (free IS100 and IS700 training).

Volunteer Policy of the Southeast Louisiana ACP

The general policy accepted by the Southeast Louisiana ACP is that volunteers will normally be used in low risk activities and only after receiving safety training appropriate for their designated activities. If volunteers are used for higher risk activities such as wildlife rehabilitation or pre-cleaning beaches, specialized training and, in some cases, licensing may be required.

Volunteers associated with an Affiliated Volunteer Organization and with documented specialized training will be given higher priority.

Convergent volunteers must participate through either local government or an Affiliated Volunteer Organization.

Use of unpaid, Convergent Volunteers will supplement, not replace, the work of professional responders.

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For safety, liability, and management reasons, volunteers will not be used during hazardous substance or WMD incidents.

Health and Safety Standards

The minimum training required for volunteers involved in removal operations should be consistent with the Hazardous Waste Operations (HAZWOPER) standards set forth in Emergency Response Program to Hazardous Response Releases, 29 CFR Part 1910.120(q).

Some states have federally approved state plans outlining health, safety, and training requirements based on HAZWOPER standards. These states are called state-plan states. Louisiana is NOT an OSHA state-plan state and therefore does not have an OSHA approved state-plan to which can be referred. If volunteer tasks do not require HAZWOPER, such training should not be conducted or mandated.

Safe Use/Training of Volunteers

- Appropriate training shall be provided to volunteers prior to participation in spill response.
- In accordance with the National Contingency Plan for Oil and Hazardous Substances (40 CFR Part 300), volunteers SHOULD NOT participate in the physical removal or clean-up activities during the oil spill response and should be limited to non-hazardous activities.
- Volunteers SHOULD NOT be deployed or be used in exclusionary hot zones.
- Volunteers who do take part in spill response operations must be trained in accordance with 29 CFR Part 1910(q) and any applicable state requirements.
- 29 CFR Part.120, Appendix E, Section C, 'Emergency response training', provides OSHA's recommendations to employers, employees or volunteers in public sector emergency response organizations if they are outside of Federal OSHA jurisdiction.
- Volunteers should have IS100 and IS700 training if they will be assigned any duties within the Incident Command Post. This training is free at <http://www.training.fema.gov/is/>.

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Basic Guidelines on Handling Volunteers

Volunteer coordination in an oil spill offers complications not normally encountered in response. Some considerations may include:

- Unaffiliated/Convergent volunteers who arrive unannounced should be escorted by authorized safety personnel.
- Using volunteers at the Incident Command Post may create an information security risk. Volunteers should not have access to certain information not previously determined to be releasable to the public. Any requests for information shall be subject to the Freedom of Information Act (FOIA) process and/or authorized by the PIO.
- There are many agencies involved in oil spill response, The UC should be aware of any litigious issues between agencies, OSROs, and subsequent access to sensitive or confidential information.
- Volunteers should not be deployed or used in the same locations as the Oil Spill Removal Organizations (OSROs), Natural Damage Assessment (NRDA) teams, or Wildlife Search and Collection Teams, unless previously authorized and approved.

State Volunteer Coordinators

Louisiana Serve Commission

620 Florida Street, Suite 210
Baton Rouge, LA 70801-1306

Contact: Janet Pace, Executive Director
Phone: (225) 342-3125
Fax: (225) 342-0106
Email: jpace@crt.state.la.us
Website: <http://www.crt.state.la.us/laserve>

Oil Spill Response Volunteer Louisiana Hotline

Phone: (866) 448-5816
Website: <http://www.volunteerlouisiana.gov/>, <http://emergency.louisiana.gov/>

Volunteer Assignments

The following is a pre-established list of where volunteers may be utilized during an incident; however, the UC may perform a risk-benefit analysis to determine if properly trained volunteers may be used for tasks not specified on this list. At a

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minimum, all volunteers are required to attend a 2-hour Workplace Health and Safety Training and Site Safety Training, prior to conducting any volunteer work.

Accounts Specialist

Maintains files and accounts of expenses attributable to the volunteer effort; communicates with Finance Section to determine accounting needs and system to be used.

Skills Required: Must be detail oriented; experienced with 10-key data entry and be familiar with common computer software accounting and spreadsheet systems

Training required: 2-Hour Workplace Health and Safety Training, Site Safety

Administrative Coordinator/Office Manager

Oversees office administration activities, supervises work of file and data specialists; oversees development, maintenance and accuracy of computer and paper files of volunteer records; procures and distributes reports and provides updates to the VUL as required.

Skills Required: Good working knowledge of computer work processing and spreadsheet software, as well as excellent organizational, supervisory, and communication skills.

Training Required: 2-Hour Workplace Health and Safety, Site Safety.

Command Center Administrative Specialist

Provides backup and supplemental skills for IC/UC Command Center staff.

Training Required: 2-Hour Workplace Health and Safety, Site Safety.

Communications Specialist

Established and maintains the volunteer communication plan. Tests and sustains communication equipment and bulletin board. Compiles updates of volunteer needs.

Skills Required: Public communications background with knowledge of local communications and systems preferred.

Training Required: 2-Hour Workplace Health and Safety, Site Safety.

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Computer Operator

Enter personnel information into established computer database.

Skills Required: Familiarity with computer use.

Training Required: 2-Hour Workplace Health and Safety, Site Safety.

Crowd Control/Site Security

Volunteers may be used in cooperation with law enforcement officers to set up police barricades as long as the work does not involve physical contact with onlookers. Oversees access points to ensure only authorized persons enter and habitat is protected. Task may include boat operators directing other vessels away from contaminated areas while allowing work vessels in. Boat operators will not be allowed in the hot zone. Boat operators may transport assessment teams or cleanup crews in areas outside the hot zone. Security personnel should be prepared to direct volunteers to appropriate information sites.

Skills Required: Experience in oil and storm-spotting and law enforcement preferred. Experience in boat operations if applicable. Must be able to lift 35 lbs.

Training Required: 2-Hour Workplace Health and Safety, Site Safety.

Data Entry Specialist

Enters information into established computer databases(s).

Skills Required: Familiarity with computer use. Particular software may be taught on the job if necessary.

Training Required: 2-Hour Workplace Health and Safety, Site Safety.

Documentation Unit Worker

Responsible for the maintenance of accurate, up-to-date volunteer-related files. Documentation includes reports, training, communication logs, injury claims, situation status reports, and documentation from the following Volunteer Unit entities: Interviewer, Liaison Chief, Medical Unit Worker, Orientation and Training Coordinator, Photographer, PIO, Safety Officer Assistant, Scheduler/Time Card Assistant. Ensures each section is maintaining and providing appropriate documents (including volunteer signatures). Receives, complies, and organizes all volunteer-related paperwork and training. Store files for legal, analytical, and historical purposes. Will provide duplication and copying services for all other sections.

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Skills Required: Excellent organizational, filing, copying; and communication skills. Must be detail oriented.

Training Required: 2-Hour Workplace Health and Safety, Site Safety, IS100 and IS700.

Driver

Provides ground transportation services as needed; may transport people using a sedan or van; may transport wildlife and wildlife food to various facilities or sites by truck; loads and unloads coolers used to transport animal food; picks up food from suppliers and delivers to facilities; keeps vehicle bed clean (if applicable). All driving responsibilities require current driver's license, clean driving record, and proof of insurance.

Training Required: Site Safety, 4-Hour HAZWOPER Awareness Level

Equipment Repair Technician

Maintains and repairs vehicles and response equipment after decontamination.

Skills Required: A background in mechanics as applicable. Must be able to lift 35 lbs.

Training Required: Site Safety, 4-Hour HAZWOPER Awareness Level

File Clerk/Office Assistant

Performs general office tasks; files documents in office as appropriate; prepares outgoing memos and mail; sends and receives faxes; makes photocopies.

Skills Required: Telephone skills, word processing, and development of graphic presentations. Computer spreadsheet/database experience is desirable but not required.

Training Required: 2-Hour Workplace Health and Safety, Site Safety

First Aid Responder

Provides emergency first aid for volunteers and other responders.

Skills Required: Current First Aid Certification.

Training Required: 2-Hour Workplace Health and Safety (If the Volunteer will be acting as a First Aid Responder in the Warm or Hot Zone shall be trained 24-Hour HAZWOPER) Site Safety.

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Food Unit Worker

Supplies food and water for responders (outside the hot zone) and volunteers, including those in remote locations. Sets up and breaks down refreshment stations for responders outside the hot zone.

Skills Required: Experience in the food industry/catering preferred. Current State Food Handler's Permit required. Must be able to lift 35 lbs. All driving responsibilities require current driver's license, clean driving record, and proof of insurance (if personal vehicle is used).

Training Required: Workplace Health and Safety, Site Safety.

Housing/ Lodging Assistant

Works with the Facilities Unit of the Logistics Section to identify housing for volunteers; receives housing requests; procures and distributes housing materials (sleeping bags, blankets, tents), if necessary; makes housing assignments and maintains expense records related to housing.

Training Required: 2-Hour Workplace Health and Safety, Site Safety.

Information Management Assistant

Coordinates and insures adequate information technology is provided for volunteer management. Oversees operation of phone bank. Matches volunteers to volunteer agencies in conjunction with the interviewer and Scheduler/Time Card Assistant. Works with the Communications Specialist and File Clerk/ Office Assistant. Ensures the utilization of data entry procedures to expedite information-sharing.

Skills Required: Knowledge of information management technologies. Familiarity with computers, job-related applications, and phone skills.

Training Required: 2-Hour Workplace Health and Safety, Site Safety.

Interpreter

Interprets/translates within the Volunteer Unit as needed. May assist the UC.

Skills Required: Credentials from an organization such as the American Consortium of Certified Interpreters preferred, but not necessary. Ability to speak, read, and write applicable languages preferred.

Training Required: 2-Hour Workplace Health and Safety, Site Safety.

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Interviewer

Works with the Volunteer Unit, processing volunteers who arrive in the area or persons referred to the Volunteer Unit by a local agency; establishes rapport with prospective volunteers to appropriate tasks or jobs based on their experience and current volunteer job needs in the response effort.

Training Required: 2-Hour Workplace Health and Safety, Site Safety.

Liaison Chief

Serves as a contact point between the Volunteer Officer, Volunteer Coordinator, or Volunteer Unit Leader and agencies in need of volunteers. Distributes Volunteer Request Forms to entities that may request volunteers. Relays requests for volunteers to the Volunteer Officer, Volunteer Coordinator, or Volunteer Unit Leader. Works with the Interviewer to determine volunteer placement, the Orientation and Training Coordinator to ensure applicable training, and the Scheduler/Time Card Assistant to determine volunteer availability. Provides copies of Volunteer Request Forms to the Documentation Unit Worker.

Skills Required: Must be detail-oriented with good communication skills and possess a strong command of the English language.

Training Requirements: 2-Hour Workplace Health and Safety, Site Safety, IS100 and IS 700.

Medical Unit Worker

Works with the Safety Officer Assistant and the Medical Unit Leader in the Logistic Section. Responsible for developing the Volunteer Medical Plan, procedures for managing medical emergencies, providing medical aid when necessary, and assisting Finance/Administration with processing injury-related claims. Work as a First Aid Responder dispatcher. Transports sick or injured personnel. Provides copies of all signed volunteer injury-related documentation to the Documentation Unit Worker.

Skills Required: Current First Aid and CPR Certification. Must be able to lift 35 lbs. Certified Emergency Medical Services Technicians preferred. Automated external defibrillator training preferred. All driving responsibilities require current driver's license, clean driving record, and proof of insurance (if personal vehicle is used). Experience in hospital administration or a related field preferred.

Training Required: 2-Hour Workplace Health and Safety, Site Safety, IS100 and IS700.

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Orientation and Training Coordinator

Upon receipt of volunteer placement information from the Interviewer, ensures all training requirements are fulfilled. Receives signed Volunteer Waiver and Release of Liability Forms. Coordinated training and orientation sessions with the help of the Training Assistant. Ensures all Health and Safety requirements are met. Provides copies of all signed training documentation and Release of Liability Forms to the Documentation Unit Worker.

Skills Required: Knowledge of applicable laws, regulations, and training requirements. A working knowledge of the Volunteer Plan (can be trained on-site). Must be detail-oriented with good communication skills and possess a strong command of the English language.

Training Requirements: 2-Hour Workplace Health and Safety, Site Safety, IS100 and IS700.

Personnel Support

Provides messages and other general coordination support activities for responders and volunteers such as doing laundry.

Training Required: 2-Hour Workplace Health and Safety Site Safety.

Photographer

Provides photographic coverage of the incident for data collection, historic documentation, and future training purposes.

Skills Required: Experience with still photography and/or handheld video photography is required. Experience with photographing wildlife, preferably in documentary and fast action settings is desirable.

Equipment Required: Personal photographic equipment.

Training Required: 24-Hour HAZWOPER, Site Safety.

Public Information Assistant

Responsible for the formulation and release of information of volunteer activities to the PIO. Prepares volunteer press releases as needed. All press releases must be approved through the UC and the PIO before being released to the public. Organizes materials for use in media briefings/ press releases. Provides all press releases to Documentation Unit Worker.

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Skills Required: Experience in communications, journalism, or public relations with project leader responsibility preferred. Strong written and oral presentation skills.

Training Required: 2-Hour Workplace Health and Safety, Site Safety, IS100 and IS700.

Pre-Impact Beach Cleanup/Surveillance

Conducts pre-impact shoreline debris removal (removes non-oiled debris and trash prior to oiling). Patrols outside the known hot zone for potential strikes. Volunteers are to report stranded or free-floating oil to the Safety Officer Assistant and leave the area immediately. Volunteers are not allowed in the hot zone. Works as a field observer, including beach conditions and weather surveillance. Relays information concerning oiled wildlife and hazing effectiveness to wildlife services.

Skills Required: Must be able to lift 35 lbs. Experience in oil and storm-spotting preferred.

Training Required: Site Safety, 4-Hour HAZWOPER Awareness Level.

Receptionist

Greets personnel arriving at ICP and directs them through the processing stages.

Training Required: 2-Hour Health and Safety, Site Safety

Runner/Courier

Shuttles messages and materials among incident locations, such as between the ICP to other spill response sites.

Skills Required: Must possess a valid driver's license, clean driving record, and proof of insurance.

Training Required: 2-Hour Workplace Health and Safety, Site Safety.

Safety Officer Assistant

Works with the Medical Unit Worker(s) and Safety Officer. Assists in developing Site Safety Plans. Ensures proper PPE distribution through the Supply Assistant. Ensures volunteer adhesion to both the Medical Plan and the Site Safety Plans. Ensures Volunteer Emergency Action Plans are completed and readily available. Ensures volunteers know how to report injuries. Documents volunteer injuries.

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Addresses safety concerns. Provides copies of volunteer signed documentation to the Documentation Unit Leader.

Skills Required: Familiarity with the Medical Plan, Emergency Action Plans, and Site Safety Plans. Excellent writing and organizational skills. Current first aid and CPR certification preferred. Experience in a safety-related field desirable.

Training Required: 2-Hour Workplace Health and Safety, Site Safety, IS100 and IS700.

Scheduler/Time Card Assistant

Assures maintenance of sign-in and sign-out records for volunteers and responders; ensures that all volunteers and responders on site are properly cleared and trained (and are not exceeding scheduled hours, in accordance with the UC guidance); develops and monitors scheduling to ensure that sufficient volunteers are on hand at all times, according to the needs of the sites, facilities and staff.

Training Required: 2-Hour Workplace Health and Safety, Site Safety

Supply Assistant

Assists with identification of logistical requirements with issue and control of personal equipment and supplies to volunteers and potentially responders.

Skills Required: Experience in ordering, issuing, stocking, accounting for, maintenance, and recovery of equipment and supplies from user personnel.

Training Required: 2-Hour Workplace Health and Safety, Site Safety.

Technical Support Specialist

This position is opened only upon request from the Scientific Support Coordinator (SSC) or Environmental Unit Leader. Supports the SSC. Identifies environmentally sensitive areas, species of concern, and pertinent cultural/historical resources. Provides GIS/mapping and computer support, weather forecasts, and current and tide data to help determine spill trajectory, fate, and impacts.

Skills required: Must have extensive knowledge of area and applicable tasks. The SSC will determine additional skills needed.

Training Required: 2-Hour Workplace Health and Safety, Site Safety, IS100 and IS700. Additional training is task-specific and to be determined by the SSC

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Traffic Monitor

Oversees site access points to ensure only authorized persons enter, ensures habitat protection.

Training Required: 2-Hour Workplace Health and Safety, Site Safety.

Training Assistant

Coordinates required trainings, arranges for class presentations by trainers, oversees audiovisual equipment and programming, schedules volunteer training sessions.

Skills Required: Excellent organizational and communications skills.

Training Required: 2-Hour Workplace Health and Safety, Site Safety.

Transportation Assistant

Works with the Transportation Unit of the Logistics Section to determine volunteer transportation needs including frequency, routing, and type of transportation (car, van, truck, commercial shuttle, bus); determines volunteer drop-off and pick-up schedules for multiple sites; coordinates and verifies appropriate volunteer driver authorizations; monitors vehicle condition and maintenance among vehicles assigned to volunteer use, in accordance with the guidance of the UC and maintains appropriate vehicle use records.

Training Required: 2-Hour Workplace Health and Safety, Site Safety.

Volunteer Supervisor

Monitors volunteers to ensure they are following health and safety practices.

Training Required: 2-Hour Workplace Health and Safety, Site Safety, additional trainings may apply depending on volunteer supervisory assignment. At a minimum the Volunteer Supervisor must be trained at or above the level of the volunteer workforce being supervised.

Wildlife Notification

See Pre-Impact Beach Cleanup/Surveillance. As part of beach control activity, volunteers may be used to notify wildlife services, USFWS and LWLF of injured wildlife and hazing effectiveness. Volunteers are not allowed to handle or transport wildlife without proper certification. Urges public to avoid areas and wildlife that are affected as untrained people can cause further damage to the environment and stress on wildlife.

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Skills Required: Experience with wildlife and background in the natural sciences preferred.

Training Requirements: Site Safety, 4-Hour HAZWOPER Awareness Level

Wildlife Recovery and Rehabilitation

Wildlife recovery and rehabilitation organizations generally manage their own database of trained volunteers that operate outside the scope of this plan. Therefore, volunteers in this area are only utilized if wildlife services exhaust resources. Approval from the USFWS and LWLF and the lead wildlife response organization is needed before volunteers are assigned any position in wildlife recovery, rehabilitation, or release. Volunteers are not allowed to handle or transport wildlife without proper certification.

Wildlife Rehabilitation Facility Maintenance Specialist

May include carpentry, air conditioning, plumbing, welding, and electrical support to the wildlife rehabilitation facility as requested. Involves pool/cage construction and maintenance. Volunteers are not allowed to handle or transport wildlife without proper certification

Skills Required: Skills applicable to maintenance task. Must be able to lift 35 lbs.

Training Required: 2-Hour Workplace Health and Safety, Site Safety.

Wildlife Rehabilitation Facility Support Specialist

Cleans animal pens and holding areas. Moves and cleans equipment as needed. Prepares food and feeds wildlife. Volunteers are not allowed to handle or transport wildlife. Washes vehicles, washes and folds towels used for drying animals, and cleans and disinfects carrying cages and other animal capture and transport equipment following decontamination. Follows established protocols.

Skills Required: Experience with wildlife and background in the natural sciences preferred. Custodial experience preferred. Must be able to lift 35 lbs.

Training Required: Site Safety, 4-Hour HAZWOPER Awareness Level

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Use of Volunteers within Specific ICS Units

Location of VOLUNTEER JOB *Noted with a C if appropriate for Convergent Volunteers	Task	Training
Logistics Branch		
C	Inventory Control Photocopying, filing, clerical support Distribution of PPE, equipment, supplies Construction of support structures	2-Hour Workplace Health and Safety, Site Safety Unless otherwise noted in Job Description
Transportation Unit		
C	Driver (Carpools, Trucking) Scheduling Dispatching Runner	2-Hour Workplace Health and Safety, Site Safety Unless otherwise noted in Job Description
Interpretation		
C	Language translation (this will fall into any function needing language support)	2-Hour Workplace Health and Safety, Site Safety
Medical Assistance Unit		
C	Inventory and delivery of medical supplies First Aid Responder	2-Hour Workplace Health and Safety, Site Safety Unless otherwise noted in Job Description

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Personnel Services Unit		
C	Housing Assistant Laundry Services	2-Hour Workplace Health and Safety, Site Safety
Public Information Unit		
C	Receptionist Volunteer registration, scheduling coordination Photocopying, filing, clerical support Media monitoring, recording, Web searches Community door to door distribution	
On-Scene		
C	On-Scene Support, Driver, First Aid Responder, Volunteer Supervisor, and Traffic Monitor	See specific Job Description. At minimum 2-Hour Workplace Health and Safety, Site Safety. If operating in the warm or hot zone shall have the 24-Hour HAZWOPER
Shoreline Cleanup		
	Clean-up of non-oiled debris and materials prior to oil impact ONLY Beach Patrol/Wildlife Notification See below for information on utilizing volunteers for shoreline clean-up.	2-Hour Workplace Health and Safety, Site Safety, 4 Hour HAZWOPER

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Use of Volunteers for Shoreline Cleanup

Volunteers will not be automatically be used for shoreline cleanup. The benefit of volunteer efforts must be weighed against concerns for public safety.

Based on the conditions specific to that incident the UC will determine the suitability of employing volunteers for shoreline cleanup missions. When considering the use of volunteers of federally administered lands, the FOSC will consult with and gain the concurrence of the cognizant Federal Lands Manager prior to the use of volunteers on Federal Lands.

In reviewing the potential use of volunteers in shoreline clean-up mission the UC will consider the following factors:

- Primary safety hazards (volume, exposure potential, size type, and toxicity of discharged oil)
- Secondary safety hazards (sneaker waves, tides, visibility, slips/falls)
- OSHA guidance
- Possible clean-up locations
- Logistics and administrative support requirements (Training, PPE, Multi-jurisdictional coordination, public information)
- Local government desire to manage volunteers (including recruiting, administering, training, deployment, recovery/decontamination)
- Weather/tidal conditions

Volunteer Training Courses

Volunteers will be given appropriate training before being assigned. Training must be current. Any prior volunteer HAZWOPER training shall be renewed with new oil spill training sessions to satisfy a current oil spill volunteer response. This may cause delays in assignment if the volunteer has to be trained at the spill site, but it will avoid needless injuries. Volunteers must be trained to perform the tasks they are asked to do. An inexperienced and untrained volunteer will not be assigned to perform a task requiring training and/or experience.

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24-Hour HAZWOPER

Is for volunteers identified prior to a spill who will back up the Wildlife Rehabilitation Unit capturing oil birds and mammals. They would be in the hot or warm zone, within permissible exposure limits. The Wildlife Rehabilitation Unit has been given primary responsibility for capture and care of oiled wildlife; therefore, other volunteers will be called only when the capacity of the Wildlife Rehabilitation Unit is exhausted.

8-Hour HAZWOPER

Is required for volunteers who have had the 24 hour training, but need an annual refresher to be current. The Office of Oil Spill Prevention and Response will provide refresher training for a pre-determined number of volunteers who are identified as Wildlife Rehabilitation Unit back-up.

4-Hour HAZWOPER

If the supply of 24-Hour HAZWOPER trained volunteers is exhausted and more are needed to back-up the Wildlife Rehabilitation Unit at an incident, a 4-Hour on-scene HAZWOPER training will be given to non-24-Hour trained volunteers. Individuals trained at the 4-Hour level may use this training only once, at a single incident. If the individual finds that they may need to attend future spills, this person must secure training at the appropriate level.

4-Hour Hazard Communications (HazCom)

For volunteers who could be a back-up in a rehabilitation facility. There is no refresher. The volunteer cannot be in the warm or hot zone. The 4-Hour HazCom includes:

- Fundamentals of Toxicology
- Chemical/physical properties of petroleum products
- Physical Hazards (noise, thermal, lifting safety, slips, trips, and falls, and electrical safety.)
- Biological Hazards (zoonotic diseases, soil/water borne diseases, alligators, snakes, spiders and insects of concern)
- Personal protective equipment (boots, gloves, work suits, safety glasses, and hearing protectors).
- Decontaminations of personnel and equipment

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- Reporting injuries (worker compensations forms and deadlines)

2-Hour Workplace Health and Safety Training

This training will be conducted onsite for volunteers who will be working in the support zone (will not be in the warm or hot zone). The 2-Hour training includes:

- Physical Hazards (safe lifting, slips, trips, and falls; general office ergonomics, general electrical safety).
- Chemical hazards (toner, disinfectants, rubber cement, etc.)
- Safe Driving
- Rest breaks/replacement for exhauster workers
- Reporting of injuries, worker compensations forms and deadlines.)

Site Safety

This training is to orient the volunteers of specific hazards at the site of the spill.

Wildlife Rehabilitation Facilities

USFWQ and LWLF have Memorandums of Understanding with various wildlife rehabilitation facilities statewide. USFWS and LWLF will contact licensed rehabilitators and participate in the identification of rehabilitation supply needs. These facilities clean and rehabilitate oiled animals captured by the aforementioned entities. Wildlife rehabilitation organizations not recognized by USFWS and LWLF are not viable responders, and therefore irrelevant to volunteer activities. Rehabilitators and trained personnel working with them (those named in their permit) are the only persons permitted to collect and rehabilitate oiled wildlife.

Policy Regarding Donations

The Volunteer Unit does not accept donations.

Press Releases

The example press release contained in this plan is to be revised to accommodate each specific incident and issued through the PIO. As an incident

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and the status of volunteer utilization changes, the Volunteer Officer, Volunteer Coordinator, or the Volunteer Unit Leader prepares additional press releases and presents them to the UC and the PIO or JIC Manager for approval for editing and distribution to the media.

Demobilization and Debriefing

As the need for volunteers winds down, the UC will de-activate the Volunteer Unit. As activities subside at the Volunteer Unit the Volunteer Officer, Volunteer Coordinator, or the Volunteer Unit Leader will manage ongoing volunteer operations. Final duties for the Volunteer Unit staff should include coordinating debriefing opportunities for volunteers, as well as any follow-up recognition that local governments or the State/province would like to provide to citizens who volunteered their time and energy in the response.

Guidelines on Personal Protective Equipment

This list identifies the suggested minimum PPE for volunteers. A basic assumption is that the atmosphere is safe to breathe and work in; therefore respiratory protection is not necessary. The primary hazards encountered during response activities for a coastal area are slips, trips, and falls.

- Suggested minimum PPE:
 - Impermeable jacket, pants, and gloves
 - Safety boots that may be cleaned and reused (Hazmat over-boots may be used over shoes)
 - Eye protection (goggles)
 - Head protection (hard hat)
- NOTE: Expect to dispose of gloves, overboots, and synthetic coveralls after each days use.
- Other PPE to consider depending on site, environmental conditions, extent of duties, and nature of work:
 - Chest waders
 - Day-glow vest
 - Ear plugs
 - Heavy fabric work gloves
 - Personal flotation device (life jacket)
 - Safety glasses or face shields

Volunteer ICS-204

5. Operations Personnel							
Operations Section Chief				Divison/Group Supervisor			
Branch Director				Supervisor Number			
6. Resources Assigned							
ST/TF/Single Resource	Leader	# of Persons	Trans. Needed	Drop Off PT/Time	Pick Up PT/Time		
Logistics Unit							
Transportation Unit							
Food Preparation							
Medical Assistance							
*Shoreline							
Personnel Services							
Public Relations							
7. Control Operation <i>01 Safety Officer per 10 volunteers</i>							
8. Special Instructions <i>Volunteers will NEVER be in contact with potential contaminants or pollutants.</i>							
9. Division/Group Communication Summary							
Function	System	Channel	Frequency	Function	System	Channel	Frequency
Command				Support			

Volunteer Request Form

Date/Time: _____
Requesting Organization/ Agency/Unit: _____
Name of Contact: _____ Phone: _____ Fax: _____

VOLUNTEER NEEDS

Total Number of Volunteers Needed: _____
Job Title/Description: _____

Duties	Experience/ Skills	Training Provided?

Equipment/Special Clothing Needs: _____
Description of Training to be Provided: _____
Job Location: _____
Date/ Time Volunteers Needed: _____

Please Check if Available: _____ Restrooms _____ Parking
 _____ Safety Equipment _____ Telephone
 _____ Transportation to Work Site

Volunteer(s) should report to the following person for additional training/instruction: _____
Name: _____ Phone: _____ Fax: _____
Location: _____

For Office Use Only

Follow up date & time: _____
Follow up action: _____
Position(s) filled? _____
Volunteer Name(s): _____

Sample Volunteer Press Release *

(City Name) –In response to the approximate ____ -gallon oil spill in/at _____, the Unified Command has activated the Volunteer Hotline #: 800-XXX-XXXX. Hotline staff will record the caller's name, telephone number, availability, and applicable skills or training. The caller will be informed if or when volunteers will be utilized for spill response and briefed on other event-specific information as needed.

Federal, State, and local government s have determined what tasks are appropriate for volunteer effort, have identified and pre-trained an existing group of volunteers statewide, and have developed a system to activate those volunteers. The system will be activated if the Unified Command at the spill decides that volunteers are needed for the response effort. At that time a volunteer operations center will be established. If additional volunteers are needed, the hotline listing will be publicized through the news media.

The public is advised to stay away from the spill site, as their presence can hamper clean-up efforts and increase danger factors. Oil is a hazardous material, and to work in or near the oil, one is required to complete 8 to 40 hours of training in Hazardous Waste Operations and Emergency Response (HAZWOPER). Additionally, for the safety of both the public and animals, only trained wildlife specialists should attempt to handle oiled wildlife.

The public can help at this by reporting any oiled animals to the Oiled Wildlife Hotline #: 800-XXX-XXXX (not the volunteer hotline #). Trained professional entities that focus on individual oiled animals and their survival after an oil spill will be notified. Modern technology, properly equipped facilities, and new rehabilitation protocols standardize care throughout the State, increasing wildlife survival rates. Wild animal's survival rates increase with a decrease of human contact.

Please call the Volunteer Hotline number for frequent updates.

* All press releases must be approved by the Unified Command/PIO before statements are released to the media/public.

Volunteer Timesheet

Volunteer Name: _____

Telephone Number: _____

[illegible]

Supervisor Signature: _____

Volunteer Operations Center (VOC) Guidance

Establishment

In setting up the VOC, the Volunteer Officer/Coordinator/Unit Leader should consider the following:

- Arrange space to allow for foot traffic and to maximize wall space.
- Face tables and chairs so that information can be viewed easily.
- Allow enough space, pens, clipboards, etc. so that volunteers can fill out registration materials.
- Clearly identify the reception desk/area.
- Provide seating.
- Post signs directing potential volunteers to the building/room.
- In the event of a large spill response where sufficient staffing is available at the VOC and volunteer needs are extensive, set up stations for each major class of work, such as:
 - Administration/Clerical
 - Wildlife Rehabilitation Center
 - Pre-impact Beach Cleanup/Surveillance
 - Logistical
 - Technical
 - Medical
 - Public Relations
- Assign early volunteers as couriers, bringing information about volunteer needs from the ICP to the VOC.
- Set aside time and space for training and orientation.
- Set up an information bulletin board. This area may serve as an informal information and referral area.

Early volunteers should be used to supplement staffing of the VOC. Early staffing needs at the VOC include (see Volunteer Assignments for more details):

- Receptionist
- Administrative Coordinator/Officer Manager
- Driver

- Interviewer
- Communications Specialist
- Information Management Chief
- Liaison Chief
- Medical Unit Worker
- Orientation and Training Coordinator
- Public Relations and Community Liaison
- Safety Officer Assistant
- Scheduler/Time Card Assistant
- Volunteer Supervisor
- Runner/Courier

Volunteers arriving on scene that have not first checked in must be referred back to the VOC for assignment.

Recommended Equipment Set-up (adjust according to size and scope of operation):

- Waiting area- any couches or comfortable chairs available, locate near entrance.
- Reception Station- Near entrance, 1-2 tables, 3 chairs.
- Registration Station- 2-3 rectangular tables, 6-8 chairs.
- Volunteer Officer/Coordinator/Unit Leader's Desk- a desk or small table, 2 chairs
- **Orientation and Training Station- One rectangular table or two small tables, 3-4 chairs**

VOC Equipment and Supplies List

Many of the following items can be gathered prior to an incident and kept in a "Go-Kit" ready to deploy upon activation. It is especially helpful to have copies of all the necessary forms for registering and placing volunteers so they are organized and ready to go. "Go-kits" can also contain basic office supplies, local maps, cellular phones, and any other items useful for beginning operations.

- Guidelines on PPE
- Volunteer Timesheets

- Volunteer Waivers and Release of Liability
- Authorization to Use Private Vehicle Forms
- Volunteer Registration Forms
- HAZCOM training course description
- Emergency Action Plan training description
- HAZWOPER training course descriptions
- Workplace Health and Safety training description
- ICS course descriptions
- Volunteer Position Descriptions
- Volunteer section of ACP
- Local maps
- Poster board and large marker pens (for signage)
- Clipboards
- Pens and pencils
- Folder and labels
- Stapler, paper, staplers, pencil sharpener, tape, scissors, post-it notes, push pins, etc.
- Spiral notebooks (to create logbooks)
- Duct tape
- Fax machine
- Phones and phone lines
- Printers
- Copier
- Computers
- Bulletin boards
- Cellular phones
- Several large tables and chairs to set up stations for medium to large-scale operation
- Volunteer Instructions

Sample Volunteer Registration Form

If this document is retained and filed by a federal agency, do NOT file by name or other personally identifiable information of the volunteer. Doing so may be a violation of the Privacy Act, 5 U.S.C. 552a.

Volunteer Registration Form

Name: _____ Date: _____

Phone (day): _____ (eve.) _____ (fax): _____

E-mail: _____

Address: _____

Age (must be over 18): _____

Present employer: _____ Occupation: _____

Availability: _____

Do you have a current Driver's License? _____

Are you affiliated with any response organization/volunteer group? If so, which?

Are you in good health and not pregnant? _____

Do you suffer from any heart or respiratory condition? _____

Are you able to lift 35 lbs? _____

Health Insurance Provider/Contact information: _____

Do you speak any language other than English? _____

Are you certified in any of the following? Certification Type/Agency* Exp. Date

Bird Rescue/Rehab.: _____

Hazmat/HAZWOPER: _____

First Aid/CPR: _____

Coast Guard licenses: _____

ICS Training: _____

Other training/experience: _____

Oil spill experience: _____

Placement Preference:

Wildlife Rehabilitation Center _____

Pre-impact Beach Cleanup/Surveillance _____

Administrative/Clerical _____ Basic Needs/Logistics _____

Technical _____ Mechanical _____ Public Relations _____

Other: _____

Geographic area preference: _____

Emergency Contact

Name: _____

Phone (day and eve.) _____

Address: _____

Signature: _____ Date: _____

Printed Name: _____

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Joint Information Center Manual

Introduction

This guide is designed to help communicators during response to environmental emergencies that do or may occur in the Southeast Louisiana Area Committee's area of responsibility. In recognition of the National Response Plan, Emergency Support Function #15- External Affairs Annex is included in the Resources Section. This JIC Guide is based on and draws heavily from the Nation Response Team (NRT) JIC Model.

National Response Plan, Emergency Support Function #15- External Affairs Annex:
<http://www.fema.gov/pdf/emergency/nrf/nrf-esf-15.pdf>

Incident Management System

Functional Units

The Southeast Louisiana ACP requires the use of the National Incident Management System to manage environmental emergencies. The organization of incident management is built around five major functions, including:

Command

Command sets objectives and priorities; has overall decision-making responsibility. The Information Officer and the Liaison Officer are appointed by and report directly to the Incident Commander.

Operations

Operations conduct tactical operations to carry out response; develop tactical objectives and directs all resources.

Planning

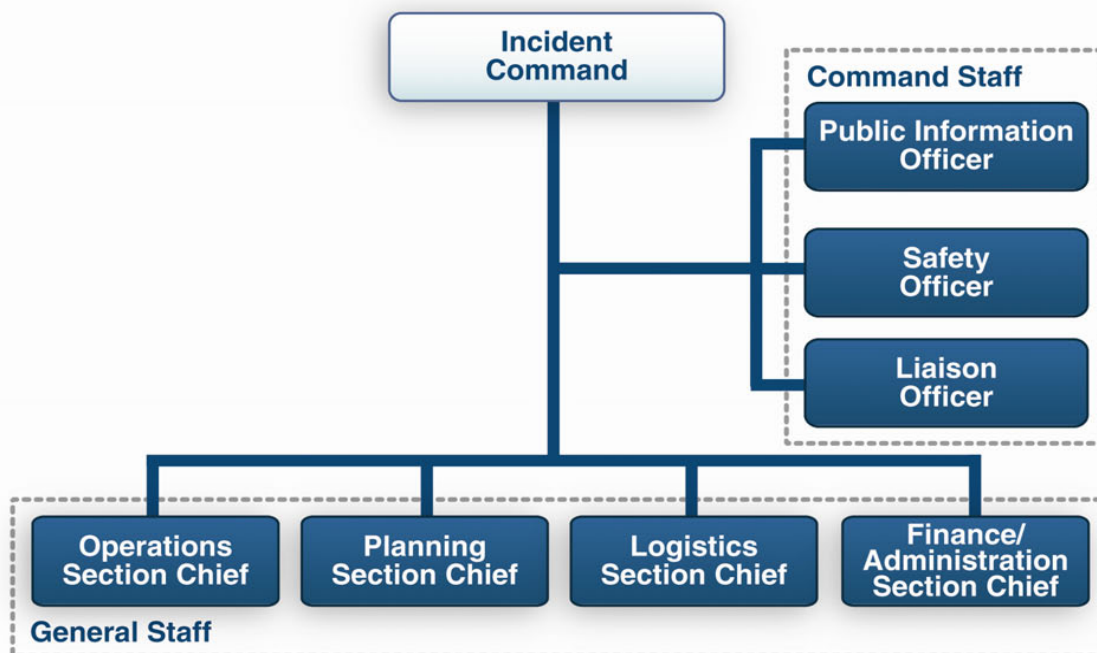
Planning develops plans to accomplish objectives; collects, evaluates, and provides most incident information; maintains resource status.

Finance/Administration

Finance/Administration monitors and analyzes costs; provides accounting, procurement, and time recording.

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Mandates

Certain federal laws require incident response to be managed or co-managed by a Federal On-Scene Coordinator (FOSCR) for the U.S. Environmental Protection Agency (EPA) or the U.S. Coast Guard (USCG) and, in some cases, the U.S. Department of Defense (DOD) or the U.S. Department of Energy (DOE). In addition, some of these laws grant broad legal authorities to the Federal On-Scene Commander.

Individual state mandates also contain requirements for designation of a State On-Scene Coordinator. For certain types of incidents, on-scene coordination may be delegated from a federal agency to a state counterpart. Federal on-scene coordination using ICS is required under these mandates or programs:

- National Oil and Hazardous Substance Pollution Contingency Plan;
- Comprehensive Environmental Response, Compensation, and Liability Act;
- Oil Pollution Act;
- Clean Water Act; and

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- Occupational Safety and Health Act.

Unified Command

When multiple organizations are involved in response, a Unified Command (UC) is established and may be composed of up to five on-scene coordinators, on each representing federal, state, tribal, and local jurisdictions, and the responsible party, if known. A Joint Information Center (JIC) is activated when the UC model is used.

Joint Information System

In response to most “routine” or “minor” environmental incidents, public information activities are carried out by the lead response agency, in coordination with other organizations. In these cases, the lead Information Officer usually conducts activities from the office or another remote location, as directed by the Incident Commander, via phone and e-mail with agency counterparts. Early notification and coordination includes timely review of draft news releases and other materials, and collaboration to determine other information needs.

Public Records

Most information (with the exception of information about active enforcement, investigations and security sensitive matters) collected, generated, or distributed during incident response is part of the public record and can be potentially released to the media and public if requested. All response personnel should adhere to these public trust responsibilities and ensure that copies of all documents are maintained and submitted daily to the Documentation Unit.

Initial Information Officer- Pre-JIC

When an incident occurs, there is high demand for quick information. Public perception is often shaped by impression formed in the first few hours of response.

When a state environmental or emergency management agency, the Coast Guard or the EPA first learns about a spill, the respective Information Officers should quickly contact one another to share information in an effort to release a joint media statement. The goal should be to get this first release issued within 30 minutes of the initial notification and no longer than two hours after notification is received.

Until a JIC is established, communication with the media and other key audiences is carried out by a lead agency’s information office, either remotely or on-site. This Initial Information Officer carries out activities with or without assistance. The time needed to travel to the command post and have basic JIC operations in place will affect decisions about how and by whom communications are conducted. For example, issuing the initial news release within 30 to 120 minutes of notification may require that facts be provided

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over the phone or electronically to an agency Information Officer operating from the office of a remote location.

The Initial Information Officer is concerned with both communications (who to communicate with, both media and public) and logistics (how to communicate), if operating from the command post or remote locations.

In order to build trust with the public and among agencies responding to the incident, every press release should include a “cooperative response statement.” This statement should include, by name, all the primary participating agencies responding to the spill incident.

Activities of Initial Information Officer

The following activities include tasks an Initial Information Officer should accomplish within the first 24 hours of an incident response to set up a functional JIC:

- Share latest information immediately with other lead agencies;
- Sign in and receive necessary identification or clearance if operating on-scene (consider having the federal Transportation Worker Identification Credential (TWIC) card;
- Make contact with the Incident Commander or Unified Command;
- Obtain objectives for the response;
- Establish a dedicated phone line, e-mail address and Website, is possible, for inquiries from the media;
- Gather basic facts about the incident- who, what, when, where, how;
- Make contact with the Situation Unit Leader and Environmental Unit Leader for incident information;
- Draft, spell-check, and proofread news releases and information released to a Website;
- Obtain, review, and approve all news releases and Web information by Incident Commander or Unified Command;
- Proofread and finish release. (If significant changes are made, the release must be re-approved by the Incident Commander or Unified Command);

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- Obtain approval for fact sheets and Web-based information;
- Attach or post fact sheets, photographs, video footage or other information if relevant to the incident;
- Distribute initial news release to media, affected agencies, and other audiences within 30 minutes whenever possible, but no later than two hours;
- Contact other local agency communicators for assistance/information about their community;
- Respond to media calls and other requests for information;
- Conduct media interviews;
- Begin to develop a media plan, setting the next time and place for updates, briefings, news conference, etc. This should be closely coordinated with the Incident Commander and the Planning Section Chief;
- File copies or create a log of callers, time of calls, questions, and responses;
- Find answers to questions by media or key audiences;
- Brief the next shift of Information Officers; and
- Assess the need for community relations personnel.

Joint Information Center

A Joint Information Center (JIC) is created under the Unified Command to effectively manage communication resources and public message when multiple organizations are involved in incident response. The need to form a JIC is determined by the Incident Commander or Unified Command as advised by the incident Information Officer. Ideally, a JIC should be located in or near the incident command post and staffed by personnel from the participating organizations. If the JIC is located in the command post it is imperative any media representatives present be given an adequate work space that is physically separated from working Command and General Staff personnel. Satellite JICs may be needed for response to major incidents involving large geographic areas.

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Primary JIC Objectives

- Gather, package, and distribute accurate information and data in a timely manner;
- Inform the public, primarily through the news media and a dedicated Website;
- Analyze public perception and community expectations; and
- Evaluate communications.

Overall JIC Objectives

- Gather, analyze, produce, and distribute information about the incident;
- Ensure timely release of accurate information to media and other audiences;
- Establish and maintain the official incident Website;
- Review, for approval or revisions, any public information developed in response to the incident by other agencies;
- Capture digital images in video and photos for use by response organizations and media;
- Develop, recommend, and execute public information products, plans, and strategies;
- Coordinate closely with the Liaison Officer;
- Monitor and measure media content and public perception of the incident;
- Inform the Incident Commander/ Unified Command regarding public reaction, attitudes, and needs;
- Prepare appropriate response personnel for news conferences and interviews;
- Identify and correct rumors and misinformation;
- Evaluate response communications when the JIC is deactivated; and
- Produce a log and organize all JIC materials for distribution to the Documentation Unit each day.

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JIC Set-up and Logistics

A Logistics Section staff member, in consultation with local community leader(s) or state emergency management agency, may help select a location for and set up the JIC. A dedicated Information Technology Specialist may also be recruited. JIC spaces should:

- Be located in or as near the command post as possible;
- Be large enough to accommodate the anticipated number of JIC personnel and the Liaison Officer, is possible, working in a given shift;
- Have adequate numbers of tables, chairs, and AC outlets or power strips approved within fire codes;
- Accommodate a phone bank with dedicated lines and computers connected to the internet; and
- Provide quick access to printers, copier(s), fax, and e-mail.

Two things are needed immediately:

- A phone- if landlines are initially scarce, consider using a dedicated landline to take incoming calls from media and use cell phones to call out; and
- A computer with necessary software, printer, and internet capability, Electronic distribution of news releases can be handles by the JIC or by an office of a participating agency.

JIC Deactivation

The Incident Commander/Unified Command, with advice from the Information Officer (PIO), determined when to deactivate the JIC. When deactivating a JIC:

- Notify community and local officials about closing and provide regional contact information;
- Notify media and agency communication managers about closing and provide regional contact information;
- Prepare comprehensive deactivation news release for lead-agency headquarters approval and distribution;

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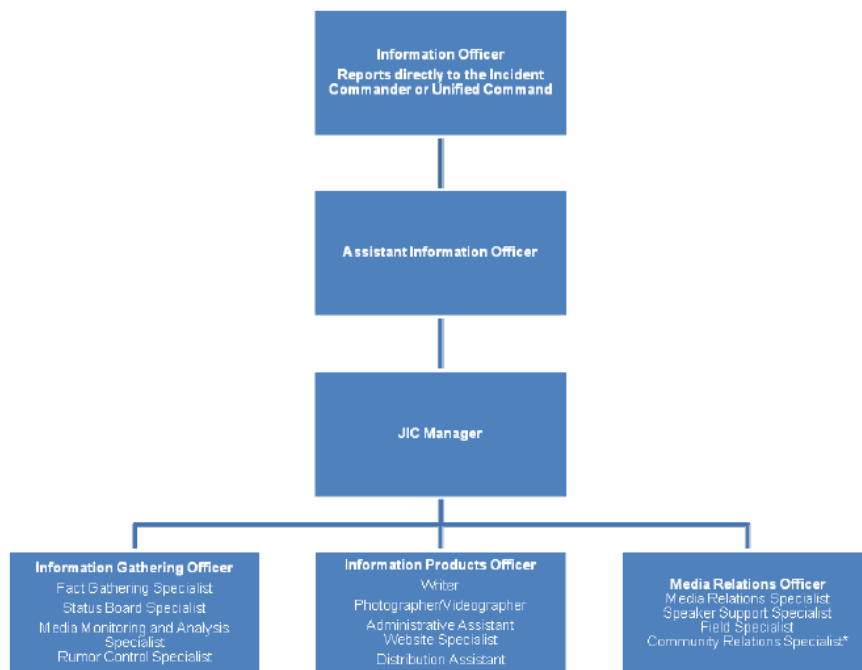
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- Provided casebooks to communications managers whose organizations will assume responsibility for ongoing information;
- Complete after-action report and participate in evaluation discussions;
- Return equipment and supplies;
- Update list of equipment and supplies; and
- Inventory and replenish “got kits”.

JIC Organization, Positions, and Responsibilities

JIC Organization

A JIC is flexible organization that can expand or contract, depending on the incident and number of available personnel. Staff within the JIC may be assigned to fill different roles from day to day, depending on priorities. While no two JICs are structured exactly the same, they should generally operate with key functional units filled by one or more personnel.



*An incident may require a significant community relations effort. In these cases, a separate Community Relations Unit should be formed.

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Incident Information Sources

The Situation Unit within the Planning Section generates and coordinates nearly all incident information. JIC personnel should review the job description found in the Field Operations Guide for Resource Unit Leader, Situation Unit Leader, and Environmental Unit Leader and be familiar with the information these groups can provide the JIC. A schedule must be established for information updates from these groups each day that conforms as closely as possible to the Planning Cycle established by the Planning Section Chief. Determine what visual materials or displays you will need for a press conference, work with the Situation Unit Leader to produce maps, or order display needs from the Logistics Section.

Examples of displays include:

- Base Maps- used in the field by field observers; these depict where the oil is, from a ground perspective, and where workers are;
- Over Flight Map- used during over flights and depict where oil and equipment actually are located;
- Resource Status Map- depict where majority of response resources are operating;
- Situation Maps- depict where the oil is located; also depict various Geographical Response Plans (GRPs) in the area, staging areas, command post, and other relevant materials;
- Natural Resources at Risk and Protection Strategy Maps- show where natural, cultural, and economic resources at risk are located and activities being done to protect them;
- Trajectory Maps- depict where the National Oceanic and Atmospheric Administration (NOAA) think the oil will go over time;
- Road Maps-depict road closures;
- Nautical Charts; and
- Digital Photographs and/or Video.

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Information Officer (IO)

The Southeast Louisiana Area Committee prefers that the responsible party not fill the IO position. This applies to both government agency and private industry responsible parties. However, the RRT and Southeast Louisiana Area Committee recognizes that the Unified Command holds the discretion to fill the position with whomever they choose. Unified Command should consider credibility with the media and public, as well as previous experience in drills or spills, familiarity with the Southeast Louisiana Area Committee and policies within Emergency Support Function #15. Upon concurrence of the Unified Command, the responsible party may fill the IO position.

The Southeast Louisiana Area Committee encourages responsible parties to designate as Assistant Information Officer (see below) to participate in meetings attended by the IO and to be present during briefings by the IO or delegate.

The IO is appointed by and reports to the Incident Commander or Unified Command. The IO should be trained in ICS, be familiar with the Southeast Louisiana ACP, and be experienced in public affairs, public speaking, crisis communication, media relations, and principles of JIC management.

The IO will:

- Oversee JIC operations in accordance with this JIC Manual, ensuring adequate space, equipment, and personnel are available;
- Appoint personnel to key positions based on skill level and previous training;
- Participate in Unified Command meetings and provide advice for handling issues;
- Develop public information plans, goals, and strategies for specific operational periods;
- Analyze public perception and make necessary strategic adjustments;
- Provide direction for handling controversial and sensitive issues;
- Establish daily schedules for news conferences, briefings, tours and public meetings. These should be closely coordinated with the Operational Planning Cycle. This ensures that the IO has the latest information available;
- Prepare Unified Command for news conferences;

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- Moderate news conference and assist with public meetings. It is suggested that the task of news conference moderator be assigned to someone other than the responsible party, if the responsible party is filling the IO position;
- Conduct media briefings;
- Develop plans for media tours and assist the Liaison Officer with VIP tours and visits;
- Obtain approval from the Unified Command to disseminate public information products;
- Seek general approval from Unified Command to post simple, factual updates to the Incident Website without UC review;
- Monitor traditional, electronic and social media, correct misinformation and identify trends and issues;
- Coordinate exchange of information among other sections and participating agencies; and
- Resolve disputes among JIC personnel or organizations involved with public information.

Assistant Information Officer

The Assistant IO (from the responsible party) helps the IO by carrying out assignments and tasks as directed by the IO. The Assistant IO may attend all the same meetings as the IO. The Assistant IO should have the same level of technical capacity and qualifications as the primary IO, and should be prepared to assume the duties if the IO is unable to carry them out. Unlike a deputy, the assistant does not have decision-making authority unless specifically delegated by the IO and cannot step in for the IP in his/her absence.

JIC Manager

When a JIC Manager is required he/she is appointed by and reports to the IO to supervise and coordinate activities of the Information Gathering, Information Products, and Media Relations Units. The position should be filled by an experienced public information specialist with a similar level of technical capability and qualifications as the primary IO. They must be familiar with ICS. Necessary skills include managing people and projects, writing, editing, proofreading, and community and public outreach skills.

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The JIC Manager:

- Ensures JIC operations and personnel are functioning well and promptly addressing emerging needs;
- Assigns JIC positions, work, and deadlines;
- Notifies agency communications managers when the JIC has been activated;
- Reviews and revises, when necessary, public information materials developed by government agencies prior to Web-posting or distribution;
- Sets staff work hours and daily JIC operations schedule;
- Established internal communication procedures;
- Ensures approved, spell-checked news releases adhere to Associated Press style and other materials are distributed internally and externally;
- Requests Information Technology (IT) support from the Logistics Unit to install and provide expertise in computers and telephone equipment or programs; (JIC IT support typically is most needed in the first days of incident response and for ongoing periodic troubleshooting);
- Completes daily unit log;
- Ensures all JIC costs are accounted for, including travel and other reimbursement vouchers, and provided to the Finance/Administration Section; and
- Briefs JIC personnel at the beginning of each shift.

Information Gathering Unit

Information Gathering personnel are responsible for gathering, analyzing, and displaying up-to-date information about incident response. They also monitor and respond to traditional and social media coverage and attempt to control rumors. Information Gathering positions should be assigned to people with any combination of skills in public affairs, crisis response, journalism, JIC operations and management.

Information Gathering personnel:

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- Gather, manage, and analyze information from all parts of the JIC and Unified Command;
- Post and distribute incident information to JIC personnel and to the Documentation Unit for posting in the command post;
- Respond rapidly to requests for information from Media Relations Specialists;
- Analyze and respond to media and social media reports; and
- Respond rapidly to breaking news and rumors.

Fact Gathering Specialist

Fact Gathering Specialists gather, analyze, and distribute up-to-date information about incident response to other JIC personnel. A Fact Gathering Specialist essentially fills the role of “internal reporter” and must possess good listening, note-taking, and writing skills. Fact Gatherers should be familiar with ICS, especially the Planning Section’s Situation Unit, and have a working knowledge of key concepts, terminology including Operations Sections briefings and Planning Section meetings. Fact Gathering Specialists should also request the Situation Unit Leader obtain specific types of information for the JIC.

The Fact Gathering Specialist:

- Attends Planning/Situation meetings, takes good notes, and seeks clarification when needed;
- Routinely checks for new or updated information from the Situation Unit;
- Quickly finds and provides answers to questions from JIC personnel; and
- Located fact sheets, maps, aerial photos, and other resources to be attached to and distributed with news releases or posted on the incident Website.

Media Monitoring and Analysis Specialist

The Media Monitoring and Analysis Specialists evaluate the content and accuracy of news and social media reports and identifies and trends or developing issues. Persons in this position should provide daily or more frequent coverage synopses of prominent/sensitive issues, inaccuracies and viewpoints and recommendations for corrections to the Media Relations Officer.

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The Media Monitoring and Analysis Specialist:

- Monitor blogs and social media/networking sites;
- Monitors, clips, and distributes all incident-related news from print and electronic media;
- Gathers perspectives from the media, public, affected communities and other stakeholders about the progress of the response efforts; and
- Identifies potential issues of concern, problems and rumors and reports information to the PIO, Rumor Control Specialist, and appropriate agency or staff.

Rumor Control Specialist

The Rumor Control Specialist receives, verifies, and ensures that facts are disseminated to dispel false rumors regarding the incident.

The Rumor Control Specialist:

- Monitors incoming emails, online communities (blogs, social networks), local print and broadcast media to evaluate/validate rumors;
- Receives rumor reports from others in response (e.g., Media Relations Specialist or Community Relations Specialist or those who work with the media or the public in the field);
- Identifies and reports rumors that may cause great concern or problems to the Information Gathering Officer, Information Products Officer, Media Relations Officer, and Community Relations Officer/Specialist; and
- Reports results of each rumor investigation to Unit Officers noted above.

Information Products Unit

Information Products personnel are responsible for developing, writing, and distributing information-based materials. Information Products positions should be assigned to people with some combination of skills in public information, journalism, photography, web management, desktop publishing, ICS and JIC experience.

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Writer

Writers produce news releases and nearly all other print material. At least one and often more, news releases should be produced each day. Other products include fact sheets, talking points, meeting agendas, and presentation materials. Depending on staffing levels and skills, Writers may collaborate with Media Relations Specialists (see below), who format material for posting on the official incident Website and provide that material to other organizations for posting.

Writers should possess a combination of skills in writing, editing, design, and layout. The Writer:

- Develops communication and outreach products (e.g., news releases, talking points, briefings, fliers, fact sheets, public service announcements, etc);
- Takes publication-quality digital photographs for media and other users;
- Produces digital broadcast-quality video clips, radio feeds, and Public Service Announcements; and
- Develops briefing packets and handouts for news conferences, VIP tours, public meetings and other venues.

Photographer/Videographer

The Photographer/Videographer shoots high quality digital photos or video for release to the public and media. Personnel in this position should possess advance skills and experience in digital photography, digital videography, and digital editing and broadcast productions. In addition, it is possible that the Safety Officer may require HAZWOPER certification for the Photographer/Videographer to capture images from the hazard site.

The Photographer/Videographer:

- Shoots and edits photographs of high (print) quality;
- Shoots and edits video of broadcast quality;
- Catalogs and manages all photos and videos;
- Provides all photo and video to the Administrative Assistant for the casebook and the Website Specialist for the JIC Website; and
- Obtain high quality photos or video from responders when possible.

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Administrative Assistant

An Administrative Assistance provides support to the Information Products Officer and his/her staff. This position ensures all information posted on the incident Website is timely, accurate, continuously updated, and approved by the Unified Command.

The Administrative Assistant:

- Provides support from media briefings and town meetings:
- Works with Logistics Section to obtain set up and run audio/visual support for briefings;
- Provides all JIC files and products to the Documentation Unit by the end of each shift;
- Establishes contacts and schedules regular times to retrieve information from all sections within the ICS structures;
- Catalogs, files and copies all JIC printed materials; and
- Produces and maintains a casebook.

Website Specialist

The Website Specialist ensures all information posted on the incident Website is timely, accurate, continuously updated, and approved by the Unified Command. The position also provides material to other organizations for Web posting and, if practical, monitors those Websites. The position should be filled by a person with strong skills in creating and formatting Web pages and working with digital images.

The Website Specialist may be located in the command post or in a response agency's office to:

- Maintain and update incident Website and incident social media accounts;
- Route email inquiries to Media or Community Relations Specialists;
- Ensure appropriate approval of all items prior to posting on incident Website, blog, or social media accounts;

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- Maintain JIC blog is applicable;
- Use Incident Website and social media accounts as forums to address questions, concerns, or misinformation found on other Websites, blogs, and chat rooms; and
- Establish a link that directs users to the incident Website when the command post is deactivated.

Distribution Assistant

Distribution Assistants are appointed by and report to the JIC Manager. They are responsible for e-mailing news releases, fact sheets, and other materials developed for the media and public. They may also distribute information door-to-door, when necessary. Coordination with the Liaison Officer will ensure distribution to numerous non-media audiences.

Media Relations Unit

The Media Relations Unit is largely responsible for communication with the media and the public. Personnel selected for these positions must possess experience in journalism, media relations, public affairs, public speaking, and crisis communications.

Media Relations Personnel:

- Provide support of news conferences, briefings, public meetings, tours, and other activities;
- Support development and modification of communications and outreach strategies;
- Support development of materials and logistics for VIP tours;
- Field inquiries from reporters (Stay on message. Stick with facts approved by Unified Command);
- Serve as incident spokesperson in print and broadcast media;
- Assist in organizing and hosting news conferences, media briefings, and public meetings;
- Coordinate with the Liaison Officer;

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- Analyze news coverage and community feedback to determine effectiveness of communication efforts;
- Recommend and develop strategies for providing information to news media;
- Escort reporters and other during tours;
- Develop and implement community outreach programs;
- Identify and correct rumors or misinformation;
- Maintain records of media calls;
- Maintain contacts list of media; and
- Promote story and feature ideas to target media.

Media Relations Specialist

Media Specialists rely on Fact Gathering Specialists to provide and update information. Media Relation Specialists should have experience interacting with the media. Media Relations Specialists:

- Serve as incident spokespeople;
- Staff the media phone-bank and respond quickly to information requests, using talking points, news releases, and fact sheets as resources;
- Conduct print and broadcast media interviews;
- Prepare speakers prior to interviews; and
- Provide other Media Relations and JIC support as assigned.

Speaker Support Specialist

Speaker Support Specialists coordinate meetings, interviews and other engagements.

Speaker Support Specialists:

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- Identify, schedule, and prepare response personnel and subject matter experts for news briefings and interviews;
- Advise the PIO and JIC Manager on times for news briefings; and
- Work with the Administrative Assistant regarding the set-up and audiovisual needs for news briefings and media interviews.

Field Specialist

Field Specialists provide support to the media and various JIC personnel in the field. Field Specialists:

- Coordinate with the Safety Officer to make sure that it is safe to escort people to the incident scene;
- Ensure that media are properly prepared with information and equipment prior to field visits; and
- Accompany media to incident scene and other field locations.

Community Relations Specialist

Community Relations Specialists are appointed by and report to the JIC Manager. However, they may work jointly with, or directly for, the Liaison Officer, depending on incident-specific needs. The Community Relations Specialist should possess skills in public involvement, community outreach, public speaking, listening, and strategy development.

The Community Relations Specialists disseminates site-specific information developed by the Information Gathering Unit to the local community by methods other than mass media. Dissemination methods include:

- Community and public meetings;
- Community bulletin boards;
- Community Websites;
- Community Web calendar(s);
- Walk-in or walk-up information centers;

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- Central community phone hotline (part of JIC; use “dispatchers” to take all initial calls from both media and public; information about wildlife or where spilled oil is located must be reported to the Operations Section);
- Recorded message information;
- Door-to-door canvassing;
- Use of volunteers to disseminate community information;
- Contacts with schools and churches and community centers; and
- Contacts with non-profit and service organizations, including neighborhood groups.

A Community Relations Specialist:

- Assists the Liaison Officer with arranging tour logistics for elected officials;
- Assesses public perception, summarizes public concerns, or analyzes content when requested by the IO or JIC Manager;
- Elevates important community concerns or site-specific knowledge through the proper chain of command;
- Interprets (oral) or translates (written) incident information for non-English speaking communities;
- Provides background and context to the IO and JIC Manager about affected communities including information about local economics and cultural concerns, past impacts from spills or other disasters/emergencies, organizations that can provide community and individual support, and opinion leaders;
- Maintains records of public calls;
- Recommends and coordinates community outreach efforts or programs; and
- Determines need for and format of public meetings and other public gatherings.

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JIC Protocols and Procedures

A JIC is responsible for media relations and public information during incident response. The following protocols and procedures guide JIC activities.

Unified Command Approves News Releases

Unified Command must approve all news releases prior to distribution. The Unified Command should review draft releases for factual accuracy while avoiding copy-editing.

The IO is responsible for ensuring the Unified Command review and approval occurs quickly. If approval is delayed because of a disagreement about factual statements, the IO should employ two tactics:

- Re-word statement to satisfy Unified Command; or
- Delete disputed statement(s) and try to resolve any issue before the next news cycle.

Unified Command Approval of Web Content, Publications, and other Materials

Besides press releases, the Unified Command must also approve other public information developed by individual agencies responding to an incident. Review and approval must occur prior to publication, Web posting, or distribution. The IO or delegate will help facilitate this process. Whenever possible, review is completed as soon as practical but no more than two hours. In some instances, such as posting simple factual updates from the Situation Unit (ICS-209-OS), the IO may negotiate with Unified Command whether these products need their prior review.

Coordination of Public Information among Other Agencies

Coordination of public information by other agencies is required when the IO or JIC Manager notifies agency communication managers that a JIC has been activated. Coordination also occurs when public information specialists operate from their agency officers to form a “virtual JIC.” Especially in the case of a virtual JIC, the IO should ensure that news releases list points of contact from all organizations participating in the JIC. The coordination loops help avoid surprises and aids Unified Command to speak with a consistent voice. The Information Officer, on behalf of the Unified Command, may be called upon to resolve disagreements that may arise.

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Coordination with the Liaison Officer

Coordination with the Liaison Officer is an important responsibility of JIC personnel. A Liaison Officer is appointed by and reports to the Unified Command. The Liaison Officer is the point of contact for federal, state, and local agency representatives and elected officials with a vested interest in the response. Calls received by the hotline may be directed to the Liaison Officer. The Liaison Officer coordinates all calls from public and private entities offering assistance or requesting information. The IO is responsible for ensuring that the Liaison Officer's messages are consistent with those from the JIC.

Communications Plan

Communication plans for the JIC provide the context and tactics for achieving communication objectives. These plans should not be confused with the communications plan developed by the Communications Unit of the Logistics Section for the operational and tactical response. Plans are developed by the Information Officer for a specific operational period to help the JIC "get ahead of a story" or anticipate issues, pitfalls, problems, and opportunities. Personnel from various parts of the incident command may be responsible for certain plan deliverables. Any response personnel affected by a communication plan should be included as early as possible.

Incident Website and Social Media Accounts

The incident Website may include news releases, fact sheets, photographs, video clips, maps, and other approved documents. The Website Specialist works closely with the JIC Manager to ensure all information posted is accurate, updated, and approved.

As early as possible after the initial response, the PIO is advised to secure general consent from Unified Command to post simple factual updates on the website and via established social media accounts without further Unified Command involvement/approval. Such approval is meant to help the JIC be the first and best source of information. This will also help the Information Products and Media Relations Units manage rumors and supply time-sensitive and vetted information from a single release point.

Documents to the Documentation Unit

All documents generated by the JIC must be provided to the Planning Section's Documentation Unit at the end of each shift. These materials include:

- News releases;
- Fact sheets;
- Other material developed for the media or public;

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- Talking points;
- Media query forms;
- Rumor forms;
- Phone messages;
- Copies of electronic messages, such as emails and social media entries; and
- Communications plans.

While electronic files may be kept, a hard copy is vital for overall documentation of incident response from all sections of Unified Command. The Administrative Assistant is responsible for collecting all documentation at the end of a shift and providing it to the Documentation Unit.

News Releases

A news release is a written document distributed to media via e-mail within 30 minutes of response activation and thereafter as needed. The JIC should strive to meet news cycles (10:30 to 11 a.m. and 3:30 to 4 p.m.) and provide up-to-date information as much as possible throughout each operational period. The process can be streamlined by following these guidelines:

- Limiting length to 250-300 words- about one printed page;
- Using 12 point Times Roman or 11 point Arial fonts (universal for all computers);
- Using quotes judiciously- if at all. Deciding who is quoted and what they say can take considerable time, but quotes can be important statements of empathy. Early narrative news releases represent the best place opportunities for quotes – ongoing releases are largely quantitative in content and don't need quotes;
- Avoiding logos or other layout flourishes that can keep press releases from getting past newsroom spam blocking programs and complicated electronic transmittal;
- Summarizing quantitative information; and
- Using an asterisk to indicate new information when updating frequently.

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Procedures for News Releases

Write, edit, spill-check, and proofread draft release;

Get review, approval from Unified Command or Incident Commander. (If significant changes are made, the news release must be re-approved by the Incident Commander or Unified Command);

Proofread and finish approved release;

The news release should have “Joint Information Center” in the heading even though it may be distributed by a state agency, Coast Guard, EPA, etc;

Post on JIC tracking board. Distribute to Unified Command and the Planning Section Distribution Unit to ensure distribution within the command post; and

Use news releases as key information sources when responding to calls and conducting JIC briefings/tours.

The news release process should roughly follow this process:

- **Fact Gathering Specialist:** Attends briefings or meeting, and obtains news information from Situation Unit; provides information to the Writer(s).
- **Writer:** Writes news release, spell-checks, and proofreads; provides draft to the IO for approval by UC.
- **IO:** Obtains approval from UC and returns to Writer.
- **Writer:** Incorporates changes and finishes the release. If changes are substantive, IO resubmits to UC for approval.
- **Website Specialist:** Formats and posts on incident Website.
- **Distribution Assistant:** Distributes to Media Relations Specialist; externally via e-mail and internally to designated locations.

News Release Distribution

Timely distribution is crucial. Electronic distribution can be handled by either the JIC or a response agency's office- whichever is most expedient and up-to-date. News release and updated should be distributed to:

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- News media;
- Governor's Officer;
- JIC Staff and other interested personnel in the response organization;
- Response organizations' headquarters and/or regional offices;
- State and congressional elected officials from that area;
- Tribal officials;
- Local officials and local emergency management departments;
- Special publications; and
- Environmental and other advocacy organizations.

The Community Relations Specialist and Liaison Officer are responsible for non-media distribution and they jointly maintain those distribution lists.

Handling Media Calls

The JICs primary activity is handling media phone calls and electronic queries. News releases provide the basic reference for Media Relations Specialists who field calls from reporters or conduct on-camera interviews. It is essential adequate personnel be assigned to the media phone bank. Media Relations Specialists should use Media Query forms to track all media calls, questions, and answers. As much as possible, incoming calls from reporters should not be transferred to voice mail.

News Conferences

News conferences should be held when there is new, important information. A news conference is generally held within the first 12-24 hours of a response and thereafter daily- even twice a day- for major incidents. The Incident Commander or Unified Command personnel are the main speakers at news conferences; however, technical specialists from other sections may also be needed. Personnel from nearly all positions in the JIC will play some part in preparation.

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News conferences should not be held inside the incident command post due to privacy concerns and potential distractions to respond personnel. Establish a consistent area to conduct media news conference/ interviews that will not impact response personnel. To hold a news conference:

- Select the appropriate time- typically about two hours before news deadlines (10 a.m. or 3 p.m.), or as soon as possible after a major development;
- Whenever possible, select and schedule a location that is easily accessible, has power and plenty of parking, minimal background noise, and a good backdrop;
- Set up space (audio-visual, chairs, public address system, etc.);
- Notify media about time, location for the news conference, including a map or driving directions;
- Produce briefing packets with news releases, fact sheets, FAQs, maps, etc;
- Identify speakers' order of presentation;
- Schedule and conduct speaker preparation in advance of the news conference. Speaker preparation is essential. Time spent will depend on incident circumstances. Each speaker should have one to three main messages that contribute to a good overall picture;
- Develop or rehearse Q&A for each speaker- not for distribution but help each member of the Unified Command think ahead about answers to questions that may be asked;
- Appoint a news conference moderator- usually the IO- who will:
 - Greet the assembly;
 - Explain the purpose of the news conference;
 - Set the agenda;
 - Introduce the speakers;
 - Discuss format;
 - Call on reporters;

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- Provide sources for additional information;
 - Control the amount of time spent on any given subject; and
 - End the news conference on time.
- Sign in attendees;
- Call on local reporters first or early in the Q&A;
- Assign a JIC staff person to record the event with a digital recorder or camera;
- Assign a JIC staff person to take written notes of each question asks (and by whom), and answers given; and
- Assist reporters with any additional need immediately following the news conference.

Moderators

Moderators set the tone and facilitate news conferences and public meetings. Have a predetermined message for each news conference. Provide correct spelling and titles for any speaker or place names with peculiar spellings. State the speakers' organizations and positions in the in the Unified Command.

- Do not let any one speaker or reporter dominate the news conference. Limit each speaker to about three minutes. Stick to that time.
- Remain available after the news conference.

Media Briefings

Media briefings are less formal than a news conference and generally done by the IP or designee. A media briefing quickly provides certain types of information such are where cleanup crews will be working or where photographers can camera crews can get photo and video footage. They are a good way to also give reporters the day's general schedule and time of the next news conference, public meeting, etc. Send an advisory to reporters or make calls at least an hour in advance of JIC media briefings. All meetings and briefings should be schedules on the daily meeting schedule, ICS Form 230, so that no conflicts occur.

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Tours for Media and VIPs

Tours for media and VIPs should be planned for early in major incidents. Several JIC personnel will be involved in logistics, preparation, and escort. Coordination occurs with the Liaison Officer, Safety Officer, and Logistics Section to address protocol, safety requirements, transportation, and escort concerns. The Unified Command should be informed and may wish to accompany certain VIPs. To coordinate a tour:

- Work with the Operations Section to choose a few good vantage points for viewing incident effects and response work;
- Work with the Operations Section to make sure affected field personnel are alerted to tour schedules and that someone is designated to answer questions about their work;
- Work with the Logistics Section to arrange for group transportation;
- Obtain necessary safety gear and safety briefing for group members;
- Prepare information packets and talking points for tour guides, using only information approved by the Unified Command;
- Choose a technical responder, such as someone working in the Planning Section Environmental Unit, to accompany the tour and answer technical questions; and
- Drive and time the tour in advance.

Media Pools

Media pools (for tours) may be necessary if access is restricted and should be used only as a last resort. Reporters don't like them, but will accept the decision if they understand the necessity. The IO will determine the need for media pools. It is key that journalists selected for media pools understand they are expected to supply copy, video, audio, or still photographs to all reporters requesting the material. Make sure local reporters are included in pools whenever possible. Follow the steps above for media tour preparation. A media pool should consist of:

- One TV video crew (camera operator, sound technician, and reporter);
- One still photographer from wire service, newspaper, or magazine;
- One print reporter from wire service, newspaper, or magazine; and

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- One radio reporter.

Editorial Board Meetings

An editorial board meeting might be requested if an incident command post operated longer than 10 days- or when there is strong and substantial public interest. Editors are a conduit to community opinion leaders. A JIC representative requests a meeting with a newspaper's managing editor and opinion page editor. Two or three Unified Command representatives should attend. Reporters may or may not be present.

Editorial board meetings do not typically result in a story, but may result in an opinion piece or serve as background for future stories. Editorial board participants should receive as much speaker preparation as they would before a news conference. Editorial board meetings are nearly always held at the newspapers primary office. To prepare for an editorial board meeting:

- Review articles about the incident and editorials from previous days and weeks to have a sense about what editors are thinking and reporters are writing;
- Develop two to three key messages for each speaker;
- Conduct a dry run of speakers and prepare with Q&A;
- Develop information packets that include names and contact numbers;
- Provide corrections if the paper has published serious factual errors its reporters and/or editors have refused to correct. Do not belabor minor points; and
- Expect the meeting to last 30-45 minutes.

Community Relations Protocols and Procedures

Public Meetings

Public meetings are necessary under a variety of circumstances. Many JIC personnel play a role in organizing and hosting public meetings. The JIC Manager works with the Community Relations Specialist and Liaison Officer as well as other JIC staff to determine the need and format of meetings. Options include open house events with multiple information displays, or more traditional venues featuring speakers with audience questions. The Liaison Officer coordinated with local elected officials who may- or may not- wish to participate. A representative of the responsible party, if known,

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should consider using a public meeting as an opportunity to express regret about the incident.

Based on the IO's recommendations, Unified Command will make decisions on whether to hold public meetings and/or mobilize a Community Relations Specialist or Unit. IO recommendations should be based on one or more factors including:

- Injuries or deaths as a result of the incident;
- Potential health risks;
- Degree of community outrage, fear, grief;
- Damage to the natural environment or potential harm to wildlife;
- Proximity of incident, command center, or staging area to neighborhoods, schools, and other key community resources;
- Lack of local news and information sources or disproportionate media attention;
- Need for road detours and other emergency measures;
- Damage to or restriction from community resources like parks or public buildings;
- Damage to cultural resources;
- Response efforts continuing for several days or more;
- Widespread rumors and other unconfirmed or inaccurate information; and
- A community's or responsible party's past history with a disaster or emergency response.

To prepare for a public meeting:

Select the time and a location that is easily accessible and Americans with Disabilities Act (ADA) compliant, with plenty of parking, power, and minimal background noise. It is always best to conduct a meeting at the end of the work day to ensure adequate time for community members to arrive after getting off work;

Determine meeting format (open house, audio/visual presentation, panel discussion, web conference);

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Ensure adequate set-up (tables, chairs, easels, displays, sound system, etc);

Identify speakers with technical expertise (health, wildlife, fish/shell fish, tribal interests, economic impacts, etc);

- Schedule and conduct speaker preparation;
- Arrange for language interpreters, if needed;
- Develop talking points and internal Q&A for speakers;
- Develop and package handouts and presentation materials;
- Appoint a meeting moderator;
- Staff a sign-in table and information posts; and
- Handle inquiries from media and public.

Community Bulletin Boards

Community bulletin boards can be places at frequently-visited locations in communities such as grocery stores, libraries, schools, churches, Chamber of Commerce office, fire stations, ferry terminal, bus stops, park-and-rides, tourist information center, public boat launches/marinas, coffee shops, community centers, and fishing licensing outlets.

These bulletin boards convey information that is especially pertinent to local residents or recreationists, including road closures, transportation detours, boating restrictions, health considerations, reporting oiled birds or wildlife, etc. Posted materials can include maps, fact sheets, news releases, and contact information. Bulletin boards must be updated frequently. Postings must be removed when information is outdated or no longer relevant.

Community Websites

Community Websites and community Web calendars can also serve as credible communication tools for the same type of information posted on community bulletin boards. Some public access channels can also provide simultaneous webcasting and/or cable broadcasting of meetings.

Information Centers

Walk-in or walk-up information centers should be considered when there is a high demand for public information due to circumstances such as evacuations, human health risks, property damage, and environmental damage.

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Telephone Hotlines

Telephone hotlines or recorded message lines can be a useful tool to provide residents with a phone call number dedicated for community calls. This helps ensure citizen calls are not pre-empted by other priorities and keeps the main JIC line reserved for media. Recorded messages may be appropriate to inform residents about rapidly-changing conditions such as road closures, potentially harmful exposure to pollution, and progress about incident response. Recorded messages should be updated frequently to provide information to callers who might otherwise swamp incoming telephone lines. If a hotline is established, the Community Relations Unit needs to be adequately staffed to handle the volume of calls.

Door-to-Door Canvassing

Door-to-door canvassing can be used when it is important to warn, instruct, or reassure residents. This method can help inform residents about what they are hearing, seeing, or smelling, and can correct rumors, or misperceptions. If evacuation is recommended and/or required, notification is generally the responsibilities of the local sheriff's office and should not be initiated by the JIC.

Elevating Information

Elevating information that may have value to the Unified command or Incident Commander is a rare, but important, function of the Community Relations Specialists/Unit. For example, if a local citizen or group raises an issue or has knowledge that may aid or hamper the response, that information should be elevated through the proper chain-of-command.

Interpretation and Translation

Interpreting or translating incident information into other languages may be needed in communities with a large non-English speaking population. For further information about non-English speaking populations, go to <http://www.census.gov/>.

Some agencies maintain a list of employees with language skills who might be recruited for incident response. Some communities have readily-available resources for overcoming language barriers.

Other resources that may have language services include community groups, community centers, and local churches. While community members may have credibility and trust within the community, they may lack the translation skills for technical information. It is good to keep in mind that many languages have different dialects which can hamper interpretation.

Using Volunteers

Using credible community volunteers to disseminate information door-to-door or staff an information center can be useful in building trust. Volunteers also can be a critical

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resource when many residents need to be individually contacted in a short amount of time. The Unified Command must always approve using volunteers. They must be properly trained to understand the scope and limitations of their role. For more information regarding the use of Volunteers during a response please refer to the Southeast Louisiana ACP Appendix L, Volunteer Policy.

School Districts

Local school districts should be notified immediately. In addition to providing necessary safety precautions for students, schools have excellent systems for providing information to families. Schools are also good places for public meetings and other response assistance.

Local Churches, Non-Profit, and Service Organizations

To provide Unified Command with the best possible communications guidance, a JIC must have accurate, ongoing analyses of public perception and media content. Given the quick pace of an incident response, this analysis may not be formal. The Community Relations Specialist and Media Monitoring and Analysis Specialist will play a big role in determining public perception and working with JIC personnel to:

- Monitor primary newspaper, radio, television, and Websites;
- Attend town meetings;
- Conduct phone or door-to-door surveys;
- Coordinate and facilitate focus groups, depending on the magnitude of the incident;
- Track calls and requests from reporters and the public;
- Identify potential problems or rumors- and report them immediately to the IP and appropriate agency or office; and
- Identify significant minority communities and determine the most effective ways to communicate with them.

Content Analysis

Content analysis is the review of both media reports and community comments to help determine the effectiveness of JIC communication efforts. Areas for evaluation include

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visual images, information sources, factual statements, and key messages. In conducting an evaluation, consider:

- Overall themes or key messages in media reports and quotes by local citizens;
- Statements about confusion, fear, or anger;
- Visual images used by media or described by citizens, including metaphors, analogies, or stories;
- Information sources quoted by media reports or community members; and
- Accuracy of “factual” statements.

Media Content Analysis

Media content analysis includes:

- Length of a news report, either as broadcast minutes, newspaper column-inches, and number and tone of media blog entries;
- Placement of news articles- lead stories, front page, or placed elsewhere;
- Sources quoted in news reports;
- Accuracy of “factual” statements;
- Key messages stated by sources, quoted in the report, or implied as the overall theme of the report or interview;
- Visuals such as pictures, word analogies, or anecdotal stories that help explain environmental, health, or safety issues; and
- Negative words or phrases that might influence public perception or understanding of the issue.

Community Feedback

Community feedback helps a JIC shape, modify, and target communication products and strategies- especially when there is a high degree of public outrage. Community feedback tools include questionnaires at public meetings or posted on Website and blog

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sites, surveys conducted door-to-door or by phone, and focus groups. Use of these methods is dependent on the magnitude of the incident.

Telephone Surveys

Telephone surveys can be conducted randomly or targets to elected officials, organizations, directors, church pastors, school principles or counselors, neighborhood association officers, police or fire department personnel, and others in the affected community.

Focus Groups

Focus groups involve a moderator who interviews and facilitates a discussion among multiple people at the same time. Focus groups yield a great deal of qualitative information. The moderator should be skilled in interview techniques and facilitation, with good listening abilities.

Sometimes, specific concerns point to the need to target a distinct group, such as Indian Tribes, or workers or residents directly affected by the incident. In other cases, a broad assessment is desired, with people representing different organizations, points of view, ethnic backgrounds, neighborhoods, incomes, professions, or other variables. The goal is to get as complete a picture as possible of the different perceptions regarding incident response.

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Daily Briefing Checklist (for IO or designee)

Date/time:

Name of Lead IO:

Name of JIC Manager:

Date/Time of press conference:

Inquiries:

Name of Field escorts:

Media analysis:

Speaker prep:

Editorial board prep:

Community outreach:

Inquiries:

Public meetings:

Community feedback:

Volunteer inquiries/organizations:

Protocol:

Tour support:

Escorting:

News releases:

Fact Sheets:

Photo/video:

Audio/visual support:

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JIC Supplies Checklist

Necessities

- ☐ Cell phones:
 - ☐ Information Officer
 - ☐ Assistant Information Officer
 - ☐ Joint Information Center Manager
 - ☐ Internal Affairs Manager
 - ☐ External Affairs Manager
 - ☐ Community Relations Manager
- ☐ Computers- at least 3 needed with external drive and software
- ☐ Computer memory stick (at least 8 GB memory each; virus scanned)
- ☐ Computer software (Windows, Word, Adobe Acrobat Reader, Internet Explorer, Outlook)
- ☐ Computer Wi-Fi card
- ☐ Internet connectivity
- ☐ Landlines (DSL and/or normal cords)
- ☐ Phone/e-mail lists with internal state/federal contacts
- ☐ Phone/e-mail lists with external state/federal contacts
- ☐ Phone/e-mail lists with JIC participants and ICS contacts
- ☐ Media phone/e-mail list
- ☐ Printer

Supplies:

- ☐ Batteries, replacement for all equipment (AAA, AA, 9-volt, C, D, camera, lithium, etc.)
- ☐ Binder clips, various sizes
- ☐ Binders (3-ring) with dividers, several
- ☐ Clipboards
- ☐ Copier
- ☐ Digital Cameras (still and video)
- ☐ Digital recorders
- ☐ Dry erase markers and eraser
- ☐ Easels
- ☐ Extension cords with 3 prongs- 4 20' cords
- ☐ File folders
- ☐ Flip charts, 4 pads
- ☐ 3-hole punch
- ☐ Name tags
- ☐ Power surge protectors

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- ☐ Printer cartridges- at least 4
- ☐ Printer paper- 6 reams (4 white, 2 colored)
- ☐ Push pins
- ☐ Radio, AM/FM
- ☐ Staplers (with extra staples)
- ☐ Scissors
- ☐ Tablets (writing)
- ☐ Tape (clear, masking, blue, duct)
- ☐ TV and DVD player/recorder
- ☐ White sheet (if A/V screen is unavailable)
- ☐ Whiteboard

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Southeast Louisiana Area Media Contacts by Media Market

Rayne Independent	P.O. Box 428	Rayne	LA	70648	MC	318-334-2128	318-334-2120
Kinder Courier	P.O. Drawer AK	Kinder	LA	70648	PA	318-738-5642	318-738-5777
Donaldsonville Chief	402 Railroad Avenue	Donaldsonville	LA	70346	NO	504-473-3101	504-473-4060
Assumption Pioneer	P.O. Drawer 428	Napoleonville	LA	70390	MC	504-369-7153	504-369-7153 504-369-7153
Cajun Gazette	3929 Highway 70	Pierre Part	LA	70339	MC	504-252-6835	504-252-6835 504-252-7100
Bunkie Record	P.O. Box 179	Bunkie	LA	71322	NO	318-346-7642	
Weekly News	P.O. Box 523	Marksville	LA	71351	NO	318-253-9247	318-253-7223
Beauregard Daily News	P.O. Box 1999	Sulphur	LA	70663	PA	318-463-6204	318-463-5347
Bienville Democrat-Ring	P.O. Box 29	Arcadia	LA	71001	NO	318-263-2922	318-263-8897
Bossier Press-Tribune	P.O. Box 6267	Bossier City	LA	71111	NO	318-747-7900	318-747-5298

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Caddo Citizen	P.O. Box 312	Vivian	LA	71082	NO	318-375-3294	318-375-3294	318-375-4578
KSLA-TV-Ch.12 CBS-	P.O. Box 41812	Shreveport	LA	71134	NO	318-222-1212		318-677-6705
KTAL-TV-Ch.6 NBC-	P.O. Box 7428	Shreveport	LA	71134	NO	318-425-2422		318-425-2488
KTBS-TV-Ch.3 ABC-	P.O. Box 44227	Shreveport	LA	71134	NO	318-868-3644		318-862-9431
KLPC-TV-Ch.7 NBC-	P.O. Box 1488	Lake Charles	LA	70602	PA	318-439-9071		318-437-7600
KVHP-TV-Ch.29	129 W. Prien Lake Rd.	Lake Charles	LA	70601	PA	318-474-1316		318-474-9028
Lake Charles American	P.O. Box 2893	Lake Charles	LA	70602	PA	318-433-3000	318-494-4081	318-494-4008
S.W. Daily News	P.O. Box 1999	Sulfur	LA	70664	PA	318-527-7075		318-528-3044
W.L. Moss Bluff News	P.O. Box 127	Westlake	LA	70669	PA	318-436-0583		318-528-3044
Caldwell Watchman-Progress	P.O. Box 68	Columbia	LA	71418	NO	318-649-6411		318-649-9368
Cameron Par. Pilot	P.O. Box J	Cameron	LA	70631	PA	318-786-8131		800-256-7323

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Cameron Parish Pilot	P.O. Box 995	DeQuincy	LA	70633	PA	318-786-8131	318-786-8131
Catahoula News Booster	P.O. Box 188	Jonesville	LA	71343	NO	318-757-3646	318-757-3001
Guardian Journal	P.O. Box 119	Homer	LA	71040	NO	318-927-3541	318-927-3542
Concordia Sentinel	P.O. Box 312	Ferriday	LA	71334	NO	318-757-3646	318-757-3001
The Enterprise	P.O. Box 840	Mansfield	LA	71052	PA	318-872-4120	318-872-6038
The Advocate	P.O. Box 588	Baton Rouge	LA	70821	NO	504-388-0128	504-383-1111
Business Report	P.O. Box 1949	Baton Rouge	LA	70821	NO	504-928-1700	504-923-3448
Morning Advocate	P.O. Box 588	Baton Rouge	LA	70821	NO	504-388-1111	504-388-0371
WAFB-TV-Ch.9 CBS-	P.O. Box 2671	Baton Rouge	LA	70821	NO	504-383-9999	504-379-7876

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WBRZ-TV- Ch.2 ABC-	P.O. Box 2906	Baton Rouge	LA	70821	NO	504-336-2338	504-336-2338	504-336-2246
WGMB-TV- Ch.44 FOX-	5800 Florida Boulevard	Baton Rouge	LA	70806	NO	504-926-4444		504-926-9462
WLPB-TV- Ch.27 PBS-	7860 Anselmo Lane	Baton Rouge	LA	70810	NO	504-767-5660		504-767-4299
WVLA-TV- Ch.33 NBC-	P.O. Box 14685	Baton Rouge	LA	70898	NO	504-766-3233		504-766-4112
Banner Democrat	313 Lake St.	Lake Providence	LA	71254	NO	318-559-2750		318-559-2750
Watchman	P.O. Box 368	Clinton	LA	70722	NO	504-683-5195		
Ville Platte Gazette	P.O. Box 220	Ville Platte	LA	70586	NO	318-363-3939		318-363-2841
The Franklin Sun	P.O. Box 550	Winnsboro	LA	71295	NO	318-435-4521		318-435-9220
The Chronicle	505 2nd St.	Colfax	LA	71417	NO	318-627-3737		318-627-3019
The Daily Iberian	P.O. Box 9290	New Iberia	LA	70562	MC	318-365-6773		318-367-9640

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Post/South	P.O. Box 589	Plaquemine	LA	70764	NO	504-687-3288	504-687-1814
The Jackson Independent	P.O. Box 520	Jonesboro	LA	71251	NO	318-259-2551	318-259-1148
Jennings Daily News	P.O. Box 910	Jennings	LA	70546	PA	318-824-3011	318-824-3019
St. Bernard News	3010 Lausat Street	Metairie	LA	70001	NO	504-832-1481	504-837-5923
The Times Picayune	3800 Howard Avenue	New Orleans	LA	70140	NO	504-826-3279	504-826-3007
Daily Advertiser	P.O. Box 3268	Lafayette	LA	70502	MC	318-235-8511	318-237-8940
KADN-TV-Ch.14 FOX-	1500 Eraste Landry Rd	Lafayette	LA	70506	MC	318-237-1500	318-237-2237
KATC-TV-Ch.3 ABC-	P.O. Box 93133	Lafayette	LA	70509	MC	318-235-3333	318-234-3580
KLFY-TV-Ch.10 CBS-	P.O. Box 90665	Lafayette	LA	70509	MC	318-981-4823	318-984-8323
The Times of Acadiana	P.O. Drawer 3528	Lafayette	LA	70502	MC	318-237-3560	318-233-7484
Lafourche Gazette	P.O. Drawer 1450	Larose	LA	70373	MC	504-693-7229	504-693-8282
The Daily Comet	P.O. Box 5328	Thibodaux	LA	70301	MC	504-447-4055	504-448-7606
Jena Times	P.O. Box 1384	Jena	LA	71342	NO	318-992-4121	318-992-2287

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The Ruston Daily Leader	P.O. Box 520	Ruston	LA	71273	NO	318-255-4353	318-255-4006
Denham Springs News	P.O. Box 1529	Denham Springs	LA	70727	NO	504-665-5176	504-665-5176 504-667-0167
Livingston Leader	P.O. Box 300	Livingston	LA	70754	NO	504-665-5176	504-667-0167
Madison Journal	300 S. Chesnutt Street	Tallulah	LA	71282	NO	318-574-1404	318-574-4219
Bastrop Daily Enterprise	P.O. Box 311	Bastrop	LA	71221	NO	318-281-2691	318-283-1699
Natchitoches Times	P.O. Box 448	Natchitoches	LA	71458	NO	318-352-3618	318-352-7842
City Business	111 Vet. Blvd, Ste. 1810	Metairie	LA	70005	NO	504-834-9292	504-837-2258
Gambit	4141 Bienville Street	New Orleans	LA	70119	NO	504-486-5900	504-488-7263
Louisiana Weekly	P.O. Box 53008	New Orleans	LA	70153	NO	504-524-5563	504-527-5826
N.O. Tribune	2335 Esplanade Ave.	New Orleans	LA	70119	NO	504-945-0772	504-949-4129
St. Bernard	P.O. Box 88	Arabi	LA	70032	NO	504-279-7488	504-277-2231
The Times Picayune	3800 Howard Avenue	New Orleans	LA	70140	NO	504-826-3300	504-826-3800
The Times Picayune Pub. Corp.	3800 Howard Avenue	New Orleans	LA	70140	NO	504-826-3279	504-826-3279 504-826-3007

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WDSU-TV- Ch.6 NBC-	520 Royal Street	New Orleans	LA	70130	NO	504-527-0606	504-527-0145
WGNO-TV- Ch.26 IND.-	2 Canal St., Ste. 2800	New Orleans	LA	70130	NO	504-581-2600	504-522-1885
WVUE-TV- Ch.8 ABC-	1025 S. Jefferson Davis	New Orleans	LA	70125	NO	504-486-6161	504-483-1212
WWL-TV- Ch.4 CBS-	1024 N. Rampart Street	New Orleans	LA	70116	NO	504-529-4444	504-592-1949
WYES-TV- Ch.12 PBS-	916 Navarre	New Orleans	LA	70124	NO	504-486-5511	504-483-8408
KNOE-TV- Ch.8 CBS-	P.O. Box 4067	Monroe	LA	71211	NO	318-388-8888	318-325-4448 318-325-3405
KTVE-TV- Ch.10 NBC-	2909 Kilpatrick Blvd.	Monroe	LA	71201	NO	318-323-1300	318-323-1300 318-322-8844
News Star	P.O. Box 1502	Monroe	LA	71210	NO	318-322-5161	318-362-0278
Ouachita Citizen	810 Natchitoches St.	West Monroe	LA	71291	NO	318-322-3161	318-325-2285
Plaquemines Gazette	P.O. Box 700	Belle Chasse	LA	70037	NO	504-392-1619	504-393-9327
Plaquemines Gazette	7952 Highway 23	Belle Chasse	LA	70037	NO	504-392-1619	504-393-9327
Plaquemines Watchman	P.O. Box 700	Belle Chasse	LA	70037	NO	504-392-1619	504-393-9327
Pointe Coupee Banner	P.O. Box 400	New Roads	LA	70760	NO	504-638-7155	504-638-8442

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Alexandria Daily Town Talk	P.O. Box 7558	Alexandria	LA	71306	NO	318-487-6397	318-487-6397	318-487-6315
KALB-TV-Ch.5 NBC-	P.O. Box 951	Alexandria	LA	71309	NO	318-445-2456	318-445-6937	318-442-7427
KLAX-TV-Ch.31 ABC-	P.O. Box 8818	Alexandria	LA	71306	NO	318-473-0031	318-473-0412	318-442-4646
Coushatta Citizen	P.O. Drawer F	Coushatta	LA	71019	NO	318-932-4201		318-932-4285
Richland Beacon News	P.O.Box. 209	Rayville	LA	71269	NO	318-728-6467		318-728-5991
Sabine Index	P.O. Box 871	Many	LA	71449	PA	318-256-3496		318-256-9151
St. Bernard Voice	234 Mehle Avenue	Arabi	LA	70032	NO	504-279-7488		504-277-2231
St. Charles Herald	P.O. Box 159	Norco	LA	70079	NO	504-764-6141		504-764-6454
St. Charles Herald-Guide	P.O. Box 1199	Boutte	LA	70039	NO	504-758-2795	504-758-2795	504-758-7000
River Par. Guide	P.O. Box 1199	Boutte	LA	70039	NO	504-758-2795		504-758-7000
The St. Helena Echo	P.O. Box 190	Greensburg	LA	70441	NO	504-222-4541		504-748-7104
The Enterprise	P.O. Drawer 9	Vacherie	LA	70090	NO	504-265-2120		504-265-2120
News Exam.	P.O. Drawer 460	Lutcher	LA	70071	NO	504-869-5784		504-869-4386

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News Examiner	P.O. Drawer 460	Lutcher	LA	70071	NO	504-869-5784	504-869-4386
L'Observateur	P.O. Box 1010	LaPlace	LA	70069	NO	504-652-9545	504-652-3885
The Daily World	P.O. Box 1179	Opelousas	LA	70570	NO	318-942-4971	318-948-6572
The Eunice News	P.O. Box 989	Eunice	LA	70535	NO	318-457-3061	318-457-3122
Banner Tribune	115 Wilson Street	Franklin	LA	70538	MC	318-828-3706	318-395-7036
The Daily Review	P.O. Box 948	Morgan City	LA	70381	MC	318-384-8370	318-384-4255
Franklin Banner Tribune	P.O. Box 566	Franklin	LA	70538	MC	318-828-3706	318-828-2874
Jean. Enter.	P.O. Box 327	Jeanerette	LA	70544	MC	318-276-5171	318-367-9640
St. Mary Journal	1014 Front Street	Morgan City	LA	70381	MC	318-384-1350	318-384-4255
Teche News	P.O. Box 69	St. Martinville	LA	70582	MC	318-394-6232	318-394-7511
The Teche News	P.O. Box 69	St. Martinville	LA	70582	MC	318-394-6232	318-394-7511
Slidell Sentry News	P.O. Box 910	Slidell	LA	70459	NO	504-643-4918	504-643-4966
St. Tamm. News Ban	P.O. Drawer 90	Covington	LA	70434	NO	504-892-7980	504-892-8242
St. Tammany Farmer	321 N. New Hampshire	Covington	LA	70433	NO	504-892-2323	504-892-2323 504-892-2325

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St. Tammany Farm.	P.O. Box 269	Covington	LA	70434	NO	504-892-2323	504-892-2325
The Amite Tangi Digest	P.O. Box 698	Amite	LA	70422	NO	504-748-7156	504-748-7104
Daily Star	P.O. Box 1149	Hammond	LA	70404	NO	504-345-2333	504-542-0242
The Enterprise	P.O. Box 218	Ponchatoula	LA	70454	NO	504-386-6537	504-386-6537
Hammond Vindicator	P.O. Box 2848	Hammond	LA	70404	NO	504-748-7156	504-748-7104
Ponchatoula Times	P.O. Box 743	Ponchatoula	LA	70454	NO	504-386-3877	504-386-0458
Tangi Talk	110 S.W. Central Ave.	Amite	LA	70422	NO	504-748-6343	504-748-7104
Tensas Gazette	P.O. Box 25	St. Joseph	LA	71366	NO	318-766-3258	318-766-4273
The Courier	P.O. Box 2717	Houma	LA	70361	MC	504-879-1557	504-857-2229
Houma Daily Courier.	3030 Barrow Street	Houma	LA	70360	MC	504-879-1557	504-879-1557 504-857-2229
Gazette	P.O. Drawer 722	Farmerville	LA	71241	NO	318-368-9732	318-368-7331
Abbeville Meridional	P.O. Box 400	Abbeville	LA	70511	MC	318-893-4223	318-898-9022
Gueydan Journal	P.O. Box 536	Gueydan	LA	70542	PA	318-536-6016	318-536-6016
Kaplan Herald	P.O. Box 236	Kaplan	LA	70548	MC	318-643-8002	318-643-1382

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The Meridional	P.O. Box 400	Abbeville	LA	70511	MC	318-893-4223	318-898-9022
Leesville Daily Leader	P.O. Box 619	Leesville	LA	71446	PA	318-239-3444	318-238-1152
The Era-Leader	1044 Main Street	Franklinton	LA	70438	NO	504-839-9077	504-839-2439
Minden Press Herald	P.O. Drawer J	Minden	LA	71055	NO	318-377-1866	318-377-1895
West Side Journal, Inc.	P.O. Box 260	Port Allen	LA	70767	NO	504-343-2540	504-344-0923
West Carroll Gazette	P.O. Box 1007	Oak Grove	LA	71263	NO	318-428-3207	318-428-2747
St. Francisville Democrat	P.O. Box 1876	St. Francisville	LA	70775	NO	504-635-3366	
Winn Parish Enterprise	P.O. Box 750	Winnfield	LA	71483	NO	318-628-2712	318-628-6196

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News Conference/Public Meeting Worksheet

Event:

Date:

Time:

Location:

Methods for notifying public:

Translation/Interpretation Needs:

Length of conference or meeting:

Audio/Visual materials:

Moderator:

1. Presenter/Handout:
2. Presenter/Handout:
3. Presenter/Handout:
4. Presenter/Handout:
5. Presenter/Handout:

Refreshments:

Special needs arrangements:

Notes:

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Audience Sign In

Please Sign In

NAME	ORGANIZATION	E-MAIL

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Moderator Script Outline

Welcome to today's (this morning's/ tonight's) news conference. My name is _____

We will be presenting information on:

With us today are:

We will begin with brief statements by representatives of the Unified Command, and then we will open the floor to your questions. Because of the on-going response need, we will be available for _____ minutes today. Please allow time for everyone here to ask questions.

Following the news conference, staff of the Joint Information Center and I will try to help you with any further needs.

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Field Escort Equipment and Communications Checklist

Personal Protective Equipment (to be determined by the Safety Officer) which may include:

- Hard Hat
- Goggles
- Gloves
- Rubber Boots
- PFD
- Respirator

Communications

- VHF radio
- Cell Phone

Information

- Assignment List: ICS Form 204
- Incident Status Summary: ICS Form 209

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Sample Questions for Focus Group or Interviews

The following are sample questions that can be used for obtaining feedback through focus groups or in interviews.

1. What was your reaction when you first learned of the incident? How and when did you first learn about it?
2. Have you discussed the incident/response with friends, family, neighbors, or colleagues? What are they saying?
3. How are you getting information about the response?
4. What are your preferred means of getting information?
5. In your mind, What questions remain unanswered?
6. In general, how would you rate the effectiveness of the response, on a scale of one to ten, ten being the highest?
7. What do or would you tell others about how the response is being carried out?
8. If you could change one thing about the response, what would you change? What is the main reason that one thing needs changing?
9. What would it take for the response agencies to get an “A” for their efforts to respond to this type of incident?
10. What two positive things can you tell me about the response? What are two negative things about the response?

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Focus Group Preparation

Ideally, two or three sessions are held, with a different group in each. About two hours should be scheduled for each group session. The location should be a comfortable, “neutral” meeting room. The host should provide coffee, tea, and snacks. Check to make sure your meeting location complies with ADA requirement.

Optimum group size is 8 to 12 people. The more people you have in each group, the more time you will need for discussion, but the broader perspective you’ll have. Be realistic. In a group of 10, for instance, each person would have about ten minutes of dialogue in a two-hour meeting. In other words, each person would have about one minute to respond to each of ten questions.

Be clear about your goals as you craft your interview questions. They need to yield answers that help you understand how to better respond to community needs.

Develop and print an agenda for distribution among group members. You might also include a packet of materials already generated to seek feedback on their effectiveness. Focus group sessions should be taped (audio or video), along with note taking by the moderator and another appointed JIC staff in attendance. You may want to record comments on a flip chart.

Be on hand early to greet all participants as they arrive. Have them print name tags and table placards.

SAMPLE AGENDA

Moderator	Welcome and brief introduction	2 minutes
Members	Round robin introductions	3 minutes
All	Q&A discussion	About 10 minutes per question
Moderator	Wrap-up, closing remarks	3 minutes

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Joint Information Center Communication Plan Outline

Operational period:

Communication goal(s):

Summary of issues, problems, opportunities:

Key message(s):

Target audience:

Need for Translation/Interpretation:

Tools, tactics, and methods (how to notify or inform target audiences):

Deliverables- who will do what by when:

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Media Content Analysis Worksheet

Date of News:

Media outlet name:

Broadcast times:

Coverage synopses:

Issues:

Inaccuracies:

View point:

Fixes:

Who replied to:

.

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Liaison Manual

Introduction

Incidents that are multi-jurisdiction, or have several agencies involved, may require the establishment of the Liaison Officer (LNO) position on the Command Staff. This manual is designed to establish a common framework and policy for agency and responsible party communicators during responses to environmental emergencies that occur within the Southeast Louisiana Area Committee boundaries. This Liaison Manual serves as Chapter 9000, Appendix N of the Southeast Louisiana Area Contingency Plan.

The Liaison Unit is responsible for proactively fostering good communication and cooperation within and outside of the Unified Command. This position and unit is essential for facilitating a close working relationship between people and organizations, and is necessary to assist the Command in establishing and maintaining unity of purpose, command, and message. The Liaison Unit is also responsible for being the external ears of the Unified Command that is listening to, capturing, responding to, and forwarding external concerns to the Command, Planning and the Joint Information Center (JIC).

The Liaison Unit supports the Unified Command's strategic goal of implementing a rapid, aggressive, and well coordinated response action. The LNO and their team are specifically responsible for working with Command and the JIC to ensure the Unified Command is the primary source of timely and credible information for the public, their elected officials and others.

Liaison Group

Liaison Officer

One of the primary incident objectives is to keep government officials, agencies, the public and other interested parties informed during a spill incident. The Liaison staff is responsible for meeting this objective by ensuring that elected officials and other key stakeholders are well informed of the status of the incident, the decisions made, and actions taken by the Unified Command.

LNO Staffing

The Southeast Louisiana Area Committee recognizes there is a shared responsibility among the Unified Command representatives to ensure accurate and credible information is made available. It is also the shared role of the Unified Command

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representatives to ensure appropriate staffing in all positions within the Incident Command System. However, given the importance of the LNO duties, and to ensure public confidence and trust, it is the policy of the Southeast Louisiana Area Committee for the LNO position to be filled by a qualified representative of a federal, state, tribal, or local agency, if available. If no such agency representative is initially available, qualified, or willing to be the LNO, a responsible party representative will, upon the Unified Commands concurrence, fill that role. Furthermore, a transition to a responsible party designated LNO may occur with the concurrence of the Unified Command. The Southeast Louisiana Area Committee also encourages responsible parties to designate an Assistant LNO, who will participate in all the meetings attended by and briefings made by the LNO.

LNO Responsibilities

The LNO has the following responsibilities:

- Be a contact point for Elected Officials, and assisting and cooperating Agency Responsibilities;
- Maintain a list of assisting and cooperating agencies and Agency Representatives, including name and contact information. Monitor check-in sheets daily to ensure that all Agency Representatives are identified;
- Assist in establishing and coordinating interagency contacts.
- Keep elected officials, tribes, and agencies supporting the incident, aware of incident status;
- Monitor incident operations to identify current or potential inter-organizational problems;
- Participate in planning meetings, providing limitation and capabilities of assisting agency resources;
- Coordinate response resource needs for Natural Resource Damage Assessment and Restoration (NRDAR) activities with the OSC during oil and hazardous substance responses;
- Coordinate response resource needs for incident investigation activities the OSC;
- Coordinate activities of visiting dignitaries;

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- Ensure that all required agency forms, reports, and documents are completed prior to demobilization;
- Brief Command on official's and agency issues and concerns;
- Have debriefing session with the IC prior to demobilization; and
- Maintain Unit Log.

Liaison and Natural Resource Damage Assessment

NRDA involves identifying the type and degree of impacts to public biological and cultural resources in order to assist in restoring those resources. NRDA may involve a range of field surveys and studies used to develop a monetary damage claim, or may involve immediately developing a restoration plan with the responsible party. NRDA activities overlap with environmental assessment performed for the sake of spill response. Because NRDA is carried out by natural resource trustee agencies and/or their contractors, personnel limitations may require staff to perform NRDA and response activities simultaneously. Therefore, NRDA staff should remain coordinated with the spill response organization, and need to work with the LNO to coordinate with the UC, Environmental Unit, Wildlife Rescue/Rehabilitation Branch and the NOAA Scientific Support Coordinator to resolve any problems or address areas of overlap. While NRDA resource requirements and cost may fall outside the responsibility of the Logistics and Finance sections, coordination is again important.

Liaison and Incident Investigations

Civil and criminal investigators from federal and state agencies will not normally be a part of the UC, except to the extent that such expertise may help identify the cause(s) of the accident that resulted in the spill and determine immediate mitigating actions in coordination with salvage group to deal with such issues. While investigations personnel may report to individuals that are part of the UC, the investigators are separate and should be clearly delineated as such so as not to introduce potentially polarizing forces into the UC where collaboration and cooperation are key to a rapid and well coordinated response. Coordination with, and access to UC is done through the Liaison Officer.

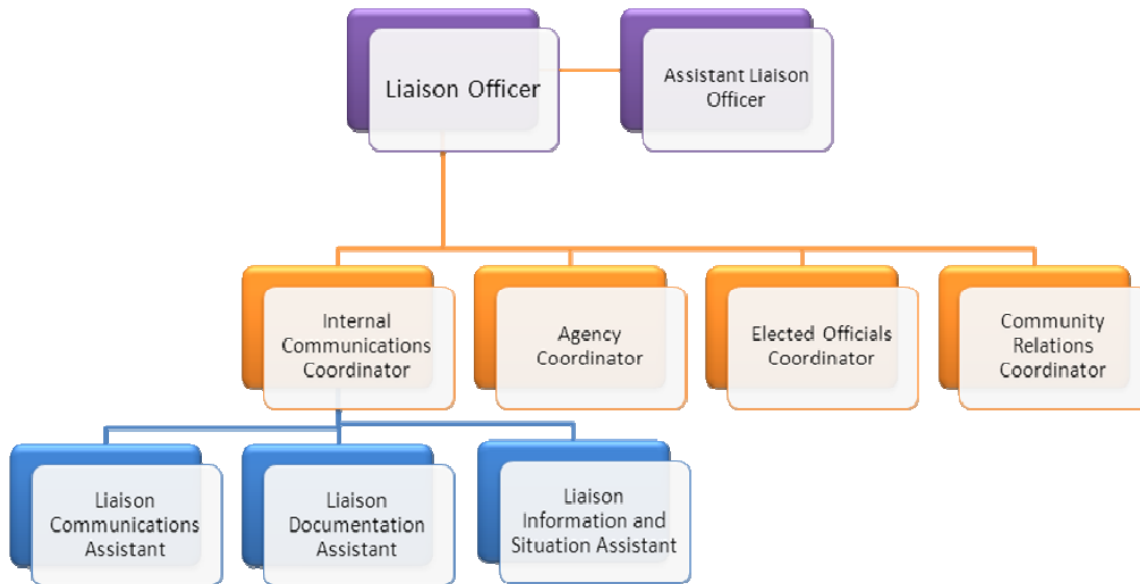
Liaison Coordination and the Joint Information Center

Liaison and the JIC require close coordination. This coordination is essential because lines of jurisdiction may be blurred and the external message must be accurate and consistent. It is recommended the Liaison function be located adjacent to the JIC if

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possible. If not, a runner must be assigned to ensure good coordination and that information is shared in a timely manner.



Assistant Liaison Officer

- Assist the LNO and provides overall direction and oversight of the Liaison group while the LNO is in meetings, etc;
- Coordinate communications between Liaison group and the LNO. Holds regular meetings with the Liaison Unity staff to keep the whole group informed of incident status and overall Liaison tasking;
- Handles routine team management, assigns task and keeps staff and work moving; tracks the status of all Open Action Items.

Agency Coordinator

- Contacts and communicates with Assisting and Cooperating Agencies at the ICP or other off-site locations (EOC, others);
- Established communications links and determines Agency concerns and addresses the appropriately;
- Maintain a list and contact information of assisting and cooperating agencies;

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- Identify and track developing and potential issues of concern. Report these issues to the LNO. Coordinates with Logistics for accessing local resources, including volunteer opportunities;
- Develop an action plan to ensure regular communication and coordination with appropriate stakeholders and submit draft of plan to LNO for review and approval.
- Keeps the LNO up-to-date and informed of who is listed and what their roles and interests are;
- Contacts and coordinates the above activities with any affected Native American Tribes, unless a dedicated coordinator is assigned to liaise with Tribes assisting and/or potentially affected by the incident.

Elected Official Coordinator

- Notifies and maintains close communication with elected and other officials. Coordinates closely with JIC and Agency Coordinator(s) to get consistent early messages out before media release;
- Develops an action plan to ensure regular communication and coordination with appropriate elected officials and submit draft of plan to LNO for review and approval;
- Leads the development of Community and VIP meetings;
- Manages VIP visits and tours at the ICP. Identifies and tracks developing and potential issues of concern, Reports these issues to the LNO who will pass them on to the UC/JIC.
- Coordinates with the LNO when arranging logistics for tours for elected officials;
- Identifies and maintain lists and contact information of elected officials and other key stakeholders; and
- Keeps LNO informed if any elected official adverse feeling/relationship challenges develop.

Community Relations Coordinator

- Establishes Community and public meetings,
- Determines need for the following community outreach methods:

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- Community bulletin boards
- Community websites
- Walk-in or walk-up information centers
- Recorded message information
- Door-to-door canvassing. Provides information to the IO and the JIC Manager about affected communities including local economic and cultural concerns, past impacts from spills or other disasters/emergencies, organizations that can provide community and individual support, and opinion leaders;
- Identified and maintains lists and contact information of communities
- Includes schools, churches, community centers, non-profit service organizations;
- Ensure contact with affected tribes and tribal concerns are integrated*
- Establish contact with key business community leaders and local chambers of commerce to ensure information is shared and economic concerns are integrated*; and
- Keeps the LNO up-to-date and informed of who is listed and what their roles and interests are.

*May want to assign a Tribal Communication Coordinator and Business Community Relations Coordinator, depending on the complexity of the incident.

Internal Communications Coordinator

- Supervises the following staff if needed:
 - Liaison Documentation Assistant;
 - Liaison Information and Situation Assistant; and
 - Liaison Communications Assistant.
- Ensures staff complete tasks; and
- Update LNO on progress on a regular schedule.

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Liaison Documentation Coordinator

- Responsible for maintaining Liaison paper and electronic communication records and security;
- Maintains the Unit Log (ICS 214);
- Assists with the tracking documentation;
- Works closely with the Documentation Unit; and
- Assists with documentation needs of the Liaison Information and Situation Assistant.

Liaison Information and Situation Assistant

- Develops and maintains the Liaison situation board;
 - Work with the situation unit to get started;
 - Updates, phone numbers; meeting schedule;
 - Websites, District maps;
 - Order maps and other tools from the Logistics Section;
- Communicates directly with the JIC and others at the ICP as directed by the internal communication coordinator;
 - Helps to develop documents that may be needed for local officials briefings, VIP tours or community meetings;
 - Ensures coordination on meetings;
- Identifies and establish communication link with NRDA and Incident Investigators.

Liaison Communications Assistant

- Receives calls and messages coming into the ICP. Deals with them directly or routes them appropriately;
- Works closely with Agency Coordinator, and the Elected Official Coordinator; and

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- Keeps the Internal Communications Coordinator up-to-date on important communications.

Liaison IT Assistant

- Immediately provide IT support to allow for immediate external communications;
- Establish communications between lap tops, printers, etc;
- Create email accounts for liaison staff and external stakeholders to exchange information;
- Set up web and phone conferences for official meetings and communication sharing; and
- Create email account to share information between JIC and Liaison Section.

Liaison Strategies and Tactics

Daily Phone Briefs

- Communicate with large number of people;
- May require one for elected officials and one for agencies and one for business interests; and
- Set for same time each day.

Community Meeting

- Provide information on spill details;
- Public Health issues and evacuation plans;
- Claims and compensations process; and
- Volunteer opportunities.

Elected Official Briefing

- May be given at the local government Emergency Operations Center;
- Provides first hand information on the spill;

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- ICS process updates; and
- Constituent issues aired.

VIP Tour

- Invitation List;
- Command Post;
- Spill Site; and
- Aerial tour.

Liaison Tools

VIP/Visitors Tools

- VIP Tour Checklist;
- VIP Tour Agenda;
- VIP Tour ground rules;
- Elected Officials Briefing Agenda; and
- Calling elected officials script

Command Post Tools

- Organizational Charts (laminated for multiple use)
- Position assignment list
- Supplies checklist
- Projector
- Printer
- Maps of legislative districts

Information for Handouts

- Factsheets: Overview of Area Planning;

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- Factsheets: Oil Spill Prevention, Planning and Response Measures;
- Factsheets: Geographical Response Plans;
- Factsheets: Containment and Recovery of Spilled Oil;
- Pamphlets: Oil Spill Shoreline Assessment and Cleanup;
- Pamphlets: In-Situ Burning in Oil Spill Response;
- Pamphlets: Dispersants in Oil Spill Response;
- Pamphlets: Incident Command System in Incident Response;
- Pamphlets: Non-Floating Oils and the Environment;
- Pamphlets: Bioremediation in Oil Spill Response;
- Pamphlets: Oil Spills and Seafood;
- Pamphlets: Oil Spill Notification Requirements;
- Pamphlets: Tar Balls in the Coastal Environment
- Pamphlets: Volunteers at Oil Spill Clean-ups;
- Pamphlets: Effects of Oil on the Environment;
- Pamphlets: Effects of Oil on Mangroves;
- Pamphlets: Effects of Oil on Marine Mammals;
- Pamphlets: Effects of Oil on Marine Shellfish;
- Pamphlets: Effects of Oil on Seagrass; and
- Pamphlets: Effects of Oil on Wildlife.

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Useful ICS Forms for the Liaison Group

The following is a list of the most commonly used ICS forms for the Liaison Group.

ICS-214 Unit Log Maintained by the Liaison Documentation Assistant or as directed by Liaison Officer. This form is used to capture activities the unit has taken and staffing. It can be used as documentation for inclusion in any after-action reports.

ICS-214a Individual Log Maintained by each member of the Liaison Group. A personal log of activities and major events.

ICS-213 General Message May be used by any member of the Liaison Group. This form is used to capture information or requested actions taken in response to requested. It's also used to announce significant event to other members of the ICS organization. Each is reviewed by the Liaison Officer or Assistant.

Stakeholder Contact List (adapted from the ICS 205a) Used by the Agency Coordinator, Elected Official Coordinator and the Liaison Communications Assistant. This form has been adapted to be used as a list of contacts you have made with stakeholders. This form should be regularly reviewed to ensure that new additions are added to the master-list contact/communications sheets.

ICS-230 Daily Meeting Schedule The Liaison Information, Situation Assistant and Community Relations Coordinator are responsible for ensuring that significant liaison related meetings are included on this form. The completed form will be available from the Situation Unit and will track all Command Post meetings.

ICS-231 Meeting Summary This form is used to capture notes from external meetings and Liaison Group meetings. Use the ICS form 233 Open Action Tracker to make assignments and track action items from meetings.

ICS Form 233 Open Action Tracker This form is used to make assignments and track action items.

ICS-211p Check In List Personnel Made available by a Check-in/Status Recorder of the Resources Unit in the Planning Section. Entries are to be made by each Liaison Group member at the beginning and end of each work period.

ICS-202 Incident Objectives This form describes the basic incident strategy, control objectives, command emphasis/priorities and safety considerations for the respective Operational Period. This form includes general direction to the Liaison Group from the Command and may be useful as a presentation tool for stakeholders.

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Useful Tips

The following tips may be useful in establishing and maintaining an effective Liaison Group.

- Develop an immediate message to be broadcast to key elected and tribal officials and agency representatives. Coordinate closely with JIC to ensure messaging is consistent and timely provided. It is important to inform them early even if information is very incomplete.
 - As soon as practicable, follow-up with more detailed messages as incident situation is clarified/verified. Ensure you highlight corrections to any prior information passed that may have been inaccurate.
 - Set a regular daily meeting/briefing schedule for elected officials and key government agencies and tribes.
- Maintain your individual logs (ICS 214a) as a rolling journal of your activities and communications.
- When scheduling a meeting, make sure it does not conflict with the commonly held meetings already listed, especially if you need to have members of the UC present at your meetings.
 - Ensure you account for travel time for external meetings that will involve the Unified Command to ensure their availability at those regularly schedules UC meetings.
- Develop templates for messages, meeting agenda announcements, etc... to facilitate timely and complete communications.
- Develop email distribution lists for key officials and agencies (update regularly) for major geographic regions.
- Develop a “To-Do” List using an Open Action Tracker (ICS-233). If feasible, project image or create Poster-size form and place in prominent location for entire group to maintain visibility of Open Action Items.
- Ensure key Agency Representatives are included whenever possible.
 - For incidents involving international trans-boundary issues and separate ICPs are established, ensure liaisons are integrated into the respective ICPs to optimize coordination between international regimes.

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- Ensure U.S. Department of State is contacted for any international trans-boundary incident.
- Staffing permitting, assign two Assistant Liaison Officers to facilitate group functionality. One Assistant would accompany the Liaison Officer at all meetings and maintain information loop for Liaison group while the second Assistant Liaison coordinates work of the Liaison Group as a whole.
- If feasible, establish wireless router for multiple computer users to facilitate communication/networking ability.
- Use “To-Go” or WEBex online meetings to maximize direct participation and interaction with key officials and stakeholders.
- Collaborate between Liaison and Joint Information Center if possible.
 - Work closely with IO/JIC to develop incident website content and messaging appropriate for officials’ briefings.

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Under Development

To be included in 2014.

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Chapter 9000
Appendix P Disposal
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Disposal Guidelines

Purpose

The purpose of this Guideline is to provide guidance for making a waste determination for proper disposal of materials (i.e. sorbents, solidifiers, etc) and debris (i.e. Personal Protective Equipment (PPE), rags, soil, etc.) impacted with hydrocarbons. This guidance describes the chronology of activities necessary for decision making for coordinating proper disposal of materials impacted with hydrocarbons in accordance with all local, state and federal regulations. In addition, Appendix A provides exemptions for Exploration and Production (E&P) Waste in accordance with US EPA guidance.

It should be noted ***that waste determinations are made by the generator of the waste*** such that the generator may: 1) manage the waste appropriately and legally (in accordance with all local, state and federal regulations); and 2) ***provide valid proof*** (i.e. analytical and/or MSDS) ***to the disposal facility*** regarding the matrix/constituents of the waste generated such that the disposal facility may make an acceptance determination as to whether they may accept the waste in compliance with their own operating permit(s).

Definitions

Discharge or hazardous waste discharge: The accidental or intentional spilling, leaking, pumping, pouring, emitting, emptying, or dumping of hazardous waste into or on any land or water.

Disposal: The discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

Disposal facility: A facility or part of a facility at which hazardous waste is intentionally placed into or on any land or water, and at which waste will remain after closure. The term disposal facility does not include a corrective action management unit into which remediation wastes are placed.

Exploration and Production Waste (E&P Waste) – drilling wastes, salt water, and other wastes associated with the exploration, development, or production of

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crude oil or natural gas wells and which is not regulated by the provision of, and, therefore, exempt from the Louisiana Hazardous Waste Regulations and the Federal Resource Conservation and Recovery Act, as amended. (LAC 43:XIX.501).

Hazardous Waste: See 40 CFR 261.3

Incinerator: Any enclosed device that:

- Uses controlled flame combustion and neither meets the criteria for classification as a boiler, sludge dryer, or carbon regeneration unit.
- Meets the definition of infrared incinerator or plasma arc incinerator.

Industrial Solid Waste – solid waste generated by a manufacturing, industrial, or mining process, or that is contaminated by solid waste generated by such a process. This term does not include hazardous waste regulated under the Louisiana hazardous waste regulations or under federal law, or waste that is subject to regulation under the LDNR Office of Conservation's Statewide Order No. 29-B or by other agencies (LAC 33:VII.115).

Landfill: A disposal facility or part of a facility where hazardous waste is placed in or on land and which is not a pile, a land treatment facility, a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground mine, a cave, or a corrective action management unit.

Oil: Oil of any kind or in any form, including, but not limited to: fats, oils, or greases of animal, fish, or marine mammal origin; vegetable oils, including oils from seeds, nuts, fruits, or kernels; and, other oils and greases, including petroleum, fuel oil, sludge, synthetic oils, mineral oils, oil refuse, or oil mixed with wastes other than dredged spoil.

Petroleum oil: Petroleum in any form, including but not limited to crude oil, fuel oil, mineral oil, sludge, oil refuse, and refined products.

Solid Waste: See 40 CFR 261.2

Solidifier: Product composed of dry high molecular weight polymers that have a porous matrix and large oleophilic surface area which form a physical bond with oil.

Sorbent: An insoluble material or mixture of materials used to recover liquids through the mechanisms of absorption or adsorption, or both including:

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Organic Compounds: Include, but are not limited to: peat moss; straw; cellulose fibers; cork; corn cobs; chicken, duck or other bird feathers, etc.

Mineral Compounds: Include, but are not limited to: volcanic ash, perlite, vermiculite, zeolite, etc.

Synthetics Products: Include, but are not limited to: polypropylene, polyethylene, polyurethane, polyester, etc.

Type I Facility – a facility used for disposing of industrial solid wastes (e.g., a landfill, surface impoundment, or land farm). (LAC 33:VII.115)

Waste Determination for Disposal Coordination

The Generator and/or Responsible Party (RP) are responsible for the characterization and classification of the waste stream. In addition, it is up to the discretion and acceptance criteria (i.e. state issued permit & operating procedures) of the disposal facility with respect to waste disposal.

In determining a waste stream's classification, a generator may use *process knowledge* and/or *analytical testing* by approved EPA methods (i.e. SW-846).

Process knowledge is applying knowledge of the hazardous characteristics of the waste in light of the materials or processes used. For example, a material safety data sheet (MSDS) may indicate that a material used in a process contains no hazardous constituents or exhibits no hazardous characteristic. The waste may be determined non-hazardous if the process itself contributes no hazardous constituents and does not result in the waste exhibiting a hazardous characteristic.

Analytical testing is information about a waste provided from laboratory analysis. Waste classification must be properly documented in a written and/or electronically stored format that is reasonably accessible and easily reproducible. The first step in classifying your waste is referred to as “making a *hazardous waste determination*.”

The waste determination will determine how and where (i.e. landfill, incinerator, etc.) the waste will be properly disposed. A hazardous waste determination is made based on the following questions:

- Is the waste a “solid waste?” Does it meet the regulatory definition of a “solid waste” in accordance with 40 CFR §261?

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- Is the waste a listed hazardous waste in accordance with 40 CFR §261?
- Does the waste exhibit any of four (4) characteristics: ignitability, corrosiveness, reactivity, or toxicity?
- Is the waste toxic?
- Is it a mixture?

If a hazardous waste and a non-hazardous waste are mixed, the resulting mixture may inherit the hazardous classification. Mixing in any amount of a listed waste will cause the mixture to be considered hazardous. Mixing in a characteristic waste will cause the mixture to become hazardous only if the mixture itself exhibits the characteristic.

Listed Hazardous Waste Determination

The EPA lists some 400 hazardous wastes. Descriptions of listed waste are found in 40 CFR Part 261, Subpart D, Sections 261.31–33. These wastes are often referred to as follows:

- “F” listed waste (waste from nonspecific sources, Section 261.31)
 - The first five F listed categories, F001-F005, cover a range of solvents used in a variety of applications.
- “K” listed waste (wastes from specific sources, Section 261.32)
- “P” listed waste (unused acutely hazardous off-specification materials as well as container residues and spill residues of these materials, Section 261.33)
 - There are about 239 different “acutely toxic” substances listed under about 135 different waste codes.
- “U” listed waste (unused toxic hazardous off-specification materials as well as container residues and spill residues of these materials, Section 261.33).
 - There are about 472 distinct materials listed under about 247 different waste codes.

Characteristic Hazardous Waste Determination Wastes may be hazardous if they display any of four characteristics: ignitability, corrosiveness, reactivity, or toxicity.

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Ignitability (D001)Wastes that are hazardous because they may ignite include the following:

- Liquid wastes (other than those aqueous waste containing less than 24 percent alcohol by volume) that have a flash point less than 60°C (140°F). (The test method is the Pensky-Martens closed cup tester, using the test method specified in ASTM Standard D-93-79 or D-93-80, or a Setaflash closed cup tester, using the test method specified in ASTM Standard D-3278-78.)
- Non-liquid wastes that, under standard temperature and pressure, are capable of causing fire through friction, absorption of moisture, or spontaneous chemical changes and, when ignited, burn so vigorously and persistently that they create a hazard.
- Wastes that meet the definition of an ignitable compressed gas (see 49 CFR Section 173.300).
- Wastes that meet the definition of an oxidizer (see 49 CFR Section 173.151).

Corrosiveness (D002) Wastes that are hazardous because they are corrosive include the following:

- Aqueous wastes with a pH of 2 units or below or of 12.5 units or above;
- A liquid wastes that corrode steel at a rate greater than 6.35 mm (0.250 inches) per year.

Reactivity (D003)A waste is considered reactive if it meets any of the following conditions:

- It is capable of detonation or explosive decomposition or reaction at standard temperature and pressure,
- If subjected to a strong ignition source, or if heated under confinement.
- When mixed with water, it is potentially explosive, reacts violently, or generates toxic gases or vapors.

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- If a cyanide or sulfide-bearing waste is exposed to pH conditions between 2 and 12.5, it can generate enough toxic gases, vapors, or fumes to present a danger to human health or the environment. Generally,
- If a waste generates 250 ppm or more of reactive cyanides or 500 ppm or more of reactive sulfides, it is considered a reactive waste. (It should be noted that these levels of reactive compounds are just guidance. Each waste must be evaluated for reactivity on a case-by-case basis).
- It is normally unstable and readily undergoes violent change without detonating.
- It is a forbidden explosive (as defined in 49 CFR 173.51, or a Class A explosive as defined in 49 CFR 173.53).
- It is a Class B explosive (see 49 CFR Section 173.88).

Toxicity (D004-D043) A waste is toxic if the toxicity characteristic leaching procedure (TCLP) shows that a representative sample from the waste contains one or more constituents at or above the levels listed in Table 3-1. The TCLP is described in EPA Method 1311 (SW-846).

For certain wastes, you can test waste for Total constituent content and apply the "Rule of Twenty" (apply the 20-fold dilution factor inherent in the TCLP method) to determine whether a sample has to be tested using the TCLP method. The TCLP test method is generally more expensive than the test required determining Total constituent concentrations. A TCLP test is not required if total analysis demonstrates that contaminants are not present or are present in such low concentrations they could not possibly exceed the toxicity regulatory limits. The assumption in the "Rule of Twenty" is that all of the contaminant of concern is dissolved in the extraction fluid, which is then analyzed. Since this calculation assumes a 100% extraction efficiency of the TCLP, it represents a conservative assumption that the waste is not TC hazardous. Therefore, if the analytical total concentration of a constituent in a solid is "x," and "x" divided by 20 is still less than the regulatory TCLP concentration, then the solid can be assumed not to fail the TCLP test and not to exhibit the hazardous characteristic of toxicity. **Note that this "rule" will not work for any waste that has greater than or equal to 0.5% liquids.** This calculation can only be used for materials that are in a solid form since liquids themselves (i.e., wastes containing less than 0.5% dry solid material) are defined as the TCLP extract; hence, the 20-fold dilution factor calculation is not relevant. Therefore, this procedure is acceptable for soils and other wastes in a dry, solid form.

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For the purpose of this guidance document, analytical testing should be utilized for disposal coordination with respect to spent materials impacted with hydrocarbons. Please note that it is up to the discretion of the disposal facility to accept the waste based on information provided regarding the waste. Once waste materials have been properly recovered, a representative sample of the waste should be obtained for analytical testing by an accredited environmental laboratory. Material Safety Data Sheets (MSDS) for the material released may be utilized for waste disposal profiling if the disposal facility allows, however, sampling provides a better representation of the waste stream.

Analytical testing should be as follows:

Diesel fuel impacted:

- Total Petroleum Hydrocarbons (TPH)
- Total Lead (Pb)
 - *Note that TCLP Pb may be required for acceptance by the landfill. See "Rule of Twenty" reference above.*
- Benzene, Toluene, Ethylbenzene, Xylene (BTEX)

Unleaded fuel impacted:

- Total Petroleum Hydrocarbons (TPH)
- Total Lead (Pb)
 - *Note that TCLP Pb may be required for acceptance by the landfill. See "Rule of Twenty" reference above.*
- Benzene, Toluene, Ethylbenzene, Xylene (BTEX)

Used Oil impacted:

- Total Petroleum Hydrocarbons (TPH)
- Total RCRA Metals
- Benzene, Toluene, Ethylbenzene, Xylene (BTEX)
- TOX

Virgin Oil impacted:

- Total Petroleum Hydrocarbons (TPH)

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- Total Lead (Pb)
 - *Note that TCLP Pb may be required for acceptance by the landfill. See "Rule of Twenty" reference above.*
- Benzene, Toluene, Ethylbenzene, Xylene (BTEX)

Crude Oil impacted:

- Total Petroleum Hydrocarbons (TPH)
- Total Lead (Pb)
 - *Note that TCLP Pb may be required for acceptance by the landfill. See "Rule of Twenty" reference above.*
- Benzene, Toluene, Ethylbenzene, Xylene (BTEX)

Once analytical results have been reported and the waste determination made, a waste profile will be required to be completed and submitted to the designated disposal facility. The waste profile is specific to each disposal facility. Therefore, contact the disposal facility to obtain a copy of their waste profile form. Analytical documentation and/or MSDSs will be required to be submitted with the waste profile before review and approval by the disposal facility. Please note that independent waste disposal facilities (i.e. landfills, incinerators, etc) have different acceptance criteria for wastes as prescribed in their permits.

For the sake of reference, the below is a list of Maximum Allowable Levels which differentiate between hazardous constituent and non hazardous constituents. If analytical methods determine that the analyzed levels are at or above these listed levels, then the waste is considered hazardous and will maintain the waste code associated with the waste.

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PARAMETER	WASTE CODE	MAX. ALLOWABLE LEVELS		ANALYTICAL METHODS
		TCLP (mg/L)	TOTAL (mg/kg)	
TCLP METALS				
Arsenic	D004	<5.0	100	SW-846-1311/SW-846-6010
Barium	D005	<100.00	2000	SW-846-1311/SW-846-6010
Cadmium	D006	<1.0	20	SW-846-1311/SW-846-6010
Chromium	D007	<5.0	100	SW-846-1311/SW-846-6010
Lead	D008	<5.0	100	SW-846-1311/SW-846-6010
Mercury	D009	<0.2	4	SW-846-1311/SW-846-7470
Selenium	D010	<1.0	20	SW-846-1311/SW-846-7740
Silver	D011	<5.0	100	SW-846-1311/SW-846-6010
TCLP VOLATILES				
Benzene	D018	<0.5	10	SW-846-1311/SW-846-8260
Carbon Tetrachloride	D019	<0.5	10	SW-846-1311/SW-846-8260
Chlorobenzene	D021	<100.0	2000	SW-846-1311/SW-846-8260
Chloroform	D022	<6.0	120	SW-846-1311/SW-846-8260
1,2-Dichloroethane	D028	<0.5	10	SW-846-1311/SW-846-8260
1,1-Dichloroethylene	D029	<0.7	14	SW-846-1311/SW-846-8260
Methyl Ethyl Ketone	D035	<200.0	4000	SW-846-1311/SW-846-8260
Tetrachloroethylene	D039	<0.7	14	SW-846-1311/SW-846-8260

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Trichloroethylene	D040	<0.5	10	SW-846-1311/SW-846-8260
Vinyl Chloride	D043	<0.2	4	SW-846-1311/SW-846-8260
TCLP SEMI-VOLATILES (Base Neutrals)				
1,4 Dichlorobenzene	D027	<7.5	150	SW-846-1311/SW-846-8270
Hexachlorobenzene	D032	<0.13	2.6	SW-846-1311/SW-846-8270
Hexachlorobutadiene	D033	<0.5	10	SW-846-1311/SW-846-8270
Hexachloroethane	D034	<3.0	60	SW-846-1311/SW-846-8270
Nitrobenzene	D036	<2.0	40	SW-846-1311/SW-846-8270
Pyridine	D038	<5.0	100	SW-846-1311/SW-846-8270
2,4-Dinitrotoluene	D030	<0.13	2.6	SW-846-1311/SW-846-8270
TCLP SEMI-VOLATILES (Acid Compounds)				
o-Cresol	D023	<200.0	4000	SW-846-1311/SW-846-8270
m-Cresol	D024	<200.0	4000	SW-846-1311/SW-846-8270
p-Cresol	D025	<200.0	4000	SW-846-1311/SW-846-8270
Cresol, Total	D026	<200.0	4000	SW-846-1311/SW-846-8270
Pentachlorophenol	D037	<100.0	2000	SW-846-1311/SW-846-8270
2,4,5-Trichlorophenol	D041	<400.0	8000	SW-846-1311/SW-846-8270
2,4,6-Trichlorophenol	D042	<2.0	40	SW-846-1311/SW-846-8270
TCLP HERBICIDES				
2,4-D	D016	<10.0	200	SW-846-1311/SW-846-8080
2,4,5-TP (Silvex)	D017	<1.0	20	SW-846-1311/SW-846-8080

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TCLP PESTICIDES				
Chlorodane	D020	<0.03	0.6	SW-846-1311/SW-846-8080
Endrin	D012	<0.02	0.4	SW-846-1311/SW-846-8080
Heptachlor	D031	<0.008	0.16	SW-846-1311/SW-846-8080
Lindane	D013	<0.4	8	SW-846-1311/SW-846-8080
Methoxychlor	D014	<10.0	200	SW-846-1311/SW-846-8080
Toxaphene	D015	<0.5	10	SW-846-1311/SW-846/8080
GENERAL				
pH	D002	≤ 2.0 ≥ 12.5		SW-846-9045
Ignitability (Liquids Only)	D001	>140o F (60o C)		SW-846-C7
Free Liquids		NO FREE LIQUIDS allowed at Landfills (must pass Paint Filter)		SW-846-9095
PCB's		<50 mg/kg or ppm		SW-846-8080
TPH		Varies by Disposal facility and/or disposal application		SW-846-8015, EPA 418.1 API- (GC/FID), ASTM-D3987-85/SW-846-9070

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REFERENCE AGENCIES AND/OR REFERENCES

- USEPA (40 Code of Federal Regulations (CFR))
- Railroad Commission of Texas (RRC) (Statewide Rule 98)
- <http://www.epa.gov/osw/inforesources/pubs/orientat/>

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US EPA E&P Waste Exemption

In 1988, the EPA issued a regulatory determination stating that control of E&P wastes under RCRA Subtitle C regulations is not warranted. E&P wastes have hence remained exempt from Subtitle C regulations. The RCRA Subtitle C exemption, however, did not preclude these wastes from control under state regulations, under the less stringent RCRA Subtitle D solid waste regulations, or under other federal regulations. In addition, although they are relieved from regulation as hazardous wastes, the exemption does not mean these wastes could not present a hazard to human health and the environment if improperly managed.

With respect to crude oil, primary field operations include activities occurring at or near the wellhead and before the point where the oil is transferred from an individual field facility or a centrally located facility to a carrier for transport to a refinery or a refiner.

With respect to natural gas, primary field operations are those activities occurring at or near the wellhead or at the gas plant, but before the point where the gas is transferred from an individual field facility, a centrally located facility, or a gas plant to a carrier for transport to market. Examples of carriers include trucks, interstate pipelines, and some intrastate pipelines.

Primary field operations include exploration, development, and the primary, secondary, and tertiary production of oil or gas. Crude oil processing, such as water separation, de-emulsifying, degassing, and storage at tank batteries associated with a specific well or wells, are examples of primary field operations. Furthermore, because natural gas often requires processing to remove water and other impurities prior to entering the sales line, gas plants are considered to be part of production operations regardless of their location with respect to the wellhead.

The exempt status of an E&P waste depends on how the material was used or generated as waste, not necessarily whether the material is hazardous or toxic. It is important to remember that *all* E&P wastes require proper management to ensure protection of human health and the environment.

Mixing exempt and non-exempt wastes creates additional considerations. Determining whether a mixture is an exempt or non-exempt waste requires an understanding of the nature of the wastes prior to mixing and, in some instances, might require a chemical analysis of the mixture. Whenever possible, avoid mixing non-exempt wastes with exempt wastes. If the non-exempt waste is a listed or characteristic hazardous waste, the resulting mixture might become a non-exempt waste and require management under RCRA Subtitle C regulation. Furthermore, mixing a characteristic hazardous waste with a non-hazardous or exempt waste for the purpose of rendering the

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hazardous waste non-hazardous or less hazardous might be considered a treatment process subject to appropriate RCRA Subtitle C hazardous waste regulation and permitting requirements.

In a policy letter dated September 25, 1997, EPA clarified that a mixture is exempt if it contains exempt oil and gas exploration and production (E&P) waste mixed with non-hazardous, non-exempt waste. Mixing exempt E&P waste with non-exempt characteristic hazardous waste, however, for the purpose of rendering the mixture non-hazardous or less hazardous, could be considered hazardous waste treatment or impermissible dilution.

Exempt and non-exempt E&P Waste is listed herein. Please consult with state regulations for state-specific waste exemptions.

Exempt E&P Waste:

- Produced water
- Drilling fluids
- Drill cuttings
- Rig wash
- Drilling fluids and cuttings from offshore operations disposed of onshore
- Geothermal production fluids
- Hydrogen sulfide abatement wastes from geothermal energy production
- Well completion, treatment, and stimulation fluids
- Basic sediment, water, and other tank bottoms from storage facilities that hold product and exempt waste
- Accumulated materials such as hydrocarbons, solids, sands, and emulsion from production separators, fluid treating vessels, and production impoundments
- Pit sludge and contaminated bottoms from storage or disposal of exempt wastes
- Gas plant dehydration wastes, including glycol-based compounds, glycol filters, and filter media, backwash, and molecular sieves
- Work over wastes

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- Cooling tower blow-down
- Gas plant sweetening wastes for sulfur removal, including amines, amine filters, amine filter media, backwash, precipitated amine sludge, iron sponge, and hydrogen sulfide scrubber liquid and sludge
- Spent filters, filter media, and backwash (assuming the filter itself is not hazardous and the residue in it is from an exempt waste stream)
- Pipe scale, hydrocarbon solids, hydrates, and other deposits removed from piping and equipment prior to transportation
- Produced sand
- Packing fluids
- Hydrocarbon-bearing soil
- Pigging wastes from gathering lines
- Wastes from subsurface gas storage and retrieval, except for the non-exempt wastes listed herein
- Constituents removed from produced water before it is injected or otherwise disposed of
- Liquid hydrocarbons removed from the production stream but not from oil refining

Non-Exempt E&P Waste:

- Unused fracturing fluids or acids
- Gas plant cooling tower cleaning wastes
- Painting wastes
- Waste solvents
- Oil and gas service company wastes such as empty drums, drum rinsate, sandblast media, painting wastes, spent solvents, spilled chemicals, and waste acids

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- Vacuum truck and drum rinsate from trucks and drums transporting or containing non-exempt waste
- Refinery wastes
- Liquid and solid wastes generated by crude oil and tank bottom re-claimers
- Used equipment lubricating oils
- Waste compressor oil, filters, and blow-down
- Used hydraulic fluids
- Waste in transportation pipeline related pits
- Caustic or acid cleaners
- Boiler cleaning wastes
- Boiler refractory bricks
- Boiler scrubber fluids, sludge, and ash
- Incinerator ash
- Laboratory wastes
- Sanitary wastes
- Pesticide wastes
- Radioactive tracer wastes
- Drums, insulation, and miscellaneous solids

Although non-E&P wastes generated from crude oil and tank bottom reclamation operations (e.g., waste equipment cleaning solvent) are non-exempt, residuals derived from exempt wastes (e.g., produced water separated from tank bottoms) are exempt. For a further discussion, see the Federal Register notice, Clarification of the Regulatory Determination for Waste from the Exploration, Development, and Production of Crude Oil, Natural Gas and Geothermal Energy, March 22, 1993, Federal Register Volume 58, Pages 15284 to 15287.

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Reference: Exemption of Oil and Gas Exploration and Production Wastes from Federal Hazardous Waste Regulations, EPA530-K-01-004, October 2002

Oil Spill Waste Management –In Louisiana, the regulatory responsibilities of waste/materials generated during an oil spill(s) are shared by the Louisiana Department of Environmental Quality (LDEQ) and Louisiana Department of Natural Resources, Office of Conservation (LDNR). LDEQ has authority over any industrial, municipal, or medical waste(s) as defined in LAC 33:VII generated during an oil spill. While LDNR has authority over any E&P waste(s) generated as defined in LAC 43:XIX.

LDEQ E&P Waste Exemptions

The following solid wastes are not subject to the provisions of the LDEQ's solid waste regulations (LAC 33:VII, Parts 1 and 2): produced-waste fluids and mud resulting from the exploration for or production of petroleum and geothermal energy, and all surface and storage waste facilities, incidental to oil and gas exploration and production, within the jurisdiction of the Department of Natural Resources, Office of Conservation. LAC 33:VII.301.A.1.c. This exemption applies specifically to E&P Wastes Type 1 (Salt Water (produced brine or produced water), Type 2 (Oil-based drilling wastes (mud, fluids, and cuttings), and Type 16 (Crude oil spill cleanup waste).

The following solid waste are not subject to the provisions of the LDEQ's hazardous waste regulations (LAC 33:V.Subpart 1): drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas, or geothermal energy (LAC 33:V.105.D.2.e.)

Solid Waste Management

Debris from the Oil Spill shall be managed in accordance with the LDEQ Comprehensive Plan for Disaster Clean-up and Debris Management ("the DMP") (revised September 29, 2010 or current version). Specifically, portions of Section 9, "Final Disposal Options," address oil contaminated debris and hazardous waste.

Additional Solid Waste Management requirements may be required by any Emergency Declaration and Administrative Orders issued by the State of Louisiana and/or the LDEQ.

Waste(s) under the jurisdiction of the LDNR will be managed in accordance with their rules, regulations, and/or emergency orders.

Waste Categories

Louisiana has identified the following categories of waste/materials to be managed during a crude oil spill. Tables C-1 and C-2 include guidance from the LDEQ and LDNR regarding the classification(s) and disposal options for identified E&P waste.

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Waste Stream	Waste Classification	State	Disposal/Treatment Option
Disposable Oil Booms – Oil has been removed to the extent practical	Solid Waste/Industrial Waste	Solid	Disposed of at a LDEQ-permitted Type I landfill
Containment booms – Final Disposal – Oil has been removed to extent practical			
Oil Contaminated Rags, Gloves, Disposal Personal Protective Equipment, etc.			
Oil Contaminated Debris – Cups, Styrofoam Containers, etc.			
Tar balls / tar patties			
Oil Contaminated Soils and Vegetative Debris	E&P waste, waste type 16, Crude oil spill clean-up waste	Solid	Disposed of at LDNR permitted transfer station or commercial facility site or at LDEQ-permitted Type 1 landfill.
Containment Booms – Wash-off waste fluids and solids not contaminated with hazardous waste.	E&P waste, waste type 16, Crude oil spill clean-up waste	Liquid	Dispose of at approved LDNR permitted site
Oily Wastewater not contaminated with hazardous waste	LA Department of Wildlife and Fisheries	Solid	This will be managed by LDWF and will only be managed as a waste, if and when directed by
Dead or Injured Wildlife			

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Oil Removed from Booms	E&P waste, waste type 16, crude oil spill cleanup waste or waste type 50, salvageable hydrocarbons bound for permitted salvage oil operators	Liquid	the agency. Disposed of at approved LDNR permitted site.
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Other materials/waste that can be expected:

	Material Type/Waste Stream	State	Disposal/Reclaim/Recycle Option
Crude oil skimmed from the water and spill source or Oil removed from booms	Reclaimable/Recyclable oil/E&P Waste	Liquid	Recovered Oil
Potential hazardous waste collected as part of oil spill cleanup operations	Potential hazardous waste	Liquid/Solid/Mixed	Approved RCRA Permitted TSD facility
Uncontaminated Trash (Food waste, wrappings, paper, cardboard, soda can, etc.)	Municipal Trash	Liquid/Solid/Mixed	Disposed of at LDEQ Permitted Type II facility
Plastic bottles and aluminum cans	Recyclables	Solid	Recycling Facility

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The Responsible Party (RP) shall develop oil spill specific plans necessary to characterize and manage the wastes generated pursuant to applicable Federal, State, and local requirements. These plans may include waste sampling and analysis plans, waste management plans, site safety plans, SPCC, etc.

Waste Recovery and Recycling

The RP will develop a strategy to facilitate the reclamation or recycling of as much materials/oil as practical prior to sending the material for disposal. These strategies may include but not be limited to the following:

- Recovery of oil prior to disposal;
- Reuse/recycling of containment boom;
- Recycling of municipal solid waste such as paper, aluminum, plastics, etc.

The RP will also develop Best Management Plan(s) (BMP) and/or Standard Operation Procedures (SOP) which will include waste/material management procedures for the collection, staging, transportation, and final disposal/recycling of the waste/materials.

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Louisiana Type 1 and 2 Solid Waste Landfills (Source LDEQ Webpage)

Parish	Master AI #	Name	Company Phone	Type 1	Type 2	Facility's physical address
Acadia	20036	Acadia Parish Police Jury- Acadia Parish Sanitary Landfill	(337)783-4834		X	611 Petal Rd. Egan, LA 70531
Allen	52277	IESI Corp- Timerlane Landfill	(337) 753-2296	X		1158 Landfill Rd. Oakdale, LA 71463
Ascension	4803	BFI- Colonial Landfill	(225) 675-8021	X	X	5328 Hwy 70 Sorrento, LA 70778
Ascension	51910	Belle Co LLC- Landfill	(225) 473-7251	X	X	4 Mi N of HWYs 70 & 1 Donaldsonville LA 70346
Calcasieu	324	BFI- Woodland Hill Landfill	(337) 882-1477	X	X	2500 HWY 108 S Sulphur LA 70663
Jefferson	6961	Jefferson Parish Sanitary Landfill	(504) 436-0152	X	X	5800 HWY 90 W Avondale, LA 70094
Jefferson	32219	River Birch Inc- River Birch Landfill	(504) 436-1288	X	X	2000 S Kenner Ave Avondale, LA 70094
Jefferson Davis	12389	Jefferson Davis Parish Sanitary Landfill Commission	(337) 734-4135	X	X	16157 Landfill Rd Welsh, LA 70591
St. Mary	9340	St Mary Parish Government- Harold J "Babe" Landry Landfill	(985) 385-4531	X	X	752 Thorguson Dr. Berwick, LA 70342
Plaquemines	20061	Tidewater Landfill LLC- Coast Guard Road Sanitary Landfill	(504) 361-0094	X	X	266 Coast Guard Rd. Venice, LA 70091
Vermilion	148	Vermilion Parish Police Jury- Municipal Landfill	(337) 898-4228		X	HWY 696 Meaux, LA 70555

A complete list of LDEQ permitted solid waste landfills can be found at the link below:

<http://www.deq.louisiana.gov/portal/DIVISIONS/WastePermits/SolidWastePermits.aspx>

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Louisiana E&P Commercial Facilities (Source DNR SONRIS/2000 Database)

Parish	Site Id	Name	Company Phone	Type	Facility's Physical Address
Acadia	101	Guillory Tank Truck Service	(337) 684-6741	B	200 Saltwater Lane Eunice, La 70535
Acadia	102	Saline Injection Systems Co	(337) 783-5028	B	219 Sisco Road Egan, LA 70531
Acadia	104	Habetz Oilfield Saltwater Serv	(337) 783-4677	B	P.O. Box 1552 Crowley, LA 70527
Ascension	301	Colonial Solid Waste Landfill	(225) 252-9038	DE	5328 Hwy 70 Sorrento, LA 70778
Calcasieu	1003	Louisiana Tank, Inc	(337) 436-1000	B	Old Town Road Lake Charles, LA 70615
Calcasieu	1005	Chemical Waste Management	(337) 583-3613	A	7170 John Brannon Road Sulphur, LA 70665
Cameron	1205	Newpark Environmental Services – Cameron	(888) 984-4445	T	434 Davis Road Cameron, LA 70631
Cameron	1207	US Liquids of LA - Cameron	(337) 824-3194	T	Wakefield Road Cameron, LA 70631

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Jefferson	2602	River Birch - Avondale	(504) 436-1288	DE	2000 South Kenner Road Avondale, LA 70094
Jefferson Davis	2701	US Liquids of LA - Mermentau	(337) 824-3194	A	Hwy 90 East Jennings, LA 70546
Jefferson Davis	2704	SWD, Inc	(337) 433-5929	B	18342 Miller Oilfield Road Iowa, LA 70647
Jefferson Davis	2705	MBO, Inc Lacassine	(337) 588-4558	A	19141 GRO Racca Road Iowa, LA 70647
Jefferson Davis	2707	CHI - Jennings	(337) 824-8184	B	4050 Hwy 1126 Jennings, LA 70546
Lafourche	2901	US Liquids of LA - Bourg	(337) 824-3194	A	771 Bourg-Larose Hwy Bourg, LA 70343
Lafourche	2910	Newpark Environmental Services - Fourchon I	(888) 984-4445	T	17th Street Pass Fourchon, LA 70357
Lafourche	2911	US Liquids of LA - Port Fourchon	(337) 824-3194	T	17th Street at E-Slip Pass Fourchon, LA 70357

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Lafourche	2913	Newpark Environmental Services - Fourchon II	(888) 984-4445	T	16th StreetGolden Meadow, LA 70357
Lafourche	2919	US Liquids of LA - Port Fourchon 2	(337) 824-3194	T	153 17th Street Port Fourchon, LA 70357
Plaquemines	3809	Newpark Environmental Services - Venice	(888) 984-4445	T	213 Coast Guard Rd Venice, LA 70091
Plaquemines	3813	US Liquids of LA - Venice	(337) 824-3194	T	367 Tidewater Road Venice, LA
Plaquemines	3815	Premier Environmental SFI	(985) 626-8758	A	20487 Hwy 15 Bohemia, LA
St. Martin	5001	FAS Environmental Services	(985) 252-8825	B	1081 "B" Hwy Pierre Part, LA 70339
St. Martin	5002	FAS Environmental Services	(985) 252-8825	T	Atchafalaya River Basin Belle River, LA 70339
St. Mary	5101	US Liquids of LA - Bateman Island	(337) 824-3194	A	On Intracoastal Waterway Bateman Island, LA 70381
St. Mary	5102	Newpark Environmental Services - Morgan City	(888) 984-4445	T	Hwy 90 East Morgan City, LA 70381

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St. Mary	5108	PSC Industrial Outsourcing, Inc.	(337) 233-4889	A	LA Hwy 87 Jeanerette, LA 70544
St. Mary	5109	US Liquids of LA - Berwick	(337) 824-3194	T	Berry Bros Dock Berwick, LA 70342
St. Mary	5111	US Liquids of LA - MCY	(337) 824-3194	T	1200 Youngs Road Morgan City, LA 70380
Terrebonne	5501	Houma SaltWater Disposal Corp	(985) 868-2477	B	1034 Coteau Road Houma, LA 70364
Terrebonne	5503	Houma SaltWater Disposal	(985) 868-2477	T	1035 Coteau Road Houma, LA 70364
Vermilion	5703	Newpark Environmental Services - Intracoastal City Yard	(888) 868-2477	T	Broussard Bros Doc Intracoastal City, LA 70510
Vermilion	5710	US Liquids of LA - Intracoastal City Yard	(337) 824-3194	T	24915 Highway 333 Intracoastal City, LA 70519

A complete list of LDNR E&P Waste Facilities can be found at the links below:

List: http://reports.dnr.state.la.us/reports/rwservlet?SRCN4683O_p

Map: http://dnr.louisiana.gov/assets/OC/env_div/ep_waste_sec/LA_Commercial_Facilities_102610.pdf

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Louisiana Commercial Hazardous Waste Treatment, Storage and Disposal Facilities (TSDF)

Parish	Master #	Name	Company Phone	Facility's Physical Address	HW ID No.
East Baton Rouge	1516	Clean Harbors Baton Rouge, LLC	(225) 778-3511	13351 Scenic Highway, Baton Rouge, LA 70807	LAD010395127
Rapides	32096	Clean Harbors Colfax, LLC	(318) 627-3443	3763 Highway 471 Colfax, LA 71417	LAD981055791
Tangipahoa	24512	Lamp Environmental	(985) 345-4775	46257 Morris Road, Hammond, LA 707401	LAO000365668
Calcasieu	742	Chemical Waste Management	(337) 583-2169	7170 John Brannon Road, Sulphur, LA 70665	LAD000777201
East Baton Rouge	1314	Rhodia, Inc	(225) 359-3722	1275 Airline Highway, Baton Rouge, LA 70805	LAD008161234

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Area Permit and
Consultation Guide

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**Chapter 9000 Appendices, Appendix Q Southeast Louisiana Area Permit
and Consultation Guide**

Under Development

To be included 2014.

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Area Response Resource Inventory

Introduction

This Appendix contains the response resource information specific to the Southeast Louisiana Area Committee's Area of Responsibility from the National Strike Force Coordination Center's (NSFCC) Response Resource Inventory database. Oil Spill Response Organizations (OSROs) and Non-OSRO entities are encouraged to input and maintain owned spill response equipment in this database for inclusion to this appendix. Equipment can be registered at: <https://cgrri.uscg.mil>.

Government and non-OSRO equipment owners can also register equipment in the NSFCC's Response Resource Inventory. Government Agencies and Non-OSROS can register by calling (252) 331-6000.

Resources

Booms

Booms are devices for controlling the spread of oil to reduce the chance of polluting shorelines and other natural resources.

Boom Types

The different types of booms are listed and explained below:

Curtain- flexible skirt which is free to move independently of the floats.

Fence- a rigid or semi-rigid material as a vertical screen against oil floating on the water.

Fire- includes both fence and curtain types, which is designed to withstand the heat and stress of in-situ burning.

Intertidal- uses air or foam for buoyancy and water for ballast. It floats free at high tide and seals to the mud or sand at low tide. When grounded, the heavy water ballast seals the boom to the shoreline and prevents oil from moving along the intertidal zone.

Other- any type of boom that is not curtain, fence, fire, or intertidal boom.

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Connector Types

Boom connector- a boom end-connector device permanently attached to a boom and used for joining boom section to one another or to other devices associated with it. The following list contains the type of connectors:

ANSI Connector- built to the standard defined by the American National Standards Institute.

ASTM Connector- built to the specifications of the American Society of Testing and Materials. The ASTM specifications define it as a quick Z-connector which is secured with a self-locking cross pin attached to each end of the boom by a lanyard, long enough to reach the cross pin hole.

Bolt Connector- used by inserting through matching holes in the fabric on both ends of the boom and secured with a nut or wing nut.

Quick Connector- jointed and secured with a wing nut or pin. There is no male or female connector to worry about; this allows any two ends to be joined.

Slide Connector- the Slide Connector has a male and female attachment on opposite ends of the boom.

Slotted Tube Connector- the Slotted Tube Connector has a plastic slotted tube which slides over a seated rope in each end of the boom. There is no male or female connector.

Universal Slide Connector- two ends that slide together from top or bottom. There is no male or female connector, so any two can be joined, as long as one is up and one is down.

Other Connector- a Connector that is not ANSI, ASTM, Bolt, Quick, Slide, Slotted Tube, or Universal Slide Connector.

Boom Height

The height of the boom is the total height above and below the waterline of a boom and is measured in inches (in). The height is calculated by using the following formula: Boom Height = Freeboard + Draft. The boom freeboard is the vertical height measurements of the boom above the water line. This measurement includes the inflated float and is measured in inches. The boom draft is the length of the boom directly under the floatation.

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Boom Length

The total length of the boom from one end to the other. The measurement should be in feet.

Boom Weight

The total weight of the boom is the weight of all lengths of boom at a site. The measurement is made in pounds (lbs.)

Boom Storage Volume

The total cubic storage area required for all boom at a site. The measurement is calculated by using the following formula: **Height x Width X Length= Cubic Feet** (cu.ft.).

Boom Status

The status of the boom is one or more of the following:

Available- an indicator of the availability of a particular resource item outside the local area (COTP Zone).

Dedicated- determines if the boom is ONLY able to operate with oil spills and not hazardous substances.

Packaged- an indicator that the resource is packaged for transportation. The number of packages of a resource is the number of individual packages of the resource that are contained in the total length of the resource at a site.

Skimmers

A device used to remove spilled oil from the surface of the water through means of mechanical suction, adhesion, absorption, or some similar mechanism of action that allows separation and recovery of spilled oil from the water's surface. Skimmers may be self-propelled, towed, or pushed through the water.

Skimmer Types

The following is a description of the types of skimmers.

Air- an Air Skimmer is a Vacuum system or an air conveyer attached to a hose which may be fitted with specially designed skimmer heads.

Belt Adhesion- a Belt Adhesion Skimmer provides either (a) upward rotating belts which carry the oil squeezed off into a storage tank, or (b) downward rotating belts which first submerge the oil; which then surfaces behind the belt into a defined area within the vessel.

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Disc Adhesion- a Disk Type of Skimmer provides disks which rotate through the oil. Oil adheres to the disk surface and is then removed by a scraper to a central point and is pumped to storage.

Oleophilic- an Oleophilic Rope Adhesion Skimmer has a central tension core rope, forming a long continuous mop. The floating mop is pulled by powered rollers around a return pulley. The oleophilic surface of the rope causes the oil to adhere and rollers squeeze the oil into a tank.

Vortex Suction- a Vortex Suction type Skimmer is induced by an impeller and causes the oil to concentrate at the center of the vortex due to centrifugal effects. The collected oil is pumped from the top and the free water released from the bottom.

Weir Suction- a Weir Suction Skimmer uses the force of gravity to cause the oil floating on the surface of the water to flow over a self-leveling weir into the well of the skimmer. It is then pumped to storage.

Other- a skimmer type that is not Air, Belt Adhesion, Disc Adhesion, Oleophilic, Vortex Suction, or Weir Suction type skimmer.

Skimmer Measurements

The following is a list of measurements for a skimmer resource.

Skimmer Pump Capacity- the flow rate for a pump associated with a skimmer. Measurements are made in gallons per minute (Gpm).

Skimmer Quantity- the quantity of a skimmer resource that is owned and located at an organization site of a particular skimmer type. Quantity measurement is a number.

Skimmer Weight- Weight is the total weight of a single skimmer. This is important information for logistics. Measurement is made in pounds (lb).

Skimmer Status

The status of the skimmer is one or more of the following:

Available- an indicator of the availability of a particular resource item outside of the COTP Zone.

Dedicated- determines if the skimmer is ONLY available to operate with oil spills.

Transportable- an indicator that the resource can be transported.

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Temporary Storage

Resources that provide a capacity to contain and hold material recovered during an oil spill incident. Temporary Storage may also provide the facility to transport these materials from the spill site.

Temporary Storage Types

Temporary Storage Equipment consists of the following types:

Inflatable- an inflatable device such as a rigid dracone or bladder that can be used as a portable site for recovered oil.

Modular Storage Container- modular Storage containers are a type of portable storage.

Oil Storage Bag- Oil Storage Bags are a type of portable storage.

Tank Truck- a Tank Truck is considered a portable storage device.

Temporary Storage Draft

The draft is the depth of the temporary storage beneath the water. The measurement is made in feet (ft).

Temporary Storage Capacity

The capacity is the amount of oil storage capacity a temporary storage unit has. The measurement is made in gallons (gal).

Temporary Storage Quantity

The quantity of a temporary storage resource that is owned and located at an organization site. Quantity measurement is a number.

Temporary Storage Weight

The total weight of the Temporary Storage is the weight in pounds (lb). This is an important measurement for logistic information.

Vacuum Systems

A resource that has a vacuum system for removing oil. It usually provides the capability for storage and the transport of the oil away from the spill site.

Vacuum System Measurements

The following list describes the measurements necessary for vacuum systems:

Vacuum Rate- the Vacuum Rate is the maximum number of gallons per minute the pump on the vacuum system is able to vacuum.

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Vacuum Holding Capacity- the Holding Capacity is the maximum number of gallons a vacuum system is able to hold.

Vacuum Quantity- the quantity of a vacuum system resource that is owned and located at an organization site.

Vacuum System Status

The status of the vacuum system resource is one of more of the following:

Skimming Capable- determines if the vacuum system has skimming capabilities.

Available- an indicator of the availability of a particular resource item outside the COTP Zone.

Dedicated- determines is the system is ONLY capable to cleanup oil spills.

Solid Capable- determines is the vacuum system us able to operate for solid substances.

Liquid Capable- determines is the vacuum system is able to operate in liquid substances.

Vessels

Boats or other water forms of transportation that are able to aid during an oil spill incident.

Vessel Type

The following are the vessel description types of the RRI, *Crane Barge, Deck Barge, Hotel Barge, Jon Boat, Trawler, Utility Work Boat, and Other.*

Vessel Name

The name given and registered for the vessel.

Vessel Length

The Vessel Length is the total length of the vessel from bow to stern, measures in feet (ft).

Vessel Beam

Vessel Beam is the width of the vessel at the widest point or at the mid-point of the length. The beam is measured in feet (ft).

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Vessel Draft

The vertical distance between the waterline and the bottom of the vessel hull.

Vessel Weight

The Vessel Weight is the total weight of the vessel. This is important information of logistics. Measurement is made in pounds (lb).

Vessel Storage Capacity

The maximum number of gallons a Vessel is able to hold.

Vessel Quantity

The quantity of a vessel resource that is owned and located at an organization site. Quantity measurement is a number.

Vessel Status

The status of a vessel is one or more of the following:

Skimming Capable- determines if the vessel has skimming capabilities.

Available- an indicator of the availability of a particular resource item outside the Captain of the Port Zone.

Dedicated- determines if the equipment is used ONLY for oil spills.

Night Capabilities- determines if the vessel is operable in the night/dark.

Shallow Water- determines if the vessel is able to operate properly in shallow water.

Packaged- an indicator that the resource is packaged transportation.

Number of Packages- the number of individual packages of the resource that are contained in the total length of the resource at a site.

Equipment on Board

Additional equipment on board the vessel should be entered in the text box provided.

Beach Cleaners

Resources used to clean spilled oil from a beach area.

Beach Cleaner Types

Beach cleaners consist of the following types:

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Manual Cleaners- Manual Beach Cleaning involves the use of shovels, rakes, sorbents, and hand pickup to clean areas of a beach. Used in areas where mechanical cleaning is impractical or would damage a sensitive environment. Most manual cleaning involves the use of ordinary construction equipment.

Mechanical Cleaners- Mechanical Beach Cleaners include most commercially manufactured beach cleaning equipment. Mechanical Cleaners are designed for use on flat sandy or mud beaches. In their simplest form, mechanical cleaners include specialized equipment either self propelled or attached to tractors or road equipment.

Mechanical/Hydraulic- Mechanical/Hydraulic Beach Cleaner is specializes mechanical cleaner attached to tractors or road equipment and uses hydraulic propulsion.

Paddle Belt- a Paddle Belt Beach Cleaner operates like a paddle belt skimmer except it picks up the oiled beach surface.

Screening Belt- a Screening Belt type of Beach Cleaner transports surface beach materials up a conveyor belt, deposits them in a truck or processes them and returns the cleaned sand to the beach.

Vacuum Washer- Vacuum/Washing Beach Cleaners are mobile vacuum equipment. In many cases, the units also provide for water washing. Oil adhering to various surfaces is first washed off, and then recovered with the vacuum. Vacuum beach cleaning is usually done where there is good road access. Vacuum trucks and portable units are frequently used in such areas.

Sorbent- *i.e., Pads, booms, pillows, particulates, granules, etc.*

Other- any type of beach cleaner that is not a manual cleaner, mechanical cleaner, mechanical/hydraulic, paddle or screening belt, vacuum washer, or sorbent beach cleaner.

Beach Cleaner Weight

The total weight of the beach cleaner.

Beach Cleaner Quantity

The quantity of a Beach Cleaner resource that is owned and located at an organization site.

Beach Cleaner Status

The status of the beach cleaner is one or more of the following:

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Available- an indicator of the availability of a particular resource item outside the COTP Zone.

Transportable- an indicator the resource can be transported. Any details about whether the resource is packaged or not and how it can be transported.

Packaged- an indicator that the resource is packaged for transportation.

Self Supported- an indicator whether a Beach Cleaner can operate under its own power.

Dispersants

Chemicals that are used to react with oil in water. The active ingredient in dispersants is surface active agents or surfactants. Surfactants have varying actions toward water and oil.

Dispersant Quantity

Quantity is the only measurements for a dispersant resource. Quantity measurement is a number.

Dispersant Status

The status of the dispersant is one or more of the following.

Available- an indicator of the availability of a particular resource item outside the COTP Zone.

Transportable- an indicator that the resource can be transported.

Packaged- an indicator that the resource is packaged for transportation.

Dispersant Delivery

Systems used in spill cleanup to apply dispersant rapidly, particularly over slicks which cover a large area.

Dispersant Delivery Types

Systems used in spill cleanup to apply dispersants rapidly, particularly over slicks which cover a large area. The types of Dispersant Delivery Types in the RRI are plane and vessel.

Dispersant Delivery Status

The status of the dispersant delivery resource is one or more of the following:

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Available- an indicator of the availability of a particular resource item outside the COPT Zone.

Transportable- an indicator that the resource can be transported.

Packaged- an indicator that the resource is packaged for transportation.

Firefighting Equipment

A broad range of equipment used in fighting marine fires.

Firefighting Equipment Types

Firefighting equipment types in the RRI are broken into three types. Foam stockpile, vessel, and other.

Weight

The weight is the total weight of the selected type of firefighting equipment. The weight measurement is made in pounds (lb).

Quantity

The Quantity of the selected type of firefighting equipment resource that is owned and located at an organization site. Quantity measurement is a number.

Firefighting Equipment Status

The status of the firefighting equipment is one or more of the following:

Available- an indicator of the availability of a particular resource item outside the COTP Zone.

Transportable- an indicator that the resource can be transported.

Package- an indicator that the resource is packaged for transportation.

Oily Water Separators

Oily Water Separators (OWS) physically separate oil from oily water. The OWS are used as a secondary cleanup method, and have oil water input and non-harmful discharge water output.

OWS Types

The following is a list of OWS types:

Centrifuge- A Centrifuge type OWS uses centrifugal forces to separate the oil and water.

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Coalescing- A Coalescing type OWS uses oleophilic material to cause the oil in the water to adhere for easier separation.

Filter- A Filter type OWS uses a filtering mechanism to separate the oil from water.

Gravity- A Gravity type OWS uses natural gravity forces to separate oil from water.

Other- A type of OWS that is not Centrifuge, Coalescing, Filter, or Gravity.

OWS Measurements

The following is a list of measurements for OWS resources.

OWS Capacity- The capacity is the flow rate for an OWS. The measurement is made in gallons per minute (gpm).

OWS Discharge Capacity- The discharge capacity of an OWS is the value of the amount of oil in the water being discharges by an OWS. The measurement for discharge capacity is parts per million (ppm).

OWS Weight- The total weight of the OWS. This is important information for logistics. The measurement is made in pounds (lb).

OWS Quantity- The quantity of an OWS resource that is owned and located at an organization site

OWS Status

The status of an OWS resource is one or more of the following:

Available- an indicator of the availability of a particular resource item outside the COTP zone.

Transportable- An indicator that the resource can be transported.

Packaged- An indicator that the resource is packaged for transportation.

Product Transfer Pumps

Product Transfer Pump Types

Archimedean Screw- Developed especially for moving highly viscous oil mixed with debris. It is referred to variously as screw pump, positive displacement pump, and Archimedean Screw Pump. It employs a progressive Archimedean screw, generally with

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sharp blades, to move the viscous oil to almost any elevation. It has almost no suction and simply drives the oil up and out of the tank or hopper.

Bladeless- A series of parallel flat or concave discs attach to a powered shaft. When a fluid is introduced at the center of these rotating discs, boundary layer drag on both sides of the discs imparts energy to it. The fluid moves in an outward helical path, discharging into a diffuser outside the pump case.

Centrifugal- Uses spinning impeller vanes to increase velocity of the fluid as it moves from the center of the pump to the outer edge.

Diaphragm- Uses a pumping action which results from alternative compression and relation of a specially designed resilient hose. The hose is compressed between the inner wall of the housing and the compression shoes on the rotor. A liquid lubricant in the housing minimizes sliding friction. The fluid being pumped is in contact only with the inner wall of the hose. During compression, abrasive particles in the fluid are cushioned in the thick inner hose wall- returning to the fluid stream after compression. The pump has no seats, seals, or valves. It is self priming and is designed for industrial use.

Peristaltic- Uses a pumping action which results from alternate compression and relation of a specially designed resilient hose. The hose is compressed between the inner wall of the housing and the compression shoes on the rotor. The liquid lubricant in the housing minimizes sliding friction. The fluid being pumped is in contact only with the inner wall of the hose. During compression, abrasive particles in the fluid are cushioned in the thick inner hose wall- returning to the fluid stream after compression. The pump has no seats, seals, or valves. It is self priming and is designed for industrial use.

Progressive Cavity- A positive displacement type of pump that reciprocates with rubber pistons. The pumping action results from rotation of three or more eccentric discs fitting into three plastic displacement chambers (shoes) lined with synthetic. Each disc reciprocates horizontally in its shoe, like a piston in cylinder. At the same time it makes the shoe reciprocate vertically, so that ports in the base of the shoe alternatively open and close discharge ports. Delivery from each shoe is intermittent.

Other- A transfer pump type that is not Archimedean Screw, Bladeless, Centrifugal, Diaphragm, Peristaltic, Progressive Cavity, and Sliding Shoe.

Product Transfer Pump Measurements

Transfer Pump Transfer Rate

Transfer Pump Weight- This is the total weight of the resource.

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Transfer Pump Quantity- The quantity of the resource that is owned and located at an organization site.

Product Transfer Pump Status

Available- A indicator of the availability of a particular resource item outside the COPT zone.

Transportable- An indicator that the resource can be transported.

Dedicated- An indicator that the piece of equipment is used ONLY for oil cleanup.

Support Equipment

Miscellaneous logistical support equipment that is used to supplement other oil spill removal resources.

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Southeast Louisiana Response Resource Inventory

Jefferson Parish

Bertucci Industrial Services

#7 RIVER ROAD,
JEFFERSON, LA 70181

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
RANDY PARISH,

Contact Email:
placeholder@placeholder.com

OSRO Number:
5

Phone:
(504)733-8899

FAX:
(504)733-0720

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	ABASCO	Universal Slide	~	18	1500

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

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No Dispersants Registered

VESSELS

Vessel Type	Vessel Name	Quantity	Official State #	Length	Horse Power	Storage Capacity	Equipment on Board
Other	~	1	N/A	25	600	0	~
Deck Barge	~	1	N/A	110	0	0	~
Deck Barge	~	3	N/A	180	0	100	~
Other	~	1	N/A	12	75	0	~
Other	~	1	N/A	16	425	0	~
Other	~	1	N/A	40	600	0	~

SKIMMERS

No Skimmers Registered

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

River Ridge

100 Florida Street,
River Ridge, LA 70123

COTP Zone:

New Orleans - DISTRICT 8

EPA Region:

Region - 6

Point of Contact:

Tony Cunningham , Michelle Matoka tony@midgulfrecovery.com

Contact Email:**OSRO Number:**

393

Phone:

(504)737-1600

FAX:

(504)737-1660

Status:

Owned

BOOMS

No Booms Registered

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

VESSELS

No Vessels Registered

SKIMMERS

No Skimmers Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Support Equipment Registered

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

USES - Harvey

3540 River Road,
Harvey, LA 70058

COTP Zone:

New Orleans - DISTRICT 8

EPA Region:

Region - 6

Point of Contact:

Dennis Schenck, Jose Delgado

Contact Email:

dschenck@usesgroup.com

OSRO Number:

38

Phone:

(888)279-9930

FAX:

(504)279-7756

Status:

Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	ACME PRODUCTS CO.	Universal Slide	~	18	2000

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

VESSELS

Vessel Type	Vessel Name	Quantity	Official State #	Length	Horse Power	Storage Capacity	Equipment on Board
John Boat	~	1	LA	16	25	0	Loaded on trailer

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

SKIMMERS

No Skimmers Registered

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Premier Industries Harvey

3450 Peters Rd.,
Harvey, LA 70058

COTP Zone:

New Orleans - DISTRICT 8

EPA Region:

Region - 6

Point of Contact:

Bill Darby, Sam Poole

Contact Email:

bdarby@prem-ind.com

OSRO Number:

374

Phone:

(985)774-3446

FAX:

(504)394-3773

Status:

Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	**NOT A LISTED MANUFACTURER	ANSI	lamore slickbar	18	15000

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

VESSELS

No Vessels Registered

SKIMMERS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Skimmers Registered

VACUUM SYSTEMS

Vacuum Truck/Trailer	VIN	Holding Capacity (gallons)	Vacuum Rate (Gpm)	Quantity
TRUE	2fzhade86av69396	2940	66	1
TRUE	1npsl70x3cd13626	2940	66	1
TRUE	1htwysbt4bj177365	2940	66	1
TRUE	1htwysb9bj177345	2940	66	1

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Marine Pollution Control (New Orleans, LA)

1136 5th ST.,
Gretna, LA 70053

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Mike Popa, Jeff Stamper

Contact Email:
placeholder@placeholder.com

OSRO Number:
3

Phone:
(313)849-2333

FAX:
(313)849-1623

Status:
Owned

BOOMS

No Booms Registered

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

VESSELS

No Vessels Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

SKIMMERS

No Skimmers Registered

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

Transfer Pump Type	Manufacturer	Power Source	Transfer Rate (Gpm)	Transportable Quantity	
Centifugal	**NOT A LISTED MANUFACTURER	Diesel	2200	TRUE	1

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Poydras

2505 Buccaneer Dr.,
Marrero, LA 70072

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Adam Evans,

Contact Email:
aevans70072@gmail.com

OSRO Number:
407

Phone:
(757)831-1093

FAX:
~

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	ACO POLYMER PRODUCTS, INC.	Other	~	18	40000

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

VESSELS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Vessel Type	Vessel Name	Quantity	Official State #	Length	Horse Power	Storage Capacity	Equipment on Board
Deck Barge	~	1	LA7834	78	0	150000	~

SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Drum	BRENNER STAINLESS	TDS-118	42	0	5

VACUUM SYSTEMS

Vacuum Truck/Trailer	VIN	Holding Capacity (gallons)	Vacuum Rate (Gpm)	Quantity
TRUE	~	50000	100	1

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

TEMPORARY STORAGE

Storage Type	Manufacturer	Model	Draft	Storage Capacity	Quantity
Inflatable	ASPRA, INC	~	0	100000	2

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Bertucci Industrial Services

19 Veterans Memorial Blvd,
Kenner, LA 70062

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Jeff Hall,

Contact Email:
bis@bisnola.com

OSRO Number:
5

Phone:
(504)628-1165

FAX:
(504)733-0720

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	AMERICAN BOOM & BARRIER CORP.	Quick	RIVER BOOM	18	1500

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VESSELS

Vessel Type	Vessel Name	Quantity	Official State #	Length	Horse Power	Storage Capacity	Equipment on Board
Utility Work Boat	SB-1	1	LA 3310 ES	28	230	0	Boom deployment Personnel movement
Utility Work Boat	~	5	~	16	25	0	

SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Air/suction	**NOT A LISTED MANUFACTURER	DUCKBILL	300	0	1
Air/suction	**NOT A LISTED MANUFACTURER	DUCKBILL	200	0	2

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Oily Water Separators Registered

TEMPORARY STORAGE

Storage Type	Manufacturer	Model	Draft	Storage Capacity	Quantity
Other	**NOT A LISTED MANUFACTURER	SALVAGE DRUM	1	85	100
Other	**NOT A LISTED MANUFACTURER	DOT17H	1	55	100

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

PERSONNEL

Employment Category	Full Time On Site	Full Time Off Site	Part Time On Site	Part Time Off Site
Supervisor	~	~	5	0
Operator/Technician	~	~	10	0
Laborer	~	~	2	15
Other	~	~	~	~
Pilot	~	~	~	~
Aerial Observer	~	~	~	~

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Industrial Cleanup, Inc. (ICI)

Associated Gulf Coast Responders, 1213 River Road
Westwego, LA 70094

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Rustin D. Johnson, President, Ron A.
Kirsch, Vice President

Contact Email:
placeholder@placeholder.com

**OSRO
Number:**
23

Phone:
(800)436-0883

FAX:
(504)436-3140

Status:
Owned

BOOMS

No Booms Registered

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

VESSELS

No Vessels Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

SKIMMERS

No Skimmers Registered

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

OMI-NES (Gretna, LA)

1125 Fourth Street,
Gretna, LA 70053

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Donald J. Nalty Jr., Joseph J.
Smith

Contact Email:
placeholder@placeholder.com

**OSRO
Number:**
12

Phone:
(504)362-8850

FAX:
(504)361-5372

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	**NOT A LISTED MANUFACTURER	Universal Slide	STD	18	2500
Curtain	**NOT A LISTED MANUFACTURER	Universal Slide	STD	18	3200
Curtain	**NOT A LISTED MANUFACTURER	Universal Slide	STD II	19	450
Curtain	**NOT A LISTED MANUFACTURER	Universal Slide	STD	18	1000
Curtain	**NOT A LISTED MANUFACTURER	Universal Slide	River	10	900

BEACH CLEANERS

No Beach Cleaners Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

DISPERSANTS

No Dispersants Registered

VESSELS

No Vessels Registered

SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Weir/Suction	**NOT A LISTED MANUFACTURER	DD3	230	0	3
Weir/Suction	**NOT A LISTED MANUFACTURER	DD2	160	0	2
Weir/Suction	**NOT A LISTED MANUFACTURER	GR3	278	0	1
Weir/Suction	FOILEX AB	TDS200	290	0	1
Other	**NOT A LISTED MANUFACTURER	C44E	110	0	1
Other	**NOT A LISTED MANUFACTURER	C14E	7	0	1
Other	**NOT A LISTED MANUFACTURER	CV46H	110	0	1
Other	**NOT A LISTED MANUFACTURER	ORD Magna	120	0	1
Other	**NOT A LISTED MANUFACTURER	ORD (LT)	30	0	2
Other	**NOT A LISTED MANUFACTURER	ORD	50	0	3

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VACUUM SYSTEMS

Vacuum Truck/Trailer	VIN	Holding Capacity (gallons)	Vacuum Rate (Gpm)	Quantity
TRUE	~	1680	165	2

PRODUCT TRANSFER PUMPS

Transfer Pump Type	Manufacturer	Power Source	Transfer Rate (Gpm)	Transportable	Quantity
Diaphragm	**NOT A LISTED MANUFACTURER	Air	230	TRUE	3
Diaphragm	**NOT A LISTED MANUFACTURER	Air	160	TRUE	2
Centifugal	GORMANN-RUPP CO.	Diesel	278	TRUE	1

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

Storage Type	Manufacturer	Model	Draft	Storage Capacity	Quantity
FIXED FACILITY TANK	**NOT A LISTED MANUFACTURER	IMTT A#A-103	1	630000	1
FIXED FACILITY TANK	**NOT A LISTED MANUFACTURER	IMTT A#B-1	1	70392	1

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

FIXED FACILITY TANK	**NOT A LISTED MANUFACTURER	IMTT G#111	1	72072	1
FIXED FACILITY TANK	**NOT A LISTED MANUFACTURER	IMTT G#110	1	106344	1
FIXED FACILITY TANK	**NOT A LISTED MANUFACTURER	IMTT G#108	1	70392	1

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

Employment	Full Time On	Full Time Off	Part Time On	Part Time Off
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Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Category	Site	Site	Site	Site
Supervisor	~	~	~	~
Operator/Technician	~	~	21	0
Laborer	~	~	20	0
Other	~	~	~	~
Pilot	~	~	~	~
Aerial Observer	~	~	~	~

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

National Response Corporation (New Iberia, LA)

5619 Port Road, c/o AMPOL
New Iberia, LA 70562

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Mike Noel,

Contact Email:
iocdo@nrcc.com

OSRO Number:
16

Phone:
(281)899-4848

FAX:
(281)899-4849

Status:
Owned

BOOMS

No Booms Registered

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

VESSELS

No Vessels Registered

SKIMMERS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Disc Adhesion	**NOT A LISTED MANUFACTURER	Weir Disc Skimmer WD-102	200	0	1

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

USES Box - Marrero

5000 River Rd,
Marrero, LA 70072

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Dennis Schenck, Jose Delgado

Contact Email:
dschenck@usesgroup.com

OSRO Number:
38

Phone:
(888)279-9930

FAX:
(504)279-7756

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	CONTAINMENT SYSTEMS	Quick	River	18	600

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VESSELS

No Vessels Registered

SKIMMERS

No Skimmers Registered

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

St. James Parish

OMES

6410 St. James Terminal Rd,
St James , LA 70086

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Robert George,

Contact Email:
robertgeorge@omies.com

OSRO Number:
12

Phone:
(800)645-6671

FAX:
~

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	ABASCO	Quick	Beta-I B	18	1000

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VESSELS

No Vessels Registered

SKIMMERS

No Skimmers Registered

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

OMES

1601 4th Street,
Harvey, LA 70058

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Robert George,

Contact Email:
robertgeorge@omies.com

OSRO Number:
12

Phone:
(800)645-6671

FAX:
(504)367-7567

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	ACME PRODUCTS CO.	Quick	~	18	10000

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VESSELS

No Vessels Registered

SKIMMERS

No Skimmers Registered

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Plaquemines Parish

USES Venice LA

42156 Highway 23 S, P. O. Box 830
Venice, LA 70091

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact: Dennis Schenck, Buddy Boudreaux	Contact Email: dschenck@usesgroup.com	OSRO Number: 38
Phone: (888)279-9930	FAX: (504)534-2013	Status: Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	ACME PRODUCTS CO.	Universal Slide	~	18	1800
Curtain	ACME PRODUCTS CO.	Universal Slide	~	18	2000
Curtain	ACME PRODUCTS CO.	Universal Slide	~	18	2000
Curtain	ACME PRODUCTS CO.	Universal Slide	~	18	8000

BEACH CLEANERS

No Beach Cleaners Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

DISPERSANTS

No Dispersants Registered

VESSELS

Vessel Type	Vessel Name	Quantity	Official State #	Length	Horse Power	Storage Capacity	Equipment on Board
John Boat	~	3	LA	16	25	0	On trailers
John Boat	~	7	LA	16	25	0	~
Utility Work Boat	~	1	LA6396FG	30	450	0	~
Utility Work Boat	~	1	LA6801FU	26	230	0	~
Utility Work Boat	~	1	LA6800FU	26	230	0	~
Utility Work Boat	~	1	LA4893FX	36	500	0	~
Utility Work Boat	~	1	LA4004FX	36	500	0	Radar, GPS, VHF-FM, Generator, A/C

SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Drum	**NOT A LISTED	Crucial	85	0	2

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Drum	MANUFACTURER	1D18P-24	85	0	1
	**NOT A LISTED MANUFACTURER	Crucial 1D18P-36			

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

Transfer Pump Type	Manufacturer	Power Source	Transfer Rate (Gpm)	Transportable Quantity	
Centrifugal	**NOT A LISTED MANUFACTURER	Gas	132	TRUE	6
Other	**NOT A LISTED MANUFACTURER	Diesel	132	TRUE	2
Other	**NOT A LISTED MANUFACTURER	Diesel	400	TRUE	1
Diaphragm	**NOT A LISTED MANUFACTURER	Air	115	TRUE	2
Diaphragm	**NOT A LISTED MANUFACTURER	Air	80	TRUE	3
Centrifugal	**NOT A LISTED MANUFACTURER	Diesel	170	TRUE	2

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Storage Type	Manufacturer	Model	Draft	Storage Capacity	Quantity
Other	**NOT A LISTED MANUFACTURER	Open Top Steel Overpack	0	85	3
Other	**NOT A LISTED MANUFACTURER	Open Top Steel Drum	0	55	5
Other	**NOT A LISTED MANUFACTURER	Poly Overpack	0	95	4

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

Equipment	Type/Make	Quantity
Pickup Trucks	~	9
Pick-up Trucks	2 WD	3
Trailer	20' Emergency Response	1
Sorbent Boom	Ergon, 5", 40' Bag	150
Oil Snare	~	50

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Wildlife Scare-away Guns	~	4
Cellular Phones	Nationwide Coverage	30
Command Base	Motorola, 851-855 MHZ	1
Handheld Radio	MTX 8000	27
Trailer	Response	1
Trailer	Response	1
Sorbent Pads	Bale/100	350
Sorbent Boom	5", 40' Bag	150
Sorbent Boom	8", 40' Bag	250
Handheld Radio	MTX 8000	10
Trailer	Response	1
Sorbent Roll	Ergon, 100'	10
Sorbent Pads	Ergon, 100/Bale	300
Sorbent Boom	Ergon, 8", 40' Bag	250

PERSONNEL

Employment Category	Full Time On Site	Full Time Off Site	Part Time On Site	Part Time Off Site
Supervisor	~	~	1	0
Operator/Technician	~	~	4	0
Laborer	~	~	~	~
Other	~	~	~	~
Pilot	~	~	~	~
Aerial Observer	~	~	~	~

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

ES&H - BELLE CHASSE

2305 N. Concord Road,
BELLE CHASSE, LA 70037

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact: TREY BOUCVALT, Kevin Lormand placeholder@placeholder.com	Contact Email: placeholder@placeholder.com	OSRO Number: 50
Phone: (504)340-0336	FAX: (504)340-0326	Status: Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	ACME PRODUCTS CO.	Universal Slide	~	10	1000
Curtain	ACME PRODUCTS CO.	Universal Slide	~	18	1000

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VESSELS

Vessel Type	Vessel Name	Quantity	Official State #	Length	Horse Power	Storage Capacity	Equipment on Board
John Boat	~	1	LA 7968 FK	16	25	0	~
John Boat	~	1	LA 3839 FM	16	25	0	~
Utility Work Boat	Responder #4	1	LA 6192 FR	26	300	0	Radar, GPS, VHF radio
Utility Work Boat	Responder #10	1	LA-3002-FD	26	230	0	Radar, GPS, VHF Radio
John Boat	~	1	LA-3783-EN	16	25	0	~
John Boat	~	1	LA-3782-EN	16	25	0	~

SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Drum	ELASTEC, INC.	TDS-118	35	0	6
Drum	ELASTEC, INC.	TDS-136	70	1	4

VACUUM SYSTEMS

No Vacuum Systems Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

PRODUCT TRANSFER PUMPS

Transfer Pump Type	Manufacturer	Power Source	Transfer Rate (Gpm)	Transportable Quantity	
Centifugal	**NOT A LISTED MANUFACTURER	Gas	210	TRUE	15
Centifugal	**NOT A LISTED MANUFACTURER	Diesel	100	TRUE	2
Diaphragm	**NOT A LISTED MANUFACTURER	Gas	88	TRUE	1
Diaphragm	**NOT A LISTED MANUFACTURER	Gas	88	TRUE	9

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

Equipment	Type/Make	Quantity
Generator	5KW	2
NEXTEL 2-WAY RADIO/PHONE	COMMUNICATIONS EQUIPMENT	6
PRESSURE WASHER	DECONTAMINATION EQUIPMENT	3
PORTABLE PRINTER	OFFICE EQUIPMENT	1
LAPTOP COMPUTER	OFFICE EQUIPMENT	1
FAX MACHINE	COMMUNICATIONS EQUIPMENT	1
COPY MACHINE	OFFICE EQUIPMENT	1
GLOBAL POSITIONING SYSTEM	COMMUNICATIONS EQUIPMENT	1
2-WAY RADIO	COMMUNICATIONS EQUIPMENT	1
SENSIDYNE GAS DET. PUMP	SAFETY EQUIPMENT	2
MSA PASSPORT AIR MONITOR	SAFETY EQUIPMENT	2
10 CFM AIR COMPRESSOR	DECONTAMINATION EQUIPMENT	6
CALIBRATION KIT	SAFETY EQUIPMENT	2
MARINE VHF RADIO	COMMUNICATIONS EQUIPMENT	2
PRINTER	OFFICE EQUIPMENT	1
COMPUTER MONITOR AND CPU	OFFICE EQUIPMENT	1

PERSONNEL

Employment Category	Full Time On Site	Full Time Off Site	Part Time On Site	Part Time Off Site
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Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Supervisor	~	~	1	0
Operator/Technician	~	~	4	0
Laborer	~	~	~	~
Other	~	~	~	~
Pilot	~	~	~	~
Aerial Observer	~	~	~	~

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Belle Chasse

10624 Highway 23,
Belle Chasse, LA 70037

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
JD Futch,

Contact Email:
jd.futch@ilesllc.com

OSRO Number:
322

Phone:
(504)912-5458

FAX:
(504)322-7137

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	ACME PRODUCTS CO.	ASTM	6x12 boom	18	6000

BEACH CLEANERS

Beach Cleaner Type	Manufacturer	Model	Quantity
Vacuum Washer	**NOT A LISTED MANUFACTURER	barrel vacuum 55 gallon	1
Manual Cleaner	**NOT A LISTED MANUFACTURER	rakes	150
Mechanical Hydraulic	**NOT A LISTED MANUFACTURER	hotsy unit	2
Sorbent	**NOT A LISTED MANUFACTURER	sorbent pad bales	50

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Manual Cleaner	**NOT A LISTED MANUFACTURER	~	50
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DISPERSANTS

No Dispersants Registered

VESSELS

Vessel Type	Vessel Name	Quantity	Official State #	Length	Horse Power	Storage Capacity	Equipment on Board
OSRV	~	1	LA 9532-FW	30	280	0	~
OSRV	~	1	LA 9531-FW	30	280	0	~
OSRV	~	1	LA 8541-FW	30	280	0	~
OSRV	~	1	LA 8543-FW	34	280	0	~
OSRV	~	1	LA 8542-FW	34	280	0	~

SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Drum	**NOT A LISTED MANUFACTURER	~	35	0	5

VACUUM SYSTEMS

Southeast Louisiana Area Contingency Plan

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Vacuum Truck/Trailer	VIN	Holding Capacity (gallons)	Vacuum Rate (Gpm)	Quantity
TRUE	~	4000	35	1
TRUE	~	3300	35	1
TRUE	~	3800	35	1

PRODUCT TRANSFER PUMPS

Transfer Pump Type	Manufacturer	Power Source	Transfer Rate (Gpm)	Transportable	Quantity
Centrifugal	**NOT A LISTED MANUFACTURER	Hydraulic	50	TRUE	2
Diaphragm	**NOT A LISTED MANUFACTURER	Air	35	TRUE	2

OILY WATER SEPARATORS

Separator Type	Manufacturer	Model	Flow Rate (Gpm)	Discharge Capacity	Quantity
Centrifuge	**NOT A LISTED MANUFACTURER	~	5000	20	3

TEMPORARY STORAGE

Storage Type	Manufacturer	Model	Draft	Storage Capacity	Quantity
Modular Storage Container	**NOT A LISTED MANUFACTURER	Tidal Tank 180 Round Bttm Frac Tank	0	21000	5

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

Equipment Type	Model	Quantity
Other	flame retardant suites	2
Other	6 inch suction hose w camlock 120 feet	1
Other	5 inch supply line fire hose 500 feet	1
Other	2000 gallon water truck	1
Other	purple k fire extinguisher	3

SUPPORT EQUIPMENT

Equipment	Type/Make	Quantity
life jackets	~	50
4 gas detect meter	~	1
chain saws	~	8
weed eaters	~	11
scba cylinders	~	10
scba	~	10
tyvex suits	white	500
hotsy unit	~	2
hose/pipe quick couplers	~	15
cell phones	~	25

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

safety cones	~	500
barricades	~	110
hoses suction / discharge	2 inch/ 200 foot	2
hoses suction / discharge	3 inch/ 300 foot	2
welder	millers	1
light plant / generator	~	1
all terrain utility vehicles	Polaris	9
utility trailers	16 foot	3
skid steers	bobcat	2
mini excavator	bobcat	1
excavators	cat	2
Dump truck	~	1
Box truck	~	1
Pickup trucks	~	10
Decontamination Trailers	16 foot	6
Response Trailers	20 foot	1

PERSONNEL

Employment Category	Full Time On Site	Full Time Off Site	Part Time On Site	Part Time Off Site
Supervisor	4	0	7	0
Operator/Technician	2	0	3	0
Laborer	8	0	2	0
Other	0	0	0	0
Pilot	0	0	0	0
Aerial Observer	0	0	0	0

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Premier Industries Oil Spill Response

308 Halliburton Rd.,
Venice, LA 70091

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Bill Darby,

Contact Email:
bdarby@prem-ind.com

OSRO Number:
374

Phone:
(504)362-5440

FAX:
(504)394-3773

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	**NOT A LISTED MANUFACTURER	ANSI	Lamore Slickbar	18	15000

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VESSELS

Vessel Type	Vessel Name	Quantity	Official State #	Length	Horse Power	Storage Capacity	Equipment on Board
Other	Premier Explorer	1	d527280	208	2200	0	20 ton dynamic Crain 4 ea mooring wenches 150 ton ea. fast rescue craft 22 aluminum work boat full coms package global nav package coast guard certs certified marine crew

SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Drum	**NOT A LISTED MANUFACTURER	Crucial Model 1D18P-36	35	0	4

VACUUM SYSTEMS

Vacuum Truck/Trailer	VIN	Holding Capacity (gallons)	Vacuum Rate (Gpm)	Quantity
FALSE	~	10	500	4

PRODUCT TRANSFER PUMPS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Transfer Pump Type	Manufacturer	Power Source	Transfer Rate (Gpm)	Transportable Quantity	
Centrifugal	**NOT A LISTED MANUFACTURER	Diesel	500	TRUE	8

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

Storage Type	Manufacturer	Model	Draft	Storage Capacity	Quantity
Tank Trucks	**NOT A LISTED MANUFACTURER	~	0	4200	11
Other	**NOT A LISTED MANUFACTURER	250bbl marine cargo transport tank	0	10500	10
Other	**NOT A LISTED MANUFACTURER	500bbl marine cargo transport tank	0	21000	24

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

Southeast Louisiana Area Contingency Plan

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FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

Equipment	Type/Make	Quantity
PPE	tyvek	1788
sorbent sweep	bales	1650
pom poms 60ft rope	bales	4000
15"x18" sorbent pads	bales	2000
8" sorbent boom	bales	864
5" sorbent boom	bales	9000
16ft Response Trailer	enclosed	1
25hp out board motors	Suzuki	2
14ft flat boats	alweld	11
F-350 Ford Van	13 passenger	1
Forklift	6 ton / taylor	1
Forklift	4 ton Ingersol Rand	1
Forklift	10 ton Hoist	1
Crain	Manitowoc 4000w 150 ton 120ft boom	1

PERSONNEL

Employment Category	Full Time On Site	Full Time Off Site	Part Time On Site	Part Time Off Site
Supervisor	1	0	1	2
Operator/Technician	2	0	0	10
Laborer	0	0	0	50
Other	0	0	0	0
Pilot	0	0	0	0
Aerial Observer	0	0	0	0

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

USES - JW Stone

2003 Concord Road,
Belle Chasse, LA 70037

COTP Zone:

New Orleans - DISTRICT 8

EPA Region:

Region - 6

Point of Contact:

Dennis Schenck,

Contact Email:

dschenck@usesgroup.com

OSRO Number:

38

Phone:

(888)279-9930

FAX:

(504)279-7756

Status:

Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	ACME PRODUCTS CO.	Universal Slide	~	18	2000

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VESSELS

No Vessels Registered

SKIMMERS

No Skimmers Registered

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

National Response Corporation (Belle Chasse, LA)

2305 N Concord Road, ES&H
Belle Chasse, LA 70037

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Mike Noel,

Contact Email:
iocdo@nrcc.com

OSRO Number:
16

Phone:
(281)899-4848

FAX:
(281)899-4849

Status:
Owned

BOOMS

No Booms Registered

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

VESSELS

No Vessels Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Weir	VIKOMA INTERNATIONAL LTD	Fasflo Skimmer FFP-010	805	0	1

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Phillips PSC /VENICE
40360 HIGHWAY 23 SOUTH,
BOOTHVILLE, LA 70038

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact: MIKE STEVENS, DAN SHARLOU	Contact Email: placeholder@placeholder.com	OSRO Number: 25
Phone: (800)797-9992	FAX: (504)534-2876	Status: Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Other	CONTAINMENT SYSTEMS	Quick	~	18	2000

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

VESSELS

Vessel Type	Vessel Name	Quantity	Official State #	Length	Horse Power	Storage Capacity	Equipment on Board
John Boat	~	2	la	14	25	0	~
Other	~	1	la	18	115	0	~

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

SKIMMERS

No Skimmers Registered

VACUUM SYSTEMS

Vacuum Truck/Trailer	VIN	Holding Capacity (gallons)	Vacuum Rate (Gpm)	Quantity
FALSE	~	0	60	1
FALSE	~	0	75	2

PRODUCT TRANSFER PUMPS

Transfer Pump Type	Manufacturer	Power Source	Transfer Rate (Gpm)	Transportable	Quantity
Other	**NOT A LISTED MANUFACTURER	Diesel	416	TRUE	2
Other	**NOT A LISTED MANUFACTURER	Air	205	TRUE	4
Other	**NOT A LISTED MANUFACTURER	Air	135	TRUE	2

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

Storage Type	Manufacturer	Model	Draft	Storage Capacity	Quantity
Modular	**NOT A LISTED	U.S.C.G.	0	10500	20

Southeast Louisiana Area Contingency Plan

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Storage Container	MANUFACTURER	APPROVED			
Other	**NOT A LISTED MANUFACTURER	U.S.C.G. APPROVED	0	630	15
Other	**NOT A LISTED MANUFACTURER	~	0	1100	25
Other	**NOT A LISTED MANUFACTURER	~	0	1	1

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

Equipment	Type/Make	Quantity
2 WAY RADIO	MOTOROLA HAND HELD	2
CELLULAR PHONE	MOTOROLA	1
CELLULAR PHONES	MOTOROLA	2
85 LB. ANCHORS	DANFORTH	5
SPILL RESPONSE TRAILER	~	1
2 TON PICK UP TRUCKS	FORD	2
PICK UP TRUCKS	FORD	4

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

PERSONNEL

Employment Category	Full Time On Site	Full Time Off Site	Part Time On Site	Part Time Off Site
Supervisor	~	~	4	0
Operator/Technician	~	~	10	0
Laborer	~	~	~	~
Other	~	~	~	~
Pilot	~	~	~	~
Aerial Observer	~	~	~	~

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Clean Harbors Environmental (Belle Chasse, LA)

251 Walker Road,
Belle Chasse, LA 70037

COTP Zone:

New Orleans - DISTRICT 8

EPA Region:

Region - 6

Point of Contact:

Don Caldera,

Contact Email:

caldera.don@cleanharbors.com

OSRO Number:

13

Phone:

(504)656-8288

FAX:

(504)656-0709

Status:

Owned

BOOMS

No Booms Registered

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

VESSELS

No Vessels Registered

SKIMMERS

No Skimmers Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Belle Chasse Office

101 Herman Dr,
Belle Chasse, LA 70037

COTP Zone:

New Orleans - DISTRICT 8

EPA Region:

Region - 6

Point of Contact:

Scott Butaud, Gordan Rice

Contact Email:

sbutaud@triadresponsegroup.com

OSRO Number:

385

Phone:

(504)392-4099

FAX:

(504)394-7220

Status:

Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	**NOT A LISTED MANUFACTURER	Universal Slide	~	8	100
Curtain	**NOT A LISTED MANUFACTURER	Universal Slide	~	12	700
Curtain	**NOT A LISTED MANUFACTURER	Universal Slide	~	18	2500

BEACH CLEANERS

Beach Cleaner Type	Manufacturer	Model	Quantity
Manual Cleaner	**NOT A LISTED MANUFACTURER	~	200

DISPERSANTS

No Dispersants Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VESSELS

No Vessels Registered

SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Other	**NOT A LISTED MANUFACTURER	2-4D Rope Mop	260	0	1
Other	**NOT A LISTED MANUFACTURER	TDS-118	260	0	1
Other	**NOT A LISTED MANUFACTURER	Markleen Multiskimmer MS 30	500	0	1
Drum	**NOT A LISTED MANUFACTURER	TDS-118	260	0	2

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

Transfer Pump Type	Manufacturer	Power Source	Transfer Rate (Gpm)	Transportable	Quantity
Centifugal	**NOT A LISTED MANUFACTURER	Gas	189	TRUE	2

OILY WATER SEPARATORS

No Oily Water Separators Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

Equipment Type	Model	Quantity
Other	20 Fire & Safety Trailer	1

SUPPORT EQUIPMENT

Equipment	Type/Make	Quantity
Tanks	15 BBL	2
Pickup Truck	Ford F-350 Dually 4x4	1
Pickup Truck	Ford F-350 4x4	1
Containment Boom trailer	24 Pace	1
Oil Spill Trailer	32 VMA/PAMU	1
Air Compressor	10 CFM Air Compressor	2
Diaphragm Pump	3" Diaphragm Pump (gas)	1
Wash Pump	2" Cetifugal	2

PERSONNEL

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Employment Category	Full Time On Site	Full Time Off Site	Part Time On Site	Part Time Off Site
Supervisor	3	0	0	0
Operator/Technician	4	0	0	0
Laborer	0	0	0	200
Other	1	0	0	0
Pilot	0	0	0	0
Aerial Observer	0	0	0	0

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

National Response Corporation (Belle Chasse, LA)

145 Keating Drive, Oil Mop
Belle Chasse, LA 70037

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Mike Noel,

Contact Email:
iocdo@nrcc.com

OSRO Number:
16

Phone:
(281)899-4848

FAX:
(281)899-4849

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	**NOT A LISTED MANUFACTURER	Universal Slide	Inflatable Sweep BM43-363	42	200

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VESSELS

No Vessels Registered

SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Belt Adhesion	MARCO POLLUTION CONTROL	Class XI AB-113	3500	0	1
Weir/Suction	ACME PRODUCTS CO.	WH-226	1	0	1

VACUUM SYSTEMS

Vacuum Truck/Trailer	VIN	Holding Capacity (gallons)	Vacuum Rate (Gpm)	Quantity
FALSE	VTU 226	1008	6857	1

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

PREPO - Fort Jackson/Venice Site

c/o Louisiana Responder, 100 Herbert Harvey Lane
Buras, LA 70041

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Tony Palmisano, Tony Palmisano

Contact Email:
palmisanot@msrc.org

OSRO Number:
22

Phone:
(800)259-6772

FAX:
(504)433-4146

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	**NOT A LISTED MANUFACTURER	Universal Slide	LAMOR Ocean	67	5280
Curtain	ENGINEERED FABRICS CORPORATION	Slide	Sea Sentry II 23-44	67	2640
Curtain	ACME PRODUCTS CO.	ANSI	OK Corral	18	100
Curtain	SLICKBAR PRODUCTS CORP.	ASTM	Mk 7-24"	24	1000
Curtain	ENGINEERED FABRICS CORPORATION	Slide	Sea Sentry II 23-44	67	2640

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Dispersants Registered

VESSELS

Vessel Type	Vessel Name	Quantity	Official State #	Length	Horse Power	Storage Capacity	Equipment on Board
OSRB	MSRC 452	1	D588572	310	0	1890000	~
OSRV	Louisiana Responder	1	D983115	210	3000	756000	~
Other	~	2	123	48	0	16800	non-self propelled SBS
Utility Work Boat	~	2	123	28	630	0	~

SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Disc Adhesion	**NOT A LISTED MANUFACTURER	Crucial Disk 88/30	1622	0	2
Other	FOILEX AB	FOILEX 200	290	0	1
Weir/Suction	**NOT A LISTED MANUFACTURER	STRESS I	2310	0	1
Weir	FOILEX AB	Foilex 250	580	0	1
Weir/Suction	PHAROS MARINE	GT-185	200	0	1
Weir/Suction	DE SMITHSKE A/S	DESMI OCEAN	440	0	1
Other	FRANK MOHN A/S	TRANSREC 350	1541	0	1

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Weir/Suction	**NOT A LISTED MANUFACTURER	Walosep W4	440	0	1
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VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

Transfer Pump Type	Manufacturer	Power Source	Transfer Rate (Gpm)	Transportable Quantity	
Other	DE SMITHSKE A/S	Diesel	440	TRUE	4

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

Equipment	Type/Make	Quantity
HPU	Type 3	1
HPU	Type 2	4
HPU	Type 1	3

PERSONNEL

Employment Category	Full Time On Site	Full Time Off Site	Part Time On Site	Part Time Off Site
Supervisor	0	0	1	0
Operator/Technician	0	0	4	0
Laborer	0	0	0	0
Other	6	0	0	0
Pilot	~	~	~	~
Aerial Observer	~	~	~	~

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Calcasieu Parish

Clean Harbors Environmental (Sulphur, LA)

3201 Petro Drive,
Sulphur, LA 70663

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Peri Bryan, Brad Dickes

Contact Email:
bryan.peri@cleanharbors.com

OSRO Number:
13

Phone:
(337)882-1025

FAX:
(337)882-1029

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	**NOT A LISTED MANUFACTURER	Universal Slide	~	18	3000

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VESSELS

Vessel Type	Vessel Name	Quantity	Official State #	Length	Horse Power	Storage Capacity	Equipment on Board
John Boat	~	1	LA	18	25	0	~
John Boat	V291	1	LA	18	25	0	~
Utility Work Boat	V283	1	LA	22	115	0	~

SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Disc Adhesion	**NOT A LISTED MANUFACTURER	~	50	0	1

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

Transfer Pump Type	Manufacturer	Power Source	Transfer Rate (Gpm)	Transportable	Quantity
Diaphragm	**NOT A LISTED MANUFACTURER	Other	35	TRUE	1

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Employment Category	Full Time On Site	Full Time Off Site	Part Time On Site	Part Time Off Site
Supervisor	3	0	0	0
Operator/Technician	5	0	0	0
Laborer	0	0	0	0
Other	0	0	1	0
Pilot	0	0	0	0
Aerial Observer	0	0	0	0

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

National Response Corporation (Sulphur, LA)

2208 Industrial Drive, c/o Miller Environmental Services
Sulphur, LA 70663

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Mike Noel,

Contact Email:
iocdo@nrcc.com

OSRO Number:
16

Phone:
(281)899-4848

FAX:
(281)899-4849

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	**NOT A LISTED MANUFACTURER	Universal Slide	BM21-322	18	100

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VESSELS

No Vessels Registered

SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Weir	**NOT A LISTED MANUFACTURER	Fasflo FFP-002	200	0	1
Weir/Suction	ACME PRODUCTS CO.	WH-216	1	0	1
Weir/Suction	ACME PRODUCTS CO.	WH-206	1	0	1
Weir/Suction	VIKOMA INTERNATIONAL LTD	Cascade Skimmer WS-002	805	0	1

VACUUM SYSTEMS

Vacuum Truck/Trailer	VIN	Holding Capacity (gallons)	Vacuum Rate (Gpm)	Quantity
FALSE	VTU 206	1008	1000	1
FALSE	VTU-216	1008	1000	1

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

Storage Type	Manufacturer	Model	Draft	Storage Capacity	Quantity
Other	**NOT A LISTED MANUFACTURER	Portable Barge 407-408	0	9996	1

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

Southeast Louisiana Area Contingency Plan

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PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

East Baton Rouge Parish

PREPO - Baton Rouge

EXXON MOBIL CORP, 4045 SCENIC HIGHWAY
Baton Rouge, LA 70805

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
John Buller, Theo Camlin

Contact Email:
buller@msrc.org

OSRO Number:
22

Phone:
(800)259-6772

FAX:
(337)475-6401

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	ACME PRODUCTS CO.	ANSI	OK Corral	18	50

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VESSELS

Vessel Type	Vessel Name	Quantity	Official State #	Length	Horse Power	Storage Capacity	Equipment on Board
Utility Work Boat	~	1	1	28	630	0	~
Other	~	1	123	48	200	16800	~

SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Weir/Suction	PHAROS MARINE	GT-185	200	0	1

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

Southeast Louisiana Area Contingency Plan

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TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Clean Harbors Environmental (Baton Rouge, LA)

13351 Scenic Hwy,
Baton Rouge, LA 70807

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact: Jeff McGraw,
Contact Email: mcgraw.jeffery@cleanharbora.com

OSRO Number:
13

Phone:
(225)778-3612

FAX:
(225)778-3510

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	ACME PRODUCTS CO.	Slide	~	18	3000
Curtain	ACME PRODUCTS CO.	Universal Slide	~	18	10000
Curtain	**NOT A LISTED MANUFACTURER	Universal Slide	~	18	1000

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

VESSELS

Vessel	Vessel Quantity	Official Length	Horse	Storage	Equipment
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Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Type	Name		State #		Power	Capacity	on Board
John Boat	V276	2	la	16	25	0	~
Utility Work Boat	V232	1	la	26	230	0	~

SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Disc Adhesion	**NOT A LISTED MANUFACTURER	~	35	0	1
Drum	**NOT A LISTED MANUFACTURER	~	50	0	1
Drum	**NOT A LISTED MANUFACTURER	~	50	0	1
Other	**NOT A LISTED MANUFACTURER	~	160	0	1

VACUUM SYSTEMS

Vacuum Truck/Trailer	VIN	Holding Capacity (gallons)	Vacuum Rate (Gpm)	Quantity
FALSE	~	5000	250	1
TRUE	~	3000	250	1
TRUE	~	3000	250	1
TRUE	~	3000	250	1

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

Storage Type	Manufacturer	Model Draft		Storage Capacity	Quantity
FIXED FACILITY TANK	**NOT A LISTED MANUFACTURER	~	0	20000	13
Other	IHC HOLLAND	~	0	5000	1
Other	**NOT A LISTED MANUFACTURER	~	0	5000	2

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Employment Category	Full Time On Site	Full Time Off Site	Part Time On Site	Part Time Off Site
Supervisor	0	0	1	0
Operator/Technician	0	0	7	0
Laborer	0	0	0	0
Other	0	0	4	0
Pilot	~	~	~	~
Aerial Observer	~	~	~	~

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

I.C.I.,(Baton Rouge W/H; 1-D)

11245 Airline Highway, Warehouse 440 Front
Baton Rouge, LA 70816

COTP Zone:

New Orleans - DISTRICT 8

EPA Region:

Region - 6

Point of Contact:

Rustin D. Johnson, President,

Contact Email:

placeholder@placeholder.com

OSRO Number:

23

Phone:

(800)436-0883

FAX:

(504)291-4456

Status:

Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	**NOT A LISTED MANUFACTURER	Universal Slide	~	18	2500

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

VESSELS

Vessel Type	Vessel Name	Quantity	Official State #	Length	Horse Power	Storage Capacity	Equipment on Board
John Boat	~	1	LA	15	25	0	~

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Utility Work Boat	~	2	1	27	180	0	~
Utility Work Boat	~	1	LA-7559-EK	16	48	0	~
Utility Work Boat	~	1	LA-5905-EJ	16	25	0	~
Deck Barge	~	1	1	120	0	0	~

SKIMMERS

No Skimmers Registered

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

Transfer Pump Type	Manufacturer	Power Source	Transfer Rate (Gpm)	Transportable Quantity	
Diaphragm	**NOT A LISTED MANUFACTURER	Air	110	TRUE	2
Centrifugal	**NOT A LISTED MANUFACTURER	Diesel	170	TRUE	2
Centrifugal	**NOT A LISTED MANUFACTURER	Diesel	316	TRUE	1
Diaphragm	**NOT A LISTED MANUFACTURER	Air	78	TRUE	2
Centrifugal	**NOT A LISTED	Diesel	830	TRUE	1

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

MANUFACTURER

OILY WATER SEPARATORS

Separator Type	Manufacturer	Model	Flow Rate (Gpm)	Discharge Capacity	Quantity
Gravity	**NOT A LISTED MANUFACTURER	N/A	300	300	2

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

PERSONNEL

Employment Category	Full Time On Site	Full Time Off Site	Part Time On Site	Part Time Off Site
Supervisor	~	~	2	0
Operator/Technician	~	~	1	0
Laborer	~	~	2	0
Other	~	~	~	~
Pilot	~	~	~	~
Aerial Observer	~	~	~	~

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

St. John the Baptist Parish

ES&H - LaPlace

1085 Bert Street,
LaPlace, LA 70068

COTP Zone:

New Orleans - DISTRICT 8

EPA Region:

Region - 6

Point of Contact:

Trey Boucvalt, Kevin Lormand

Contact Email:

kevinl@esandh.com

OSRO Number:

50

Phone:

(985)652-4885

FAX:

(985)652-4854

Status:

Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	ACME PRODUCTS CO.	Universal Slide	~	10	1100

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VESSELS

No Vessels Registered

SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Drum	ELASTEC, INC.	TDS-118	35	1	5

VACUUM SYSTEMS

Vacuum Truck/Trailer	VIN	Holding Capacity (gallons)	Vacuum Rate (Gpm)	Quantity
FALSE	~	500	1870	1

PRODUCT TRANSFER PUMPS

Transfer Pump Type	Manufacturer	Power Source	Transfer Rate (Gpm)	Transportable	Quantity
Diaphragm	**NOT A LISTED MANUFACTURER	Air	255	TRUE	21
Centrifugal	**NOT A LISTED MANUFACTURER	Gas	205	TRUE	1
Diaphragm	**NOT A LISTED MANUFACTURER	Diesel	159	TRUE	2
Diaphragm	**NOT A LISTED MANUFACTURER	Gas	88	TRUE	3

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

Equipment	Type/Make	Quantity
BW 5 Air Monitor	Air Monitor	1
375 CFM Air Compressor	Air Compressor	3

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

10 CFM Air Compressor

Air Compressor

1

PERSONNEL

Employment Category	Full Time On Site	Full Time Off Site	Part Time On Site	Part Time Off Site
Supervisor	6	0	0	0
Operator/Technician	4	0	0	0
Laborer	0	0	0	0
Other	0	0	0	0
Pilot	0	0	0	0
Aerial Observer	0	0	0	0

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

I.C.I., (Garyville W/H; 1-A)

West End of West Azalea, Highway 54
Garyville, LA 70051

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Rustin D. Johnson,

Contact Email:
placeholder@placeholder.com

OSRO Number:
23

Phone:
(800)436-0883

FAX:
(504)436-3140

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	**NOT A LISTED MANUFACTURER	Universal Slide	~	18	5000
Curtain	**NOT A LISTED MANUFACTURER	Universal Slide	~	12	3000

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VESSELS

Vessel Type	Vessel Name	Quantity	Official State #	Length	Horse Power	Storage Capacity	Equipment on Board
Utility Work Boat	~	2	LA-7556-EK	16	25	0	~

SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Other	OIL MOP, INC.	Mark II-9D	14	187	1
Other	OIL MOP, INC.	Mark II-4D	5	47	1

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

Transfer Pump Type	Manufacturer	Power Source	Transfer Rate (Gpm)	Transportable	Quantity
Centrifugal	**NOT A LISTED MANUFACTURER	Diesel	170	TRUE	2

OILY WATER SEPARATORS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Oily Water Separators Registered

TEMPORARY STORAGE

Storage Type	Manufacturer	Model	Draft	Storage Capacity	Quantity
Other	**NOT A LISTED MANUFACTURER	~	1	504	2

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

PERSONNEL

Employment Category	Full Time On Site	Full Time Off Site	Part Time On Site	Part Time Off Site
Supervisor	~	~	2	0
Operator/Technician	~	~	2	0
Laborer	~	~	20	80
Other	~	~	~	~
Pilot	~	~	~	~
Aerial Observer	~	~	~	~

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

I.C.I., (Garyville, LA)

Highway 54,
Garyville, LA 70051

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Rustin D. Johnson, President,

Contact Email:
placeholder@placeholder.com

OSRO Number:
23

Phone:
(800)436-0883

FAX:
(504)436-3140

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	OIL STOP, INC.	Universal Slide	~	30	1400
Curtain	**NOT A LISTED MANUFACTURER	Universal Slide	~	24	1000
Curtain	KEPNER PLASTICS FABRICATORS, INC.	Universal Slide	~	56	5000
Curtain	OIL STOP, INC.	Universal Slide	~	30	700
Curtain	OIL STOP, INC.	Universal Slide	~	43	4500
Curtain	**NOT A LISTED MANUFACTURER	Universal Slide	~	36	10500
Curtain	KEPNER PLASTICS FABRICATORS, INC.	Universal Slide	~	42	1700
Curtain	**NOT A LISTED MANUFACTURER	Universal Slide	~	18	14000

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

VESSELS

Vessel Type	Vessel Name	Quantity	Official State #	Length	Horse Power	Storage Capacity	Equipment on Board
Tank Barge	~	2	1	18	0	2100	~
Deck Barge	~	2	1	18	0	0	~
Utility Work Boat	~	1	1	36	240	0	~
Utility Work Boat	~	4	LA-5394-EF	16	25	0	~
Utility Work Boat	~	2	~	27	180	0	~
Other	~	1	~	48	385	0	~
Utility Work Boat	~	1	LA-1438-BW	18	70	0	~
Utility Work Boat	~	1	LA-7563-EK	18	40	0	~

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Utility Work Boat	~	1	LA-7564- EK	20	60	0	~
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SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Other	OIL MOP, INC.	Mark I-4D	14	0	1
Weir/Suction	FOILEX AB	TDS 200 Screw Pump	290	0	1
Other	**NOT A LISTED MANUFACTURER	walosep W4	396	0	2
Weir/Suction	**NOT A LISTED MANUFACTURER	Skimming Barrier	600	0	1
Weir/Suction	DOUGLAS ENGINEERING	Skim-Pak 4700 SH	60	0	3
Other	OIL MOP, INC.	ZRV, 38' length	158	2000	1
Other	OIL MOP, INC.	Mark II-9D	14	187	1
Other	OIL MOP, INC.	Mark II-4D	5	47	2
Other	OIL MOP, INC.	Mark II-4D	20	47	2
Other	OIL MOP, INC.	ORD-21H	50	0	1

VACUUM SYSTEMS

Vacuum Truck/Trailer	VIN	Holding Capacity (gallons)	Vacuum Rate (Gpm)	Quantity
TRUE	~	3000	300	2

PRODUCT TRANSFER PUMPS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Transfer Pump Type	Manufacturer	Power Source	Transfer Rate (Gpm)	Transportable	Quantity
Centrifugal	**NOT A LISTED MANUFACTURER	Gas	308	TRUE	1
Centrifugal	**NOT A LISTED MANUFACTURER	Gas	162	TRUE	2
Centrifugal	**NOT A LISTED MANUFACTURER	Diesel	320	TRUE	1
Centrifugal	**NOT A LISTED MANUFACTURER	Diesel	170	TRUE	6
Diaphragm	**NOT A LISTED MANUFACTURER	Air	78	TRUE	6

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

Storage Type	Manufacturer	Model	Draft	Storage Capacity	Quantity
Other	**NOT A LISTED MANUFACTURER	~	1	504	2
Other	**NOT A LISTED MANUFACTURER	~	6	50400	2
Other	KEPNER PLASTICS FABRICATORS, INC.	~	4	5040	1

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

Equipment	Type/Make	Quantity
Pick-up Truck	Ford	3
Flat Bed Truck	Ford	3
4-Door ER Vehicle	Ford, 1-Ton	4
Field Testing Equipment	~	1
PPE	~	1
Air Compressor	~	1
Air Compressor	~	1
Portable Generator	~	3
Pressure Washer	~	2
Cold Water Blaster	~	1
Hot Water Blaster	~	2
45' Trailer	~	1
24' Utility Trailer	~	2
20' Utility Trailer	~	2
16' Utility Trailer	~	2
32'Chem. Response Trailer	~	1
36'Chem. Response Trailer	~	1
24' Mobile Field Office	Ford, self-contained	1
30' Mobile Field Office	Southwind, self-contained	1

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

42' Mobile Command Center	Trailer	1
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PERSONNEL

Employment Category	Full Time On Site	Full Time Off Site	Part Time On Site	Part Time Off Site
Supervisor	~	~	8	0
Operator/Technician	~	~	6	0
Laborer	~	~	2	0
Other	~	~	~	~
Pilot	~	~	~	~
Aerial Observer	~	~	~	~

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Phillips PSC

P.O. Drawer 550, 268 Power Blvd
Reserve, LA 70084

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
John Belloni, Robert George

Contact Email:
placeholder@placeholder.com

OSRO Number:
25

Phone:
(504)536-7612

FAX:
(504)536-4656

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Other	CONTAINMENT SYSTEMS	Quick	~	36	1000
Other	AMERICAN BOOM & BARRIER CORP.	Quick	~	18	2000

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VESSELS

Vessel Type	Vessel Name	Quantity	Official State #	Length	Horse Power	Storage Capacity	Equipment on Board
Other	~	1	LA8618ET	24	230	0	~
Other	~	1	LA 5855EN	18	50	0	~
John Boat	~	3	LA 5885 EI	14	25	0	~

SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Weir/Suction	**NOT A LISTED MANUFACTURER	36" Pelican	68	0	1
Weir/Suction	**NOT A LISTED MANUFACTURER	24" Pelican	38	0	2
Other	OIL MOP, INC.	MK II-4	5	1	2
Other	OIL MOP, INC.	MK I-4	5	42	3
Other	MARCO POLLUTION CONTROL	HARBOR 28	140	1200	1

VACUUM SYSTEMS

Vacuum Truck/Trailer	VIN	Holding Capacity (gallons)	Vacuum Rate (Gpm)	Quantity
TRUE	~	3300	110	8
FALSE	~	5460	110	2

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

PRODUCT TRANSFER PUMPS

Transfer Pump Type	Manufacturer	Power Source	Transfer Rate (Gpm)	Transportable Quantity	
Centrifugal	**NOT A LISTED MANUFACTURER	Hydraulic	2200	TRUE	1
Other	**NOT A LISTED MANUFACTURER	Diesel	416	TRUE	4
Other	**NOT A LISTED MANUFACTURER	Air	205	TRUE	12
Other	**NOT A LISTED MANUFACTURER	Air	135	TRUE	3
Other	GORMANN-RUPP CO.	Diesel	2500	TRUE	3

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

Storage Type	Manufacturer	Model Draft		Storage Capacity	Quantity
Other	**NOT A LISTED MANUFACTURER	~	0	14700	18

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

Equipment	Type/Make	Quantity
Roll Off Boxes	25 cu yd	200
4 GAS METER	LUMIDOR	1
LEL/02 METER	MSA	1
AIR MONITORING EQUIPMENT	DRAEGER	2
FULL FACE RESPIRATORS	SCOTT	12
S.C.B.A. 30 MINUTE PACKS	SCOTT	5
DELIVERY TRAILER	30" GOOSENECK	1
2 WAY RADIOS	MOTOROLA	7
40 LB. ANCHORS	DANFORTH	30
SUPPLIED AIR RESPIRATORS	MSA	20
SUPPLIED AIR RESPERATOR	SCOTT	15
CELLULAR PHONE	MOTOROLA (VEHICLE MOUNT)	4
CELLULAR PHONE	MOTOROLA (BAG PHONE)	3
HIGH INTENSITY LIGHTS	TOWER	2
BREATHING AIR TRAILER	CASCADE	3
4 WHEEL ATV W/TRAILER	HONDA	1
INFLATEABLE DECON POOL	30' X 15'	1
INFLATEABLE DECON POOL	100' X 20'	1
2500 PSI PRESSURE WASHER	LANDA	2
PORT-O-LETS	~	135

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

PORTABLE LIGHT TOWERS	DIESEL POWER	2
185 CFM AIR COMPRESSOR	SULLAIR	2
375 CFM AIR COMPRESSOR	SULLAIR	3
24' RESPONSE TRAILER	GRUMAN	1
40' TRAILER	BOX VAN	1
24' BOOM TRAILER	GOOSENECK	2
24' RESPONSE TRAILER	GOOSE NECK	1
STRAIGHT TRUCKS	MACK TRUCKS	3
TRACTORS FOR TRAILERS	INTERNATIONALS	15
PICK UP TRUCK	3/4 TON	8
PICK UP TRUCKS	ONE TON	3

PERSONNEL

Employment Category	Full Time On Site	Full Time Off Site	Part Time On Site	Part Time Off Site
Supervisor	~	~	5	0
Operator/Technician	~	~	30	0
Laborer	~	~	~	~
Other	~	~	~	~
Pilot	~	~	~	~
Aerial Observer	~	~	~	~

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Lafourche Parish

ES&H - Golden Meadow

21148 Hwy 1,
Golden Meadow, LA 70357

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Trey Boucvalt, Kevin Lormand

Contact Email:
kevinl@esandh.com

OSRO Number:
50

Phone:
(985)475-3030

FAX:
(985)475-3031

Status:
Owned

BOOMS

No Booms Registered

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

VESSELS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Vessel Type	Vessel Name	Quantity	Official State #	Length	Horse Power	Storage Capacity	Equipment on Board
Utility Work Boat	Responder #9	1	LA 4787FS	26	230	0	Radar & GPS

SKIMMERS

No Skimmers Registered

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

Transfer Pump Type	Manufacturer	Power Source	Transfer Rate (Gpm)	Transportable Quantity	
Diaphragm	**NOT A LISTED MANUFACTURER	Air	35	TRUE	1
Diaphragm	**NOT A LISTED MANUFACTURER	Diesel	100	TRUE	1
Centifugal	**NOT A LISTED MANUFACTURER	Gas	210	TRUE	6
Diaphragm	**NOT A LISTED MANUFACTURER	Gas	88	TRUE	3

OILY WATER SEPARATORS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

Equipment	Type/Make	Quantity
Air Monitor	BW 4 Gas Air Monitor	1
Steam Cleaner	3000 PSI steam cleaner	1
Air Compressor	10 CFM Air Compressor	2

PERSONNEL

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Employment Category	Full Time On Site	Full Time Off Site	Part Time On Site	Part Time Off Site
Supervisor	1	0	0	0
Operator/Technician	1	0	0	0
Laborer	0	0	0	0
Other	0	0	0	0
Pilot	~	~	~	~
Aerial Observer	~	~	~	~

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Phillips PSC /GOLDEN MEADOW

21148 HIGHWAY 1,
GOLDEN MEADOW, LA 70357

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
ANDY DUFRENE, LEROY
CHERAMIE

Contact Email:
placeholder@placeholder.com

**OSRO
Number:**
25

Phone:
(504)475-7770

FAX:
(504)475-5916

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Other	CONTAINMENT SYSTEMS	Quick	~	18	1600

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VESSELS

Vessel Type	Vessel Name	Quantity	Official State #	Length	Horse Power	Storage Capacity	Equipment on Board
John Boat	~	2	LA	16	25	0	~
Other	~	1	LA	20	90	0	~

SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Weir/Suction	**NOT A LISTED MANUFACTURER	24" Pelican	38	0	2

VACUUM SYSTEMS

Vacuum Truck/Trailer	VIN	Holding Capacity (gallons)	Vacuum Rate (Gpm)	Quantity
FALSE	~	5400	110	1

PRODUCT TRANSFER PUMPS

Transfer Pump Type	Manufacturer	Power Source	Transfer Rate (Gpm)	Transportable	Quantity
Other	**NOT A LISTED MANUFACTURER	Gas	200	TRUE	2
Other	**NOT A LISTED MANUFACTURER	Diesel	416	TRUE	2

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

Storage Type	Manufacturer	Model Draft		Storage Capacity	Quantity
Other	**NOT A LISTED MANUFACTURER	~	0	1050	25
Other	**NOT A LISTED MANUFACTURER	~	0	630	15
Other	**NOT A LISTED MANUFACTURER	~	0	1050	15

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Equipment	Type/Make	Quantity
2 WAY RADIO	HAND HELD	2
5 MINUTE ESCAPE PACK	SCOTT	6
S.C.B.A. 30 MINUTE PACKS	SCOTT	3
BREATHING AIR TRAILER	CASCADE SYSTEM	1
CELLULAR PHONE	MOTOROLA	1
CELLULAR PHONES	MOTOROLA	4
RESPONSE TRAILER	24' BOX	1
2500 PSI PRESSURE WASHER	LANDA	3
250 CFM AIR COMPRESSOR	SULLAIR CORPORATION	2
2 TON FLAT BED PICK UP	DODGE	1
PICK UP TRUCKS	FORD	7

PERSONNEL

Employment Category	Full Time On Site	Full Time Off Site	Part Time On Site	Part Time Off Site
Supervisor	~	~	4	0
Operator/Technician	~	~	6	0
Laborer	~	~	~	~
Other	~	~	~	~
Pilot	~	~	~	~
Aerial Observer	~	~	~	~

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

St. Bernard Parish

U. S. Environmental Services

P.O. Box 949, 2809 E. Judge Perez Drive
Meraux, LA 70075

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Dennis Schenck, Jose Delgado

Contact Email:
dschenck@usesgroup.com

OSRO Number:
38

Phone:
(888)279-9930

FAX:
(504)279-7756

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	ACME PRODUCTS CO.	Universal Slide	~	18	7000
Curtain	ACME PRODUCTS CO.	Universal Slide	~	18	6000
Curtain	ACME PRODUCTS CO.	Universal Slide	~	18	2000
Curtain	ACME PRODUCTS CO.	Universal Slide	~	18	1000
Curtain	ACME PRODUCTS CO.	Universal Slide	~	18	1000

BEACH CLEANERS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

VESSELS

Vessel Type	Vessel Name	Quantity	Official State #	Length	Horse Power	Storage Capacity	Equipment on Board
Utility Work Boat	~	1	LA5300FX	36	500	0	Radar, GPS, VHF-FM, Generator, A/C
Utility Work Boat	~	1	LA4757FX	36	500	0	Radar, GPS, VHF-FM, Generator, A/C
John Boat	~	28	LA	16	0	0	~
John Boat	~	10	LA	16	25	0	Stored, not on trailers
John Boat	~	1	LA6229FW	16	25	0	~
Utility Work Boat	~	1	LA	18	90	0	~
Utility Work Boat	~	1	LA1335FM	26	300	0	~
Utility Work Boat	~	1	LA6462FK	26	300	0	~
Utility Work Boat	~	1	OR436ABX	28	300	0	~

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Utility Work Boat	~	1	LA8092FH	28	300	0	~
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SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Drum	**NOT A LISTED MANUFACTURER	Alloy Technology - Goo Gobbler 36"	85	0	1
Drum	**NOT A LISTED MANUFACTURER	Crucial 1D18P-36	85	0	3

VACUUM SYSTEMS

Vacuum Truck/Trailer	VIN	Holding Capacity (gallons)	Vacuum Rate (Gpm)	Quantity
TRUE	~	2940	150	5
TRUE	~	3300	150	2
TRUE	52W1077220	5460	150	1

PRODUCT TRANSFER PUMPS

Transfer Pump Type	Manufacturer	Power Source	Transfer Rate (Gpm)	Transportable	Quantity
Centrifugal	**NOT A LISTED MANUFACTURER	Gas	220	TRUE	10
Diaphragm	**NOT A LISTED MANUFACTURER	Gas	85	TRUE	7

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

Storage Type	Manufacturer	Model	Draft	Storage Capacity	Quantity
Other	**NOT A LISTED MANUFACTURER	95-Gallon Poly Overpack	0	95	5
Other	**NOT A LISTED MANUFACTURER	Open Top Steel Drum	0	55	20

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Support Equipment Registered

PERSONNEL

Employment Category	Full Time On Site	Full Time Off Site	Part Time On Site	Part Time Off Site
Supervisor	~	~	8	0
Operator/Technician	~	~	27	0
Laborer	~	~	~	~
Other	~	~	~	~
Pilot	~	~	~	~
Aerial Observer	~	~	~	~

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Ascension Parish

SWS Environmental Services Gonzales

10049 Industriplex, P.O. Box 1800
Gonzales, LA 70707

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact: Don Caldera, Michael Guichard	Contact Email: placeholder@placeholder.com	OSRO Number: 247
Phone: (800)336-0909	FAX: (225)677-5163	Status: Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	CONTAINMENT SYSTEMS	Universal Slide	Beta	18	300

BEACH CLEANERS

Beach Cleaner Type	Manufacturer	Model	Quantity
Mechanical Cleaner	**NOT A LISTED MANUFACTURER	580	1
Other	**NOT A LISTED MANUFACTURER	Hi PRO	2

DISPERSANTS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Dispersants Registered

VESSELS

No Vessels Registered

SKIMMERS

No Skimmers Registered

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

Transfer Pump Type	Manufacturer	Power Source	Transfer Rate (Gpm)	Transportable Quantity	
Centrifugal	**NOT A LISTED MANUFACTURER	Hydraulic	300	TRUE	1
Other	**NOT A LISTED MANUFACTURER	Hydraulic	100	TRUE	1
Diaphragm	**NOT A LISTED MANUFACTURER	Air	100	TRUE	2
Diaphragm	VERSATECH PRODUCTS, INC.	Air	50	TRUE	1
Diaphragm	VERSATECH PRODUCTS, INC.	Air	100	TRUE	2

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

Storage Type	Manufacturer	Model	Draft	Storage Capacity	Quantity
Modular Storage Container	**NOT A LISTED MANUFACTURER	Frac Tank	0	20000	1

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

Equipment	Type/Make	Quantity
Haul Truck	International	1

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Decon Trailer	Wells Fargo	1
ATV	Honda	1
Weed Eater	Echo	2
Generator	Generac	2
Welder	Lincoln	1
Air Compressor	CiQ71083V	2
Air Compressor	Speed Air	1

PERSONNEL

Employment Category	Full Time On Site	Full Time Off Site	Part Time On Site	Part Time Off Site
Supervisor	~	~	3	0
Operator/Technician	~	~	10	0
Laborer	~	~	6	0
Other	~	~	~	~
Pilot	~	~	~	~
Aerial Observer	~	~	~	~

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

USES Geismar LA

6338 Highway 73,
Geismar, LA 70734

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Dennis Schenck, Jose Delgado

Contact Email:
dschenck@usesgroup.com

OSRO Number:
38

Phone:
(888)279-9930

FAX:
(225)677-9549

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	ACME PRODUCTS CO.	Universal Slide	~	18	2000

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

VESSELS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Vessel Type	Vessel Name	Quantity	Official State #	Length	Horse Power	Storage Capacity	Equipment on Board
John Boat	~	2	LA	16	25	0	~
Utility Work Boat	~	1	LA3228FZ	18	90	0	~

SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Weir/Suction	**NOT A LISTED MANUFACTURER	24" Aluminum Weir Skimmer	415	0	1

VACUUM SYSTEMS

Vacuum Truck/Trailer	VIN	Holding Capacity (gallons)	Vacuum Rate (Gpm)	Quantity
TRUE	~	3360	300	1

PRODUCT TRANSFER PUMPS

Transfer Pump Type	Manufacturer	Power Source	Transfer Rate (Gpm)	Transportable	Quantity
Diaphragm	**NOT A LISTED MANUFACTURER	Air	80	TRUE	1
Centrifugal	**NOT A LISTED	Gas	132	TRUE	1

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

MANUFACTURER

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

Storage Type	Manufacturer	Model	Draft	Storage Capacity	Quantity
Other	**NOT A LISTED MANUFACTURER	150 bbl tank	0	6300	5
Other	**NOT A LISTED MANUFACTURER	500 bbl tank	0	21000	5
Other	**NOT A LISTED MANUFACTURER	55-GAL OPEN TOP	0	55	25

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

SUPPORT EQUIPMENT

Equipment	Type/Make	Quantity
Absorbent Particulate	Bags	40
Oil Snare	~	15
Nextel Radios	~	5
Stake Truck	~	6
Sorbent Pads	Bale/100	50
Sorbent Boom	8", 40' Bag	25
Trailer	Flatbed	1

PERSONNEL

Employment Category	Full Time On Site	Full Time Off Site	Part Time On Site	Part Time Off Site
Supervisor	~	~	4	0
Operator/Technician	~	~	19	0
Laborer	~	~	~	~
Other	~	~	~	~
Pilot	~	~	~	~
Aerial Observer	~	~	~	~

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Orleans Parish

USES - Alabo

702 Alabo Street,
New Orleans, LA 70117

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Dennis Schenck, Jose Delgado

Contact Email:
dschenck@usesgroup.com

OSRO Number:
38

Phone:
(888)279-9930

FAX:
(504)279-7756

Status:
Owned

BOOMS

No Booms Registered

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

VESSELS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Vessel Type	Vessel Name	Quantity	Official State #	Length	Horse Power	Storage Capacity	Equipment on Board
Utility Work Boat	~	2	LA	20	180	0	~

SKIMMERS

No Skimmers Registered

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

CGA Gulf Coast totals

650 Poydras ST,
New Orleans, LA 70130

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Frank Paskawich,

Contact Email:
paskewich@msrc.org

OSRO Number:
369

Phone:
(504)799-3035

FAX:
~

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	**NOT A LISTED MANUFACTURER	Universal Slide	~	42	30000

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VESSELS

No Vessels Registered

SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Drum	ELASTEC, INC.	~	65	0	24

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

Storage Type	Manufacturer	Model Draft	Storage Capacity	Quantity
--------------	--------------	-------------	------------------	----------

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Other	**NOT A LISTED MANUFACTURER	~	0	2100	3
Other	**NOT A LISTED MANUFACTURER	~	0	4200	22

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

USES Box - Algiers

434 Powder St.,
New Orleans, LA 70114

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Dennis Schenck, Jose Delgado

Contact Email:
dschenck@usesgroup.com

OSRO Number:
38

Phone:
(888)279-9930

FAX:
(504)279-7756

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	CONTAINMENT SYSTEMS	Quick	River	18	300

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

VESSELS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Vessels Registered

SKIMMERS

No Skimmers Registered

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

Storage Type	Manufacturer	Model	Draft	Storage Capacity	Quantity
Other	**NOT A LISTED MANUFACTURER	55 Gallon Open Top Drum	0	55	5

DISPERSANT DELIVERY SYSTEMS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

Equipment	Type/Make	Quantity
Sorbent Pads	100 sheets/bale	25
Sorbent Sweep	100' bags	9

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

St. Charles Parish

Mid-Gulf Recovery Services, LLC

10567 Airline Drive,
Saint Rose, LA 70087

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact: Tony Cunningham, Michelle Matoka	Contact Email: tony@midgulfrecovery.com	OSRO Number: 393
Phone: (504)737-1600	FAX: (504)737-1660	Status: Owned

BOOMS

No Booms Registered

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VESSELS

No Vessels Registered

SKIMMERS

No Skimmers Registered

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

USES Box - Hahnville

15370 River Road,
Hahnville, LA 70057

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Dennis Schenck, Jose Delgado

Contact Email:
dschenck@usesgroup.com

OSRO Number:
38

Phone:
(888)279-9930

FAX:
(504)279-7756

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	CONTAINMENT SYSTEMS	Quick	River	18	500

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VESSELS

No Vessels Registered

SKIMMERS

No Skimmers Registered

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

Equipment	Type/Make	Quantity
Sorbent Pads	100 pads per bale	30
Sorbent Boom	Ergon 5", 40' Bag	15

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

OMES

11966 River Road,
St Rose, LA 70087

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Robert George,

Contact Email:
robertgeorge@omies.com

OSRO Number:
12

Phone:
(800)645-6671

FAX:
(504)712-6949

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	ABASCO	Quick	Beta-I B	18	1000

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

VESSELS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Vessels Registered

SKIMMERS

No Skimmers Registered

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

USES - Valero St. Charles

14902 River Road,
Norco, LA 70079

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Dennis Schenck,

Contact Email:
dschenck@usesgroup.com

OSRO Number:
38

Phone:
(888)279-9930

FAX:
(504)279-7756

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	ACME PRODUCTS CO.	Universal Slide	~	18	1000

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

VESSELS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Vessels Registered

SKIMMERS

No Skimmers Registered

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Vermilion Parish

Gulf Rim Navigation

1401 South State Street,
Abbeville, LA 70510

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Larry Campisi, Dominic Campisi

Contact Email:
larry@gulfrim.com

OSRO Number:
270

Phone:
(337)893-0789

FAX:
(337)893-6256

Status:
Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	**NOT A LISTED MANUFACTURER	Quick		24	4000

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VESSELS

No Vessels Registered

SKIMMERS

No Skimmers Registered

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Clean Harbors Environmental (New Iberia, LA)

1205 Tool Drive,
New Iberia, LA 70562

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:

Virgil Blanchard,

Contact Email:

blanchard.virgil@cleanharbors.com

OSRO Number:

13

Phone:

(337)365-9811

FAX:

~

Status:

Owned

BOOMS

Boom Type	Manufacturer	Connector Type	Model Name and Number	Boom Height	Boom Length
Curtain	**NOT A LISTED MANUFACTURER	Universal Slide	~	18	5300
Curtain	**NOT A LISTED MANUFACTURER	Universal Slide	~	18	7500

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VESSELS

Vessel Type	Vessel Name	Quantity	Official State #	Length	Horse Power	Storage Capacity	Equipment on Board
Utility Work Boat	V366 V368 V369 V370	4	LA	30	400	0	~
Utility Work Boat	V352	1	LA	26	250	0	~

SKIMMERS

Skimmer Type	Manufacturer	Model Name and Number	Pump Capacity (Gpm)	Storage Capacity	Quantity
Weir/Suction	JBF SCIENTIFIC CO., INC.	VOSS	35	0	1
Weir/Suction	JBF SCIENTIFIC CO., INC.	VOSS	35	0	1
Other	**NOT A LISTED MANUFACTURER	Hydraulic Lamor 5160 5157 5161 5159	35	0	4
Weir	SKIM-PAK	Douglas Weir	95	0	11

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

Equipment	Type/Make	Quantity
UTV	Polaris Ranger XP 800cc (red,camo,gre,green)	6

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

UTV	400cc red	2
UTV	Honda Big Red 4x4	3

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Bossier Parish

ES&H Bossier City

101 Crown Court Place,
Bossier City, LA 71112

COTP Zone:
New Orleans - DISTRICT 8

EPA Region:
Region - 6

Point of Contact:
Trey Boucvalt, Kevin Lormand

Contact Email:
klormand@esandh.com

OSRO Number:
50

Phone:
(318)746-5620

FAX:
~

Status:
Owned

BOOMS

No Booms Registered

BEACH CLEANERS

No Beach Cleaners Registered

DISPERSANTS

No Dispersants Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

VESSELS

No Vessels Registered

SKIMMERS

No Skimmers Registered

VACUUM SYSTEMS

No Vacuum Systems Registered

PRODUCT TRANSFER PUMPS

No Product Transfer Pumps Registered

OILY WATER SEPARATORS

No Oily Water Separators Registered

TEMPORARY STORAGE

No Portable Storage Registered

DISPERSANT DELIVERY SYSTEMS

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

No Dispersant Delivery Systems Registered

AERIAL OIL TRACKING AIRCRAFT

No Aerial Oil Tracking Aircraft Registered

FIRE FIGHTING EQUIPMENT

No Fire Fighting Equipment Registered

SUPPORT EQUIPMENT

No Support Equipment Registered

PERSONNEL

No Personnel Registered

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory

Lower Mississippi River Deepwater Port Asset Inventory

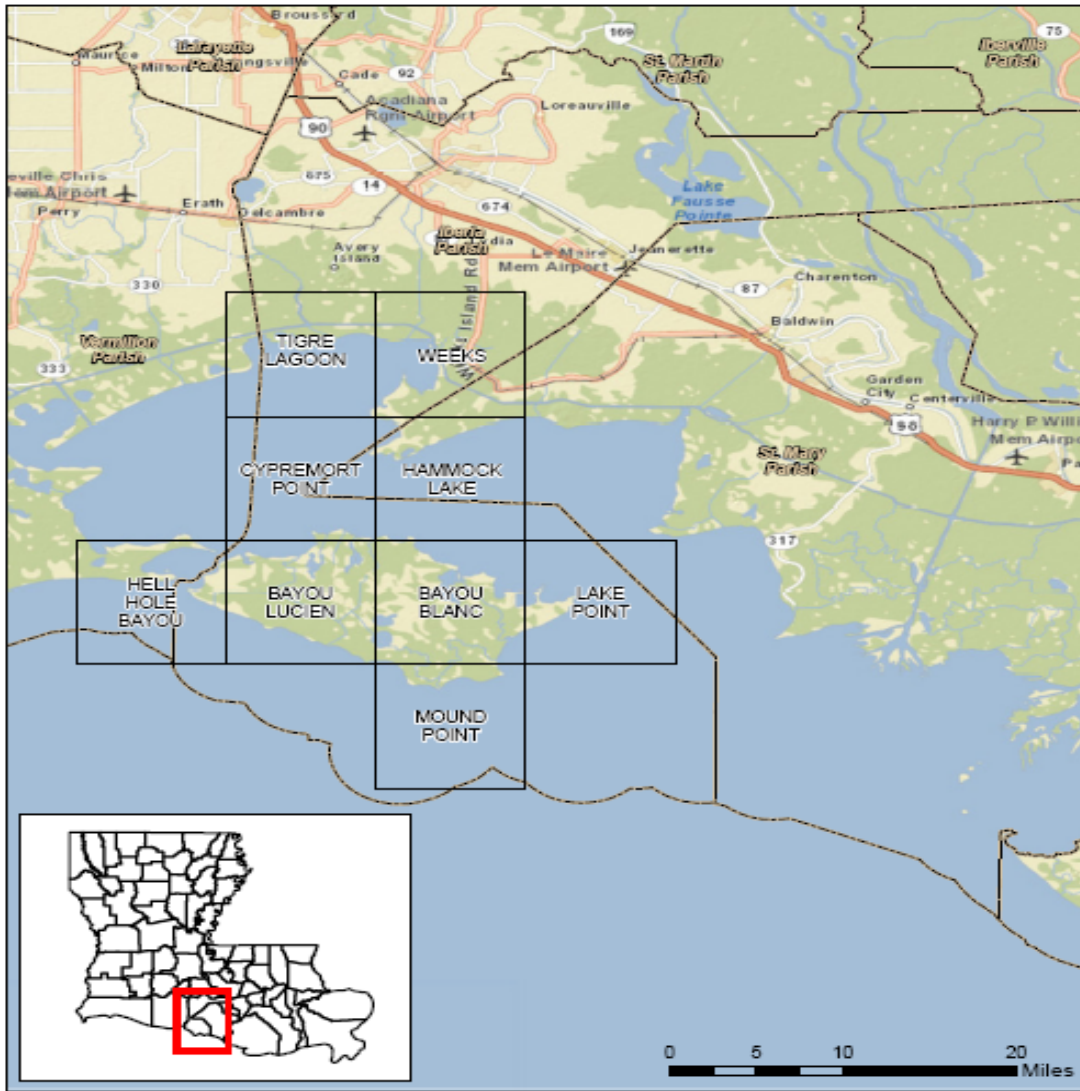
LMR Public Port	Equipment	Contact
Port of New Orleans	Mobile Command Center	504 891-7585
	45ftx34ft 2007 Freightliner	
	56,00 lbs,	
	300 H.P. turbo-charged diesel	
	50x16 ft Dauntless Class	504 891-7585
	Twin 5016-V 875 Caterpillar Diesels	
	Multi-Purpose Public Safety Vessel	897-6844
	95x26 ft, 7 foot Draft	
	3600 HP total	
	4 main engines	
Port of South Louisiana	M/V John James Charles	866-536-3678
	80' x 16.5'	985-536-3678
	PSL Accardo	866-536-3678
	49' Dauntless-class patrol boat	985-536-3678
	PSL Responder	866-536-3678
	57' x 16' (4.5' draft)	985-536-3678
	Zodiac RHIB	985-536-3678
	Ford Expedition 4x4	985-536-3678
Plaquemines Parish Port	Chevrolet 3500 Pickup	985-536-3678
	17' Diamondback Airboat	
	18' Alumaweld Flatboat	
	50' fireboat (Authority I)	504-912-3991
	50' fireboat (Authority II)	504-912-3981
	90' fireboat (Authority III)	504-715-6913
	tilt-bed truck	
	tilt-bed truck	
	Sunstrom 480B helicopter	
	with cargo hook, Spectra	
	Lab SX-5 searchlight;	
	Gyrocam DS Infrared	
	camera system	
	Mobile Communications	
	and Surveillance Unit	
	4 Pickup trucks	

Southeast Louisiana Area Contingency Plan

Chapter 9000
Appendix S
Geographic Response
Plans

2013

Geographic Response Plan Iberia Parish



Southeast Louisiana
Area Contingency Plan
U. S. Coast Guard
MSU Morgan City
800 David Drive
Morgan City, LA 70380



Iberia Parish GRP Signature Page

A blue ink signature of David McClellan, written in a cursive style, positioned above a horizontal line.

David McClellan
Captain, US Coast Guard
Commander, MSU Morgan City
Federal On-Scene Coordinator, Morgan City

A blue ink signature of Brian Wynne, written in a cursive style, positioned above a horizontal line.

Brian Wynne
Acting Louisiana Oil Spill Coordinator

A brown ink signature of Errol 'Romo' Romero, written in a cursive style, positioned above a horizontal line.

Errol "Romo" Romero
Iberia Parish President

Record of Changes

Date	Change Number	Summary of Changes	Initials of person making changes

Contents

Iberia Parish GRP Signature Page	2
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Iberia Parish Geographic Response Plan	5
Introduction.....	5
Scope.....	6
Development	6
Guiding Principles of the GRP.....	7
Sensitive Resources Addressed by GRPs	8
Evaluation Criteria for GRPs	9
Prioritization.....	12
Strategy Selection	13
GRP Strategy Selection Job-Aid.....	14

Iberia Parish Geographic Response Plan

Introduction

This Geographic Response Plan (GRP) is an annex to the Southeast Louisiana Area Contingency Plan (SOUTHEAST LOUISIANA ACP) and a key element of both facility and vessel contingency plans. This GRP has two main functions:

From a planning perspective, the GRP provides a description of sensitive biological, cultural, and economic resources that must be addressed to be in compliance with:

- The National Oil and Hazardous Substance Pollution Contingency Plan (NCP, 40 CFR Part 300.210(3)(i)). Area Contingency Plans are required to describe areas of special economic and environmental importance that could be impacted during an oil spill.
- The National Historic Preservation Act of 1966 contains applicable, relevant and appropriate requirements. The GRPs also address sensitive historic and prehistoric resources.

From an operational perspective, the GRP guides responders in the first 24-48 hours of an oil spill by:

- Providing a prioritized list of tactical response strategies to be implemented during the early hours of an oil spill (usually before the formation of the Unified Command);
- Providing detailed information for booming strategies that could be utilized to minimize impacts to predetermined sensitive resources.

Once the Unified Command is formed, additional operational strategies and tactics will be relayed to the field in the form of the ICS-204 work assignment sheets.

Because the GRP is the primary tool used during an initial phase of the response and fairly broad in their scope, they are not intended to minimize impacts to all possible sensitive areas that could be affected by an oil spill. Likewise, the GRPs are not intended to be an exhaustive list of all the tactical strategies that could, or should, be implemented during a spill.

Scope

This Geographic Response Plan (GRP) is intended to help the first responders of an oil discharge or hazardous substance release avoiding the initial confusion that generally accompanies any incident. This document serves as the federal and state on-scene-coordinators “guidance” during an incident in the area covered by this GRP (see Section 2 for area covered). As such it has been approved by the U.S. Coast Guard MSU Morgan City, the Louisiana Oil Spill Coordinator’s Office, and Iberia Parish. Changes to this document are expected as testing is conducted through drills, site visits, and actual use in an incident. To submit comments, corrections, or suggestions please refer to Appendix B.

The scope of this GRP is to identify sensitive sites to be considered for protection in the first 24 to 48 hours of an incident and the generic response strategy for this site considering unique characteristics, noted hydrology and climatic considerations. This index is not all encompassing as sites not identified in this index may need to be evaluated for protection as an incident progresses.

GRPs only address protection of sensitive public resources. It is the responsibility of private resource owners and/or potentially liable parties to address protection of private resources (such as commercial marina and private water intakes).

Development

This Index has been developed for the Coastal Zone, as defined in the National Contingency Plan (40 CFR Part 300) for Iberia Parish. It is prepared through the efforts and cooperation of Louisiana State Trustee Agencies, Parish Representatives, and Federal Trustee Agencies, other federal and state agencies, response organizations, and local emergency responders. This Index was developed through workshops involving federal, state, and local stakeholders. Workshop participants identified resources which require protection and developed operational strategies.

Following the workshops, the data gathered was processed and reproduced in the form of maps and matrices which appear in Chapter 3. The maps were generated using ArcGIS, and the tables were created using Microsoft Access.

The first goal of a GRP is to identify resources needing protection; response resources needed; tribal and local response community contacts; and local conditions that may affect response strategies.

Secondly, response strategies were developed based on the sensitive resources noted hydrology and climatic considerations. Individual response strategies identify the appropriate boom implementation.

Draft maps and matrices were sent out for review and consideration of strategy viability.

Verification at local, state, and federal levels was conducted and changes proposed by the participants were included in a semi-final draft, which was offered for final review.

Finally, the final GRP was compiled along with site description, reference maps, and information to support logistical needs.

Guiding Principles of the GRP

Safety and health of the responders always takes precedence over the protection of sensitive environmental resources.

Source control and containment are always a **HIGER** priority over GRP strategy deployments.

The protection strategies in the GRPs have been designed for the use with persistent oils and may not be suitable for other petroleum or hazardous substances.

Environmental conditions (winds, currents, and tides), together with the physical limitations of existing spill response technology, may preclude the effective protection of some areas.

Once a coordinated response has been established during an oil spill incident, booming strategy selection and prioritization are refined and supplemented based on real-time assessments. The UC has the authority to supersede the strategies proposed in the GRPs.

Response personnel may find it necessary to deviate from the exact details provided for deploying a particular strategy. An onsite evaluation of actual conditions is often needed to determine whether a strategy is safe to deploy, whether it will be effective under existing environmental conditions, or effective for the particular type of oil involved. Therefore, field personnel should use their best judgment to modify existing strategies based on real-time conditions and notify command accordingly. Field personnel are also encouraged to notify the command post regarding opportunities for deployment additional strategies that might be used to take advantage of incident-specific conditions.

The GRPs Include the Following Types of Response Strategies:

Collection Booming with On-Water Recovery: Deploying various types of boom to collect oil for mechanical removal using sorbent materials, vacuum trucks, or near shore skimming devices;

Exclusion Booming: Deploying various types of boom to reduce oiling in sensitive areas;

Deflection Booming: Deploying various types of boom to divert oil away from a sensitive area and/or divert oil toward a collection point.

GRPs Do Not Include:

In-Situ Burning: Burning oil on the water; usually requires containment by fire-resistant boom. Chapter 9000, Appendix C for additional policy on in-situ burning use;

Dispersants: Applying chemical agents, usually by aircraft, to aid in breaking up surface slicks and dispersing oil within the water column. See Chapter 9000, Appendix D for policy on dispersant use;

Shoreline Cleanup: Physical removal or chemical treatment of stranded oil. See Chapter 9000, Appendix G for the NOAA Shoreline Countermeasure Manual for Tropical Coastal Environments and Appendix F Oil Spill Best Management Practices for guidance on shoreline cleanup;

Open-Water Mechanical Recovery: Physical removal of oil using boats and/or vessels specifically outfitted with collection and separation equipment.

No Action: Appropriate when weather, sea, or other conditions make deployments unsafe and/or infeasible and when response actions or site access will cause further environmental damage (e.g., wetlands)

Sensitive Resources Addressed by GRPs

The NCP, 40 CFR Part 300.120(3)(i) requires that Area Committees identify and prioritize sensitive areas requiring protection. In the SOUTHEAST LOUISIANA ACP, sensitive areas are broken into three main categories described below.

Environmentally Sensitive Resources

Key natural resource areas are identified using a wide range of data provided by resource trustees, tribes, plan holders, spill response organizations, contingency plan holders, and other interested stakeholders during the process of GRP development and review. The Environmental Sensitivity Index (ESI) maps developed by NOAA are one example of the type of natural resource information available (<http://response.restoration.noaa.gov>). When appropriate, tactical response strategies are designed for implementation during the early hours of an oil spill to reduce impacts to those areas, and trajectory models or other assessment techniques are used to establish initial response priorities.

Historically or Culturally Sensitive Resources

Information on sensitive historic and cultural sites is coordinated through contact with the various tribal governments, State Historic Preservation Office (SHPO), and the United

States Department of the Interior may assist as needed. Due to the sensitive nature of this information, the specifics regarding the location and nature of such sites are not included in the GRP documents. However, in order to ensure that tactical response strategies do not inadvertently harm historical and culturally sensitive sites, historic preservation specialists are consulted to review the GRP documents prior to finalization. The Louisiana SHPO can be contacted at:

Physical Address:
State Historic Preservation Office
Division of Archaeology
Capital Annex Building
1051 North Third Street

Mailing Address:
P.O. Box 44247
Baton Rouge LA, 70804
Phone: (225) 342-8160 (general office)
(225) 219-4598 (Division of Archaeology office)
Fax: (225) 342-4480

Socio-Economically Sensitive Resources

Economically sensitive areas are facilities or locations that rely on a body of water to be economically viable and that could be severely impacted by an oil spill. Economically sensitive areas are broken down into three separate categories: Critical infrastructure, water dependent commercial and recreational areas. Information on economic resources will be gathered for inclusion as an appendix to the GRPs.

Evaluation Criteria for GRPs

Specific strategies for response to spills in the sensitive areas are detailed in the GRPs. Below is a list of some of the biological, cultural, and booming criteria used to determine whether it is appropriate to develop and maintain GRP strategies at specific locations. These criteria are not intended to be exhaustive, or ranked in order of priority, they are meant to help frame the evaluation of GRP strategies.

Key Criteria for Biological Sites, Species, and Habitats of Concern

What is the expected recovery time for habitats of fish and wildlife resources?
What is the residence time of the oil?

Substrate-

- What is the exposure risk?
- What is the likelihood that a habitat or species will be exposed to direct contact with surface oil or to dispersed/dissolved oil in the water column?
- Given the substrate, is clean-up feasible?

Habitat quantity, quality, and pattern-

- Is the impacted habitat considered scarce at local, regional, or statewide scales?
- Is the size of the impacted habitat significant compared to other sites in the region?
- Is the species diversity or endemism high? Is this true year-round or is it seasonal?
- Is abundance of fish and/or wildlife high? Is this true year-round or is it seasonal?
- What life stages of organisms are present?
- Is the habitat important to threatened or endangered species?
- What is the status of the habitat's integrity (i.e., is the area undeveloped or highly altered?)
- Does the habitat have a special designation or status (i.e., Marine Protected Area, biological research area, restoration site, etc.)?
- Are the habitat and/or its associated fish and wildlife resources especially susceptible to injury by oil?

Key Criteria for Archeological and Cultural Sites of Concern

Deployment- Does the act of deploying the GRP strategy threaten the archeological site (anchoring the boom, parking vehicles, etc.)

Purpose- Will implementing the GRP strategy type (collection, diversion, deflection) negatively impact the site?

Review- If either of the above is possible, then a review of the site records is necessary to determine the exact location and sensitivity of the site. If the site records are old or insufficient, then a field visit is necessary.

Significant developments- Are there significant developments that may make any concern about the impacts irrelevant (housing developments etc.)?

Additional criteria for archaeological sites without existing GRP strategies

- Impacts- Does the site extend below the high tide line?
- Vulnerability- Will it be damaged or destroyed if oil were to hit the area (or by the placement of response equipment in the area, e.g., vacuum trucks, etc.)?
- Integrity- Has the site been disturbed yet, or is it still intact?
- Historic Importance- Is the site nominated for, or already on, the National Register of Historic Places or the State equivalent?
- Tribal Importance- Does the site hold special tribal importance?
- Parish Importance- Does the site hold special Parish importance?
- Feasibility- Is booming the site feasible?

Key Criteria for Socio-Economic Sites of Concern

Strictly economic resources are designated as the third priority for dedication of oil spill response resources, following human health and safety and environmental resources. The designation of economic resources is highly dependent upon the priorities of the local government. Each GRP contains detailed information of economic sites in each Parish or Geographical Response Area. This information includes geographic locations of resources, a brief description of the resource at risk, contact names and numbers, and the priority response ranking.

Key Criteria for the Use of Boom

Effectiveness- Is booming the most effective strategy for reducing oil spill impacts? Would other alternatives such as a phone call to an operator, shutting off a water intake, or closing a tidal gate be as effective?

Safety- Determine if safety of human responder will be put at risk for limited likelihood of strategy success.

Strategy- Determine what type of booming strategy would be the most effective at reducing oil impacts to the resource under prevailing conditions (collection, deflection, or exclusion).

Evaluation- Evaluate the site for advantageous characteristics based on:

- Anchoring substrate. Does the substrate allow responders to easily anchor the boom?
- Accessibility. Can the site be easily accessed by vessel or vehicles?
- Time to arrive on scene. How long will it take to get to the site?
- Potential for oiling. Is the site located near shipping activity or fueling operations?
- Beach substrate. Used Environmental Sensitivity Index (ESI) or Shore-Zone classification to determine vulnerability to oiling and likely oil longevity based on the shoreline type.
- Type and quantity of boom. How many sections of boom and what size anchors will be required for deployment? What is the anchoring depth? What type of boom tending will be required? Will this tending be complicated by the amount of time it takes to arrive at the site or the difficulty of access? Is the amount of boom required reasonable (< 1000 ft)?
- Prevailing weather- especially wind and waves. Is a booming strategy realistic for prevailing conditions?
- Tidal influence. At extreme lows will there be nothing but mud flats (very difficult to tend boom when it is stuck in the mud) or at extreme highs will the entire face of a coastal marsh be underwater (thus exposing the entire perimeter to oil)?
- Influence of currents. What velocities can be expected?
- Feasibility. Depends on: Boom size, boom length, the number and size of anchors, the capability of the recruited workboats (to tow boom, set and recover anchors, shelter boat crews, carry boom and associated equipment), the experience of the boat crew, and the effectiveness of the anchoring system (both on shore and in water).

Prioritization

Through the priority evaluation process, an area is broken down by type (human health and safety, environmental, economic and cultural) and sensitivity (high, medium, low). This evaluation process focuses on the sensitivities of areas and not jurisdictional boundaries. Once all areas have been evaluated and broken down, three levels of priority are generally all that is needed for pre-spill planning:

A – Protect First

B – Protect After A Areas

C – Protect After B Areas

The following prioritizations were determined by the Geographic Response Plan subcommittee:

Priority A

- Public drinking water intakes
- Industrial water intakes with public health and safety impacts (e.g. public utility intake, supported by state managed early warning network on MISS RIVER)
- Tidal Inlets – Primary Tidal Inlets that are protectable
- Secondary inlets inside bays that connect to extensive sensitive areas
- Breaches, wash-overs and other low areas where oil can enter sensitive habitats
- Exceptional/Highly sensitive wetlands with high biodiversity site (e.g. NWR, State refuges)
 - Important Bird Areas
 - Bird nesting islands (e.g. Raccoon Island, Queen Bess Island, Brush Island)
 - Other bird nesting concentrations including T&E species
 - Seasonal bird concentration areas onshore (e.g. South Pass)
 - Freshwater Diversion (Manmade and Natural)

Priority B

- Exceptional Oyster beds in the intertidal
- Seagrass Beds in less than 1 meter of water
- High use recreational sites
- Important Industrial Areas (e.g. fishing ports, marinas, industrial corridors)
- Other water intakes not specified in Priority A
- Cultural/Historical sites of concern (e.g. contact SHPO/Tribes)

Priority C

- Small tidal channels and canal openings
- Sheltered tidal flats
- Seagrass beds in greater than 1 meter of water
- Aquaculture sites and oyster lease areas
- Wetland restoration areas
- Other industrial areas
- Areas identified by local authorities not previously noted in Priority A or B

The following areas were not included due to the initial protection difficulty:

- Open gulf beaches
- Exposed wetland shorelines (exposed to waves and currents) (as described in Appendix G)
- Exposed rip-rap

Strategy Selection

Booming strategy recommendations were developed using local knowledge, scientific data, and known operational uses and limitation of common oil spill response equipment. Utilizing publications, such as the Exxon Mobil Oil Spill Response Manual and the National Oceanic Atmospheric Administration's Characteristic Coastal Habitats Choosing Spill Response Alternatives) a quick reference job-aid was developed to assist with the selection of an appropriate site given the noted hydrology and climatic considerations. This process applies a consistent and standard analysis of each site. All water body openings, cuts, and lengths between two points of land greater than one thousand feet (1,000 ft) received a strategy of Deferred Action due to limited resources available during initial response. All sites related to infrastructure or private resources received a strategy of Notification to Site Manager. However, these sites are considered sensitive and should be given due consideration for more defensive response actions by the Incident Command.

GRP Strategy Selection Job-Aid

Water Body Type	Current/Wave Action	Shoreline	Strategy
Lake or Pond		ESI 1-6	Containment booming/collection point
		ESI 7-10	Exclusion booming
Rivers or Large Streams 1.6 feet (0.5) deep	Currents <1 knot	ESI 1-6	Containment booming/collection point
		ESI 7-10	Exclusion booming
	Currents 1-2 knots	ESI 1-6	Diversion booming to collection point
		ESI 7-10	Deflection booming
	Currents >2 knots	ESI 1-6	Multi-layer diversion booming to collection point
		ESI 7-10	Multi-layer deflection booming
Small streams <33 ft wide (10m) and 1.6 ft (0.5 m) deep	Currents <1 knot	ESI 1-6	Containment booming/collection point
		ESI 7-10	Exclusion booming
	Currents 1-2 knots	ESI 1-6	Diversion booming to collection point
		ESI 7-10	Deflection booming
	Currents >2 knots	ESI 1-6	Multi-layer diversion booming to collection point
		ESI 7-10	Multi-layer deflection booming
Shallow Rivers or streams	Currents 0-2 knots	ESI 1-6	Containment booming/collection point
		ESI 7-10	Diversion booming to collection point
Straight Coastline with Sensitive Areas	Breaking waves <1.5 ft (0.5m)	ESI 1-10	Diversion boom up current of sensitive area
	Breaking waves > 1.5 ft		Deferred Action
Entrance to Bays, Harbors, Lagoons, and Estuaries	Breaking waves <1.5 ft (0.5m) and currents < 1 kt (0.5 m/s)	ESI 1-10	Exclusion booming
	Breaking waves <1.5 ft (0.5m) and currents >1 kt (0.5 m/s)	ESI 1-6	Diversion booming to collection point
		ESI 7-10	Deflection booming
	Breaking waves >1.5 ft (0.5m)	ESI 1-10	Deferred Action
Narrow Channel/ Narrow Tidal Channel	Current <1 kt (0.5 m/s)	ESI 1-10	Exclusion Booming
	Current >1 kt (0.5 m/s)	ESI 1-6	Diversion booming with collection point
		ESI 7-10	Deflection booming
Open Water	Breaking Waves < 1.5 ft	N/A	Exclusion Booming
	Breaking waves >1.5 ft		Deferred Action

NOTE: All openings, cuts, and lengths between two points of land greater than one thousand feet (1,000 ft) will receive a strategy of **Deferred Action** due to limited resources for initial response.

All sites related to infrastructure or private resources will receive a strategy of **Notification to Site Manager**.

Southeast Louisiana Area Contingency Plan

Sensitive Site Index

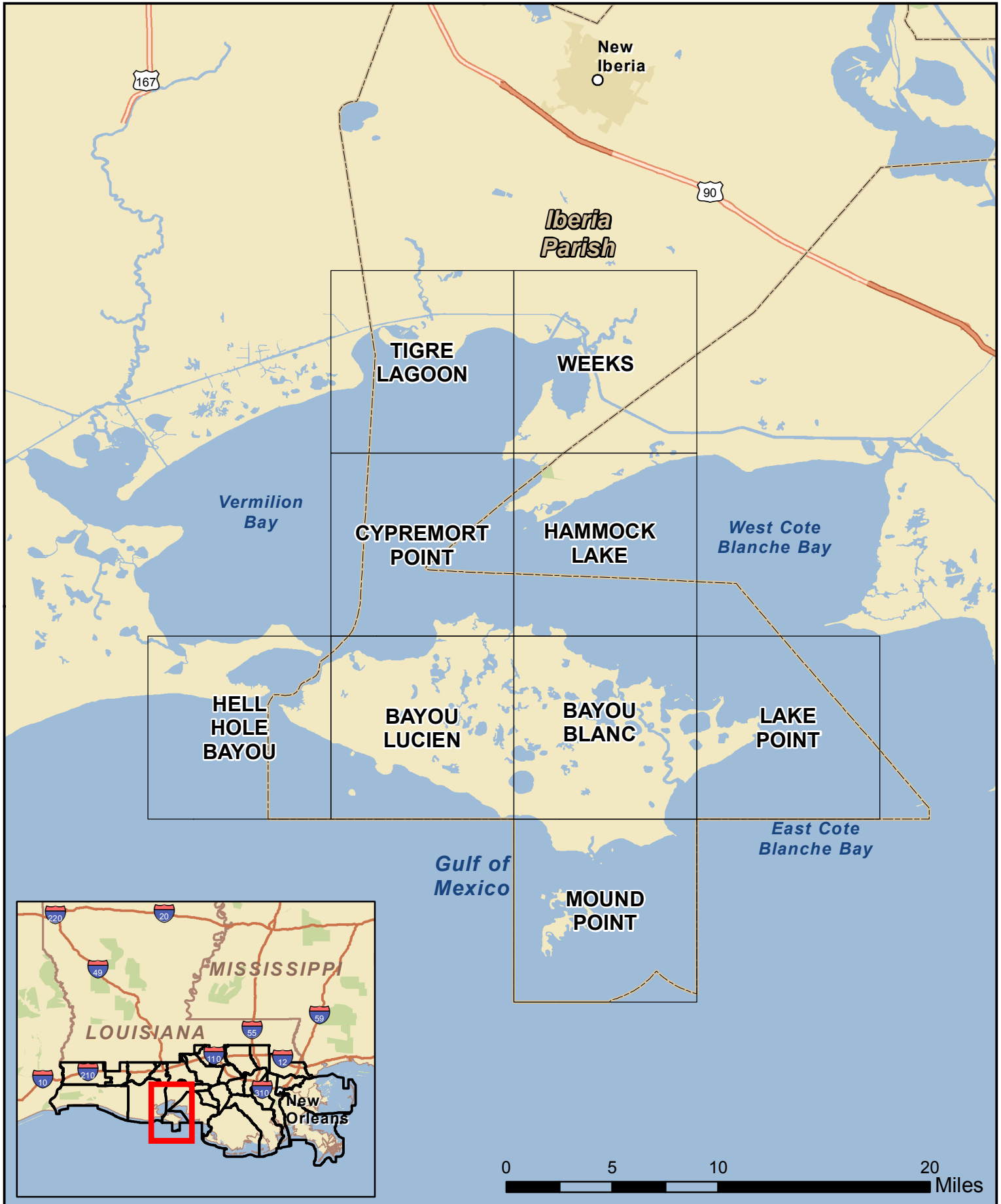
The following compilation of sensitive sites is a result of the hard work of Morgan City Area Stakeholders. The sites contained within this report will play a significant role in the development of the Geographic Response Plans, a geographic based response plan to oil and hazardous material releases.

Any modifications or additions to this set of data is welcomed and encouraged. Please contact the USCG MSU Morgan City Contingency Planning Specialist to make any submissions.

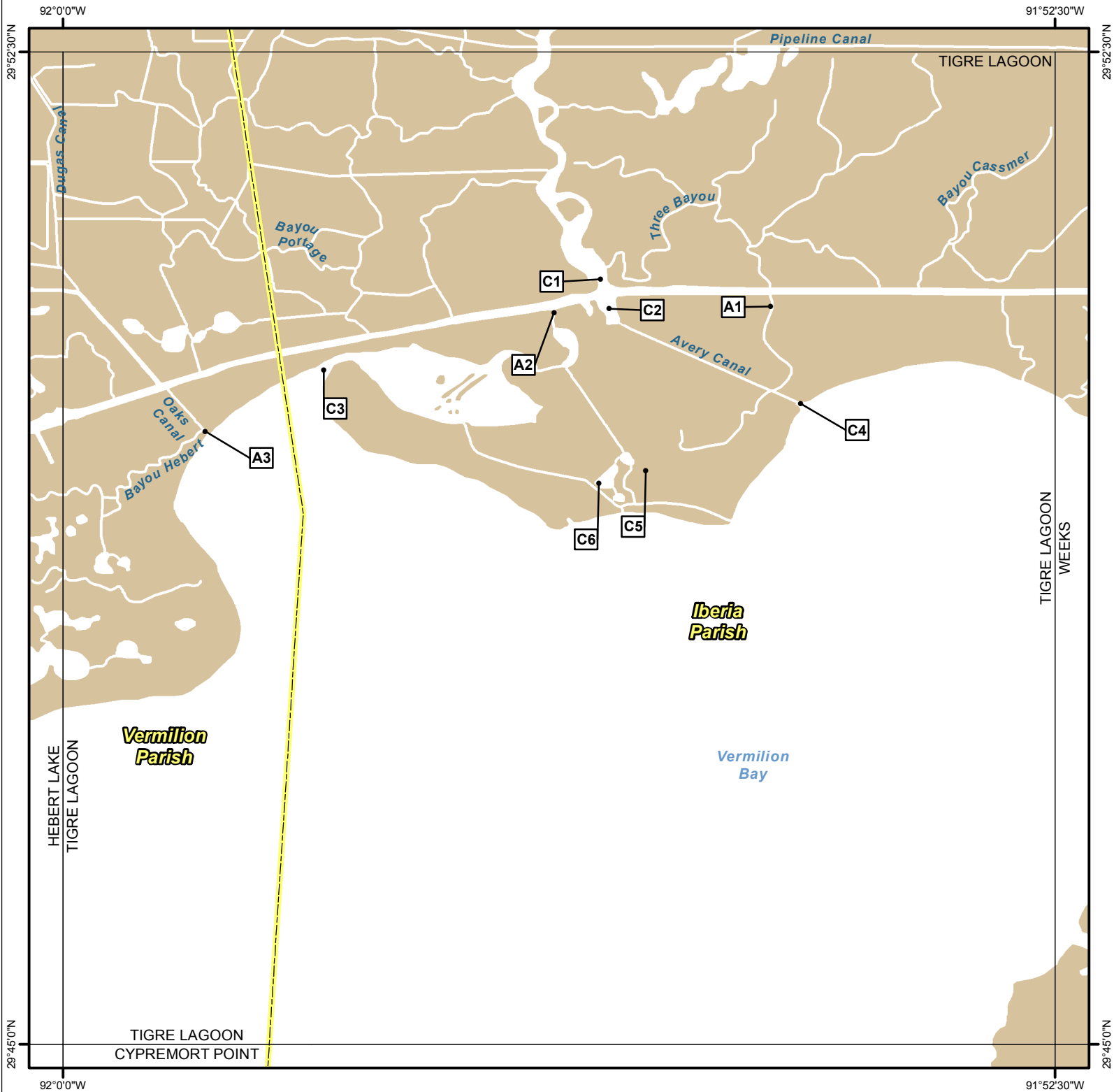


Southeast Louisiana ACP

Iberia Parish Index Map



TIGRE LAGOON QUAD

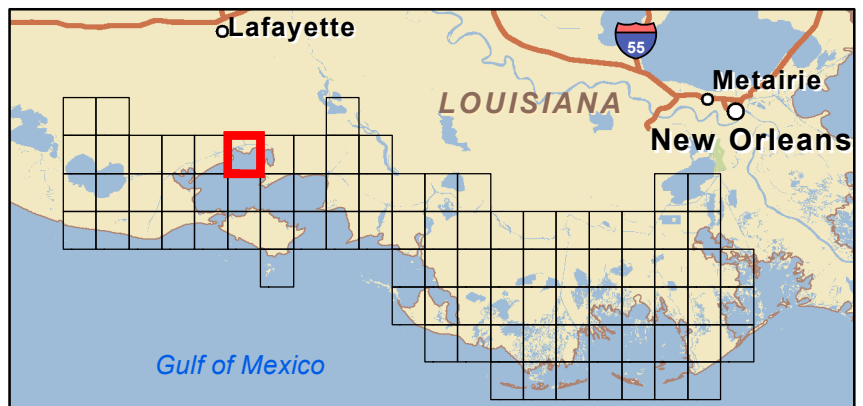


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Bayou at Intracoastal Waterway		Parish:	Iberia
		Quad Name:	Tigre Lagoon
Priority: A		Quad Number:	2909109
Site Alias: N/A		Mile Marker:	144.5
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 50' 34.513" N
		Longitude:	91° 54' 38.915" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Mouth of Tigre Lagoon at Intracoastal Waterway	Parish:	Iberia	
	Quad Name:	Tigre Lagoon	
Priority: A	Quad Number:	2909109	
Site Alias: N/A	Mile Marker:	146.1	
	Managed (Y/N)?:	N	
Site Description: Sensitive Habitat	Latitude:	29° 50' 31.849" N	
	Longitude:	91° 56' 17.218" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Oaks Canal / Herbert Bayou		Parish: Vermilion	
		Quad Name: Tigre Lagoon	
Priority: A		Quad Number: 2909109	
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude: 29° 49' 37.968" N	
		Longitude: 91° 58' 55.616" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Inlet To Marsh From Bay	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish/LDEQ	
Submit Date: 2013.04.16		State Comments:	

Site Information: C1		Location Information	
Name: Entrance to Bayou Petite Anse	Parish:	Iberia	
	Quad Name:	Tigre Lagoon	
Priority: C	Quad Number:	2909109	
Site Alias: State Recreation Area (Submitted by State)	Mile Marker:		
Site Description: Marshland and fisheries	Managed (Y/N)?:	N	
	Latitude:	29° 50' 46.937" N	
	Longitude:	91° 55' 56.180" W	
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments: Marshland and fisheries		
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By Prescott Marshall	State Submitter: DEQ/St. Mary Parish/DNR/CPRA		
Submit Date: 2012.09.12	State Comments: Point is in question by State		

Site Information: C2		Location Information	
Name: Intersection of Avery Canal and Intracoastal Waterway	Parish:	Iberia	
	Quad Name:	Tigre Lagoon	
Priority: C	Quad Number:	2909109	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Site Description: Marshland and fisheries	Latitude:	29° 50' 33.490" N
	Longitude:	91° 55' 52.217" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marshland and fisheries	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

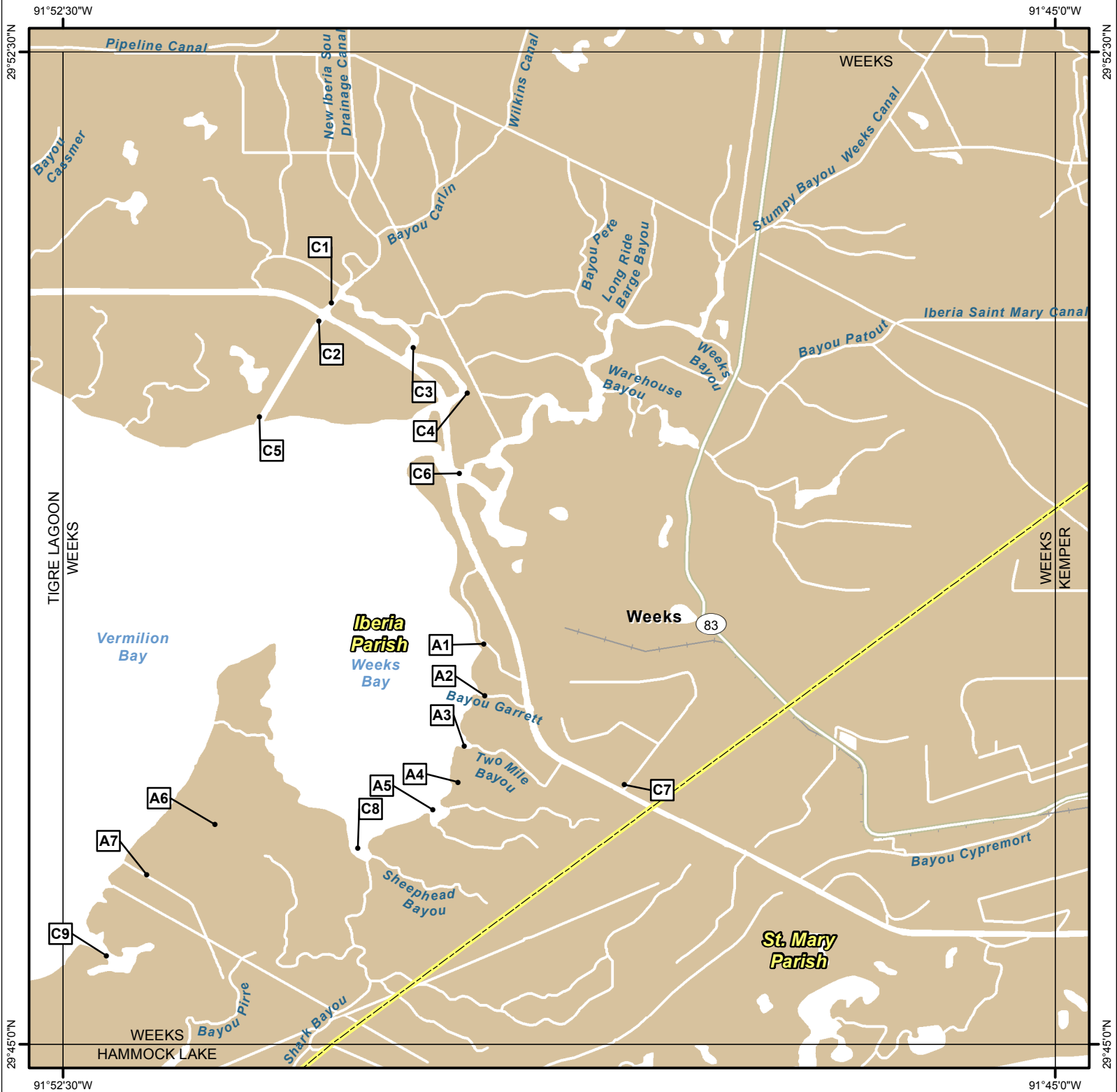
Site Information: C3		Location Information	
Name: Eastern Entrance/ Tigre Lagoon		Parish:	Iberia
		Quad Name:	Tigre Lagoon
Priority:	C	Quad Number:	2909109
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Entrance from Vermillion bay		Latitude:	29° 50' 06.045" N
		Longitude:	91° 58' 01.697" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marshland and fisheries	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C4		Location Information	
Name: Western Entrance/Tigre Lagoon	Parish:	Iberia	
	Quad Name:	Tigre Lagoon	
Priority: C	Quad Number:	2909109	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 49' 50.619" N	
Site Description: Entrance from Vermillion bay	Longitude:	91° 54' 25.385" W	
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marshland and fisheries	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C5		Location Information	
Name: Southwestern Entrance/Tigre Lagoon	Parish: Iberia	Quad Name: Tigre Lagoon	
Priority: C	Quad Number: 2909109		
Site Alias: None	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 49' 20.133" N		
Site Description: Entrance from Vermillion bay	Longitude: 91° 55' 35.672" W		
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marshland and fisheries	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C6		Location Information	
Name: Southeastern Entrance/Tigre Lagoon	Parish: Iberia	Quad Name: Tigre Lagoon	
Priority: C	Quad Number: 2909109		
Site Alias: None	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 49' 14.331" N		
Site Description: Entrance from Vermillion bay	Longitude: 91° 55' 56.997" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marshland and fisheries	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

WEEKS QUAD

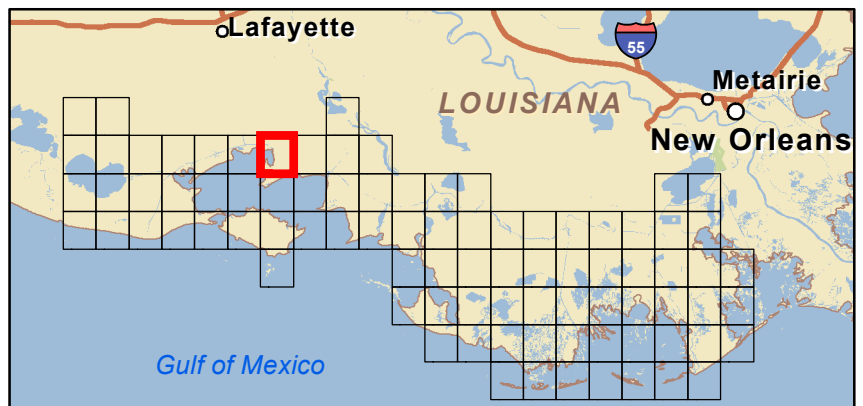


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Canal at Weeks Bay		Parish:	Iberia
		Quad Name:	Weeks
Priority:	A	Quad Number:	2909110
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 48' 01.622" N
		Longitude:	91° 49' 19.018" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments:	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Bayou Garrett at Weeks Bay	Parish: Iberia	Quad Name: Weeks	
	Quad Number: 2909110		
Priority: A	Mile Marker:		
Site Alias: N/A	Managed (Y/N)?: N		
Site Description: Sensitive Habitat	Latitude: 29° 47' 37.960" N		
	Longitude: 91° 49' 18.767" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Two Mouth Bayou at Weeks Bay	Parish:	Iberia	
	Quad Name:	Weeks	
Priority: A	Quad Number:	2909110	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 47' 15.026" N	
Site Description: Sensitive Habitat	Longitude:	91° 49' 28.062" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A4		Location Information	
Name: Multiple Bayous (north) at Weeks Bay	Parish:	Iberia	
	Quad Name:	Weeks	
Priority: A	Quad Number:	2909110	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 46' 58.806" N	
Site Description: Sensitive Habitat	Longitude:	91° 49' 30.926" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A5		Location Information	
Name: Multiple Bayous (south) at Weeks Bay	Parish:	Iberia	
	Quad Name:	Weeks	
Priority: A	Quad Number:	2909110	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 46' 46.313" N	
Site Description: Sensitive Habitat	Longitude:	91° 49' 42.230" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A6		Location Information	
Name: Canal (north)	Parish: Iberia		
	Quad Name: Weeks		
Priority: A	Quad Number: 2909110		
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 46' 39.606" N		
Site Description: Sensitive Habitat	Longitude: 91° 51' 21.062" W		
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A7		Location Information	
Name: Canal (south)	Parish:	Iberia	
	Quad Name:	Weeks	
Priority: A	Quad Number:	2909110	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
Site Description: Sensitive Habitat	Latitude:	29° 46' 16.820" N	
	Longitude:	91° 51' 52.072" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: C1		Location Information	
Name: Bayou Carlin at Intracoastal Waterway	Parish:	Iberia	
	Quad Name:	Weeks	
Priority: C	Quad Number:	2909110	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 50' 36.294" N	
Site Description: North side of ICW	Longitude:	91° 50' 28.215" W	
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments: Marshland and fisheries		
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By Prescott Marshall	State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA		
Submit Date: 2012.09.12	State Comments: Agencies concur with point		

Site Information: C2		Location Information	
Name: Weeks Island Channel at Intracoastal Waterway		Parish:	Iberia
		Quad Name:	Weeks
Priority: C		Quad Number:	2909110
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Marshland and fisheries		Latitude:	29° 50' 28.123" N
		Longitude:	91° 50' 33.906" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Marshland and fisheries	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C3		Location Information	
Name: Bayou at Intracoastal Waterway (north)	Parish:	Iberia	
	Quad Name:	Weeks	
Priority: C	Quad Number:	2909110	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 50' 16.121" N	
Site Description: Within the vicinity of Weeks Island	Longitude:	91° 49' 51.200" W	
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments:		
ESI Description 10A: Salt- and brackish-water marshes			
Marshland and fisheries			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By Prescott Marshall	State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA		
Submit Date: 2012.09.12	State Comments: Agencies concur with point		

Site Information: C4		Location Information	
Name: Bayou at Intracoastal Waterway (central)	Parish:	Iberia	
	Quad Name:	Weeks	
Priority: C	Quad Number:	2909110	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 49' 55.370" N	
Site Description: Within the vicinity of Weeks Island	Longitude:	91° 49' 26.618" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marshland and fisheries	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C5		Location Information	
Name: Weeks Bay Channel	Parish: Iberia	Quad Name: Weeks	
	Quad Number: 2909110		
Priority: C	Mile Marker:		
Site Alias: None	Managed (Y/N)?: N		
	Latitude: 29° 49' 44.438" N		
	Longitude: 91° 51' 01.003" W		
Site Description: Tidal inlet from the North side of Weeks Bay			
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Marshland and fisheries	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

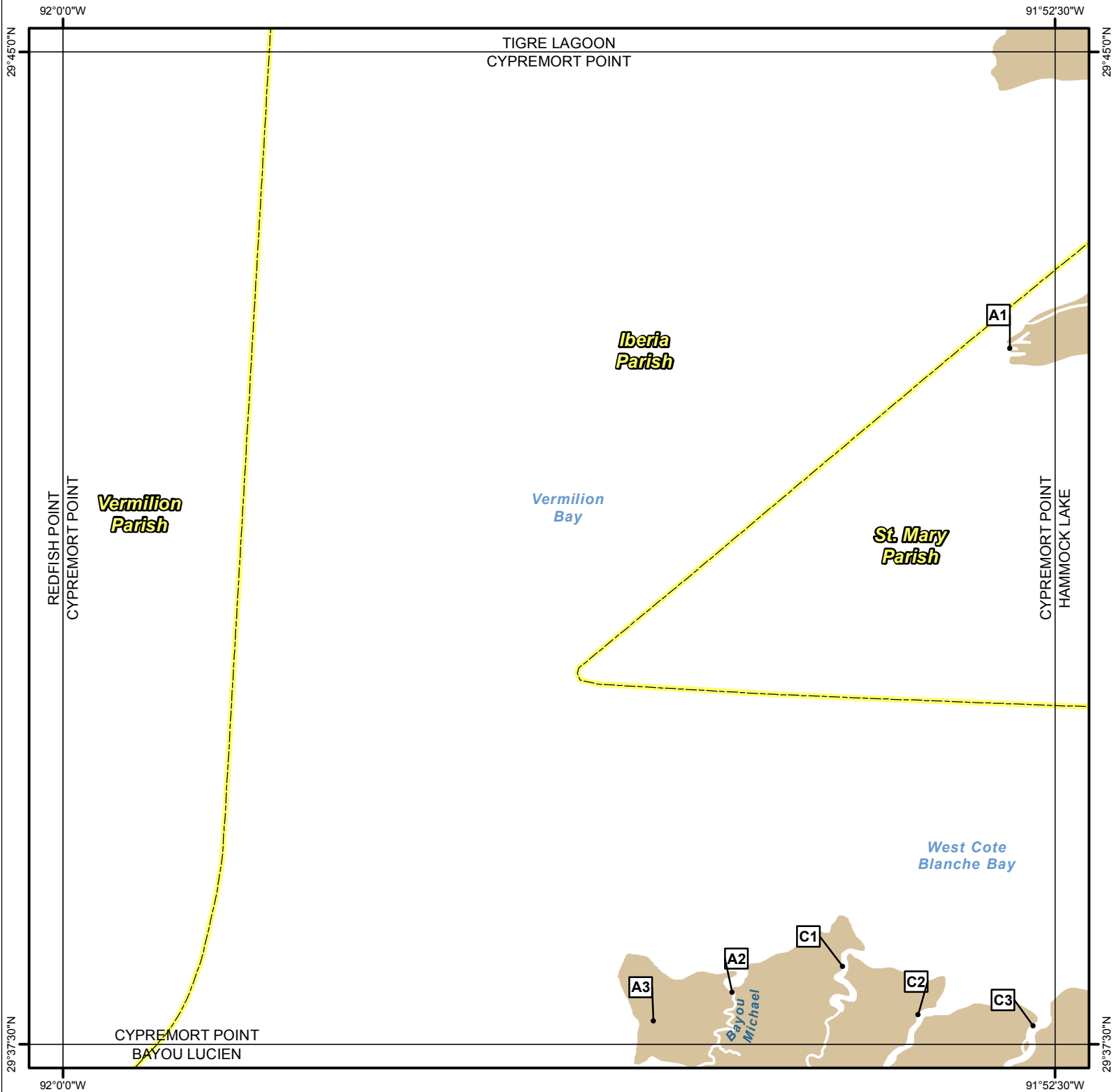
Site Information: C6		Location Information	
Name: Bayou at Intracoastal Waterway (south)		Parish:	Iberia
		Quad Name:	Weeks
Priority: C		Quad Number:	2909110
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Southeast of Weeks Island		Latitude:	29° 49' 18.806" N
		Longitude:	91° 49' 30.210" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marshland and fisheries	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C7		Location Information	
Name: Entrance to old oil drilling channel from Intracoastal Waterway	Parish:	Iberia	
	Quad Name:	Weeks	
Priority: C	Quad Number:	2909110	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 46' 57.669" N	
Site Description: Marshland and fisheries	Longitude:	91° 48' 15.344" W	
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments: Marshland and fisheries		
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By Prescott Marshall	State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA		
Submit Date: 2012.09.12	State Comments: Agencies concur with point		

Site Information: C8		Location Information	
Name: Northern Entrance of Shark Bayou	Parish:	Iberia	
	Quad Name:	Weeks	
Priority: C	Quad Number:	2909110	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 46' 29.108" N	
Site Description: From Weeks Bay	Longitude:	91° 50' 16.253" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marshland and fisheries	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C9		Location Information	
Name: Western Side of Shark Island		Parish:	Iberia
		Quad Name:	Weeks
Priority:	C	Quad Number:	2909110
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: From Vermillion Bay		Latitude:	29° 45' 40.085" N
		Longitude:	91° 52' 10.366" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marshland and fisheries	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

CYPREMORT POINT QUAD

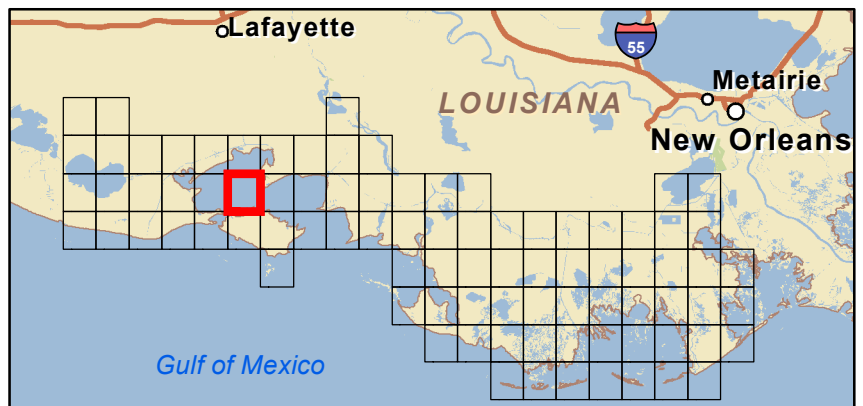


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Cypremort Point Business & Residences	Parish: St. Mary	Quad Name: Cypremort Point	
Priority: A	Quad Number: 2909117		
Site Alias: Cypremort Point Residential Recreation Area (Submitted by State)	Mile Marker:		
	Managed (Y/N)?: N		
Site Description: Residential/Rec Area	Latitude: 29° 42' 45.634" N		
	Longitude: 91° 52' 50.419" W		
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Two inlets to be considered	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

Site Information: A2		Location Information	
Name: Bayou Michel		Parish:	Iberia
		Quad Name:	Cypremort Point
Priority:	A	Quad Number:	2909117
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 37' 53.688" N
Site Description: State Refuge part of Marsh Island Refuge		Longitude:	91° 54' 56.372" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive habitat	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish/LDEQ	
Submit Date: 2013.04.16		State Comments:	

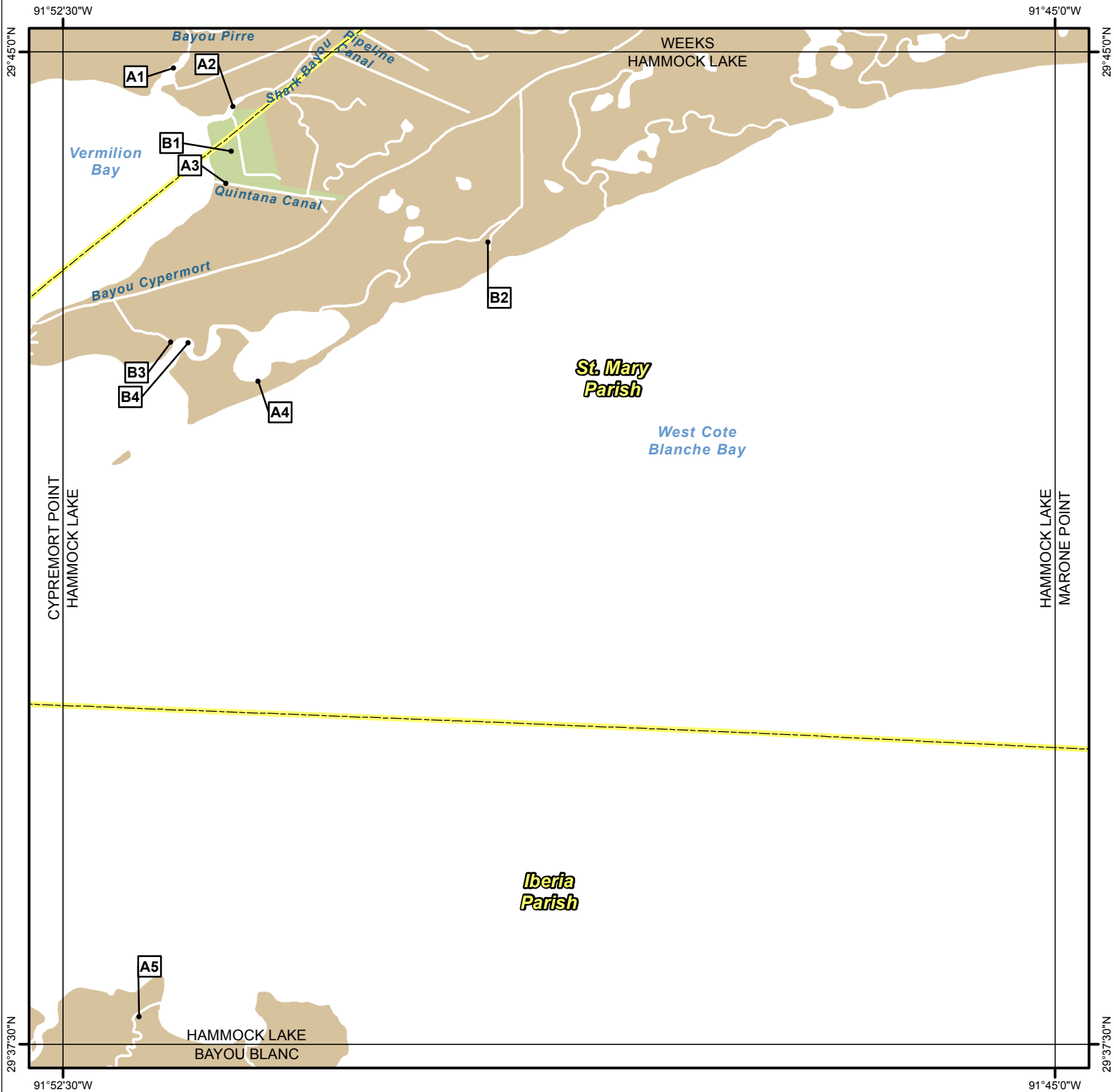
Site Information: A3		Location Information	
Name: Multiple Bayous	Parish: Iberia	Quad Name: Cypremort Point	
	Priority: A	Quad Number: 2909117	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?: Y - Wildlife Refuge		
	Latitude: 29° 37' 40.759" N		
Site Description: State Refuge part of Marsh Island Refuge	Longitude: 91° 55' 32.247" W		
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: C1		Location Information	
Name: Entrance to Lucien Bayou from Vermilion Bay	Parish:	Iberia	
	Quad Name:	Cypremort Point	
Priority: C	Quad Number:	2909117	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 38' 05.334" N	
Site Description: State Refuge part of Marsh Island Refuge	Longitude:	91° 54' 06.247" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive habitat	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C2		Location Information	
Name: Entrance to Platte Bayou from Vermilion Bay	Parish:	Iberia	
	Quad Name:	Cypremort Point	
Priority: C	Quad Number:	2909117	
Site Alias: None Site Description: State Refuge part of Marsh Island Refuge	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 37' 43.236" N	
	Longitude:	91° 53' 32.074" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive habitat	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C3		Location Information	
Name: LDWF Marsh Island Station		Parish:	Iberia
		Quad Name:	Cypremort Point
Priority: C		Quad Number:	2909117
Site Alias: None Site Description: State Refuge part of Marsh Island Refuge		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 37' 38.264" N
		Longitude:	91° 52' 39.850" W
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

HAMMOCK LAKE QUAD

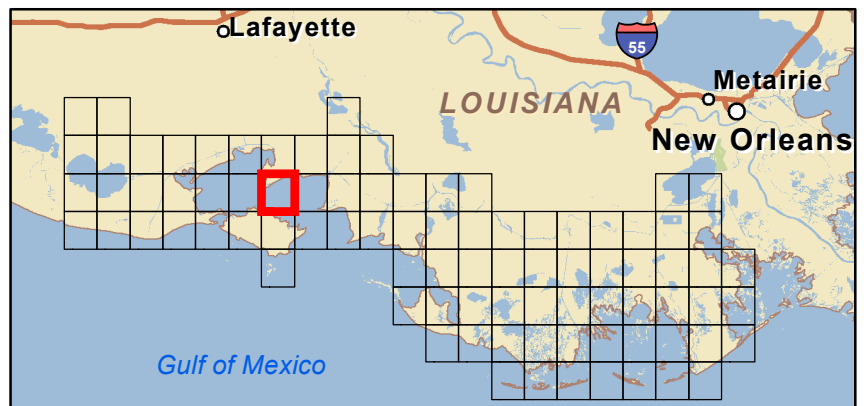


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Northwest Cypremort Point Inlet		Parish:	Iberia
		Quad Name:	Hammock Lake
Priority: A		Quad Number:	2909118
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Inlet		Latitude:	29° 44' 52.785" N
		Longitude:	91° 51' 40.031" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments:	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DNR/CPRA		State Submitter: DNR/CPRA	
Submit Date: 2013.04.16		State Comments:	

Site Information: A2		Location Information	
Name: Shark Bayou		Parish:	Iberia
		Quad Name:	Hammock Lake
Priority: A		Quad Number:	2909118
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Inlet		Latitude:	29° 44' 35.583" N
		Longitude:	91° 51' 12.848" W
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DNR/CPRA		State Submitter: DNR/CPRA	
Submit Date: 2013.04.16		State Comments:	

Site Information: A3		Location Information	
Name: Quintana Canal		Parish:	St. Mary
		Quad Name:	Hammock Lake
Priority:	A	Quad Number:	2909118
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: Cypremort Pt. State Park		Latitude:	29° 44' 00.545" N
		Longitude:	91° 51' 16.243" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		State Park	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

Site Information: A4		Location Information	
Name: Mouth of Hammock Lake (south)	Parish: St. Mary	Quad Name: Hammock Lake	
	Quad Number: 2909118		
Priority: A	Mile Marker:		
Site Alias: Franklin Canal at ICW (Submitted by State)	Managed (Y/N)?: N		
	Latitude: 29° 42' 30.928" N		
	Longitude: 91° 51' 01.618" W		
Site Description: Sensitive Habitat			
Response Considerations			
Site Strategy: Deferred Action	Site Strategy Comments:		
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments: Sensitive Habitat		
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By EOC	State Submitter: DEQ/ St Mary Parish/DNR/CPRA		
Submit Date: 2012.10.01	State Comments: State Concurs with Parish		

Site Information: A5		Location Information	
Name: West Joe Aucoin Bayou		Parish:	Iberia
		Quad Name:	Hammock Lake
Priority:	A	Quad Number:	2909118
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 37' 42.548" N
Site Description: State Refuge part of Marsh Island Refuge		Longitude:	91° 51' 55.569" W
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

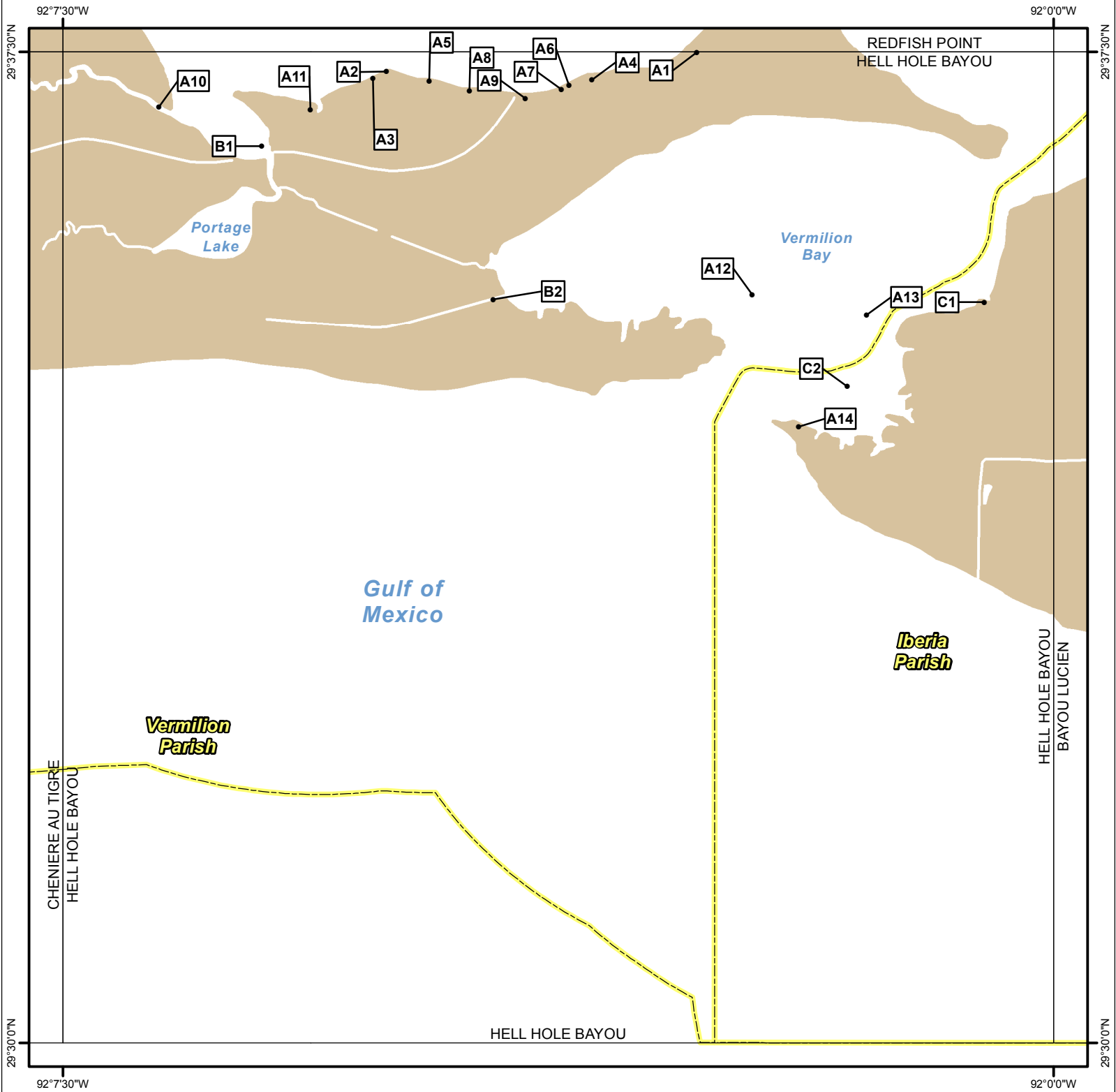
Site Information: B1		Location Information	
Name: Cypremort Point State Recreation Area		Parish:	St. Mary
		Quad Name:	Hammock Lake
Priority: B		Quad Number:	2909118
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: State park/recreation area		Latitude:	29° 44' 15.018" N
		Longitude:	91° 51' 13.732" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter: DEQ/St. Mary Parish/DNR/CPRA	
Submit Date: 2012.03.13		State Comments: Point is in question by State	

Site Information: B2		Location Information	
Name: Inlet near Prince Lake		Parish:	St. Mary
		Quad Name:	Hammock Lake
Priority: B		Quad Number:	2909118
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Marshland		Latitude:	29° 43' 33.878" N
		Longitude:	91° 49' 17.366" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marshland	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Duval Arthur St Mary OEP		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

Site Information: B3		Location Information	
Name: Mouth of Hammock Bayou (north)		Parish:	St. Mary
		Quad Name:	Hammock Lake
Priority: B		Quad Number:	2909118
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 42' 48.316" N
		Longitude:	91° 51' 41.177" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.03.13		State Comments: State Concurs with Parish	

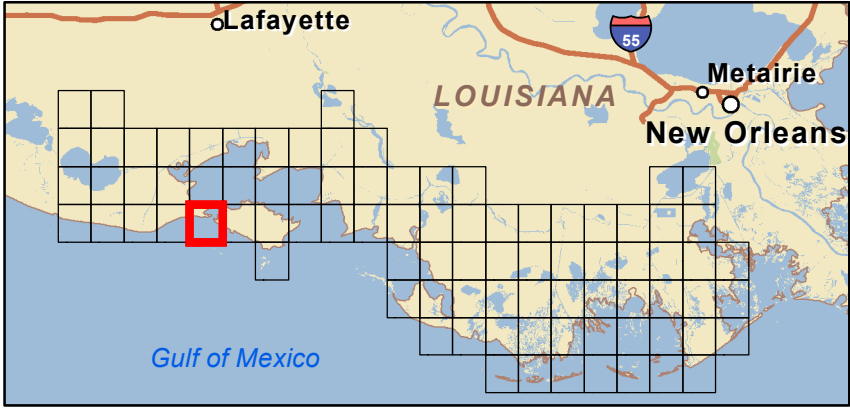
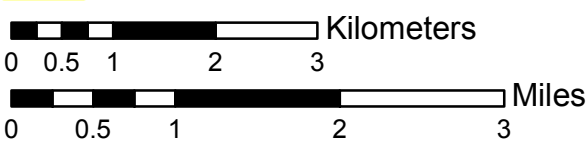
Site Information: B4		Location Information	
Name: Mouth of Hammock Bayou (central)		Parish:	St. Mary
		Quad Name:	Hammock Lake
Priority:	B	Quad Number:	2909118
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Two inlets to be considered		Latitude:	29° 42' 48.082" N
		Longitude:	91° 51' 33.307" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Two inlets to be considered	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

HELL HOLE BAYOU QUAD



Legend

- GRP Sites
- Quad Boundaries
- ▬ Parish Boundaries



Site Information: A1		Location Information	
Name: Bayou 10 south Vermilion Bay	Parish:	Vermilion	
	Quad Name:	Hell Hole Bayou	
Priority: A	Quad Number:	2909232	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 37' 29.830" N	
Site Description: Sensitive Habitat	Longitude:	92° 02' 42.114" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: National Audubon Society		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Bayou 03 south Vermilion Bay	Parish:	Vermilion	
	Quad Name:	Hell Hole Bayou	
Priority: A	Quad Number:	2909232	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 37' 21.103" N	
Site Description: State Area part of State Wildlife Refuge	Longitude:	92° 05' 03.173" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Bayou 02 south Vermilion Bay	Parish:	Vermilion	
	Quad Name:	Hell Hole Bayou	
Priority: A	Quad Number:	2909232	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 37' 18.113" N	
Site Description: State Area part of State Wildlife Refuge	Longitude:	92° 05' 09.151" W	
Response Considerations			
Site Strategy: Exclusion Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments: Sensitive Habitat		
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF	Special Contact:		
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio	State Submitter: DEQ-Shane Miller and Steve Lorio		
Submit Date: 2013.04.16	State Comments: Sensitive Habitat		

Site Information: A4		Location Information	
Name: Bayou 09 south Vermilion Bay	Parish:	Vermilion	
	Quad Name:	Hell Hole Bayou	
Priority: A	Quad Number:	2909232	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 37' 17.254" N	
Site Description: State Area part of State Wildlife Refuge	Longitude:	92° 03' 29.758" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A5		Location Information	
Name: Bayou 04 south Vermilion Bay		Parish:	Vermilion
		Quad Name:	Hell Hole Bayou
Priority: A		Quad Number:	2909232
Site Alias: N/A Site Description: State Area part of State Wildlife Refuge		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 37' 16.741" N
		Longitude:	92° 04' 43.707" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A6		Location Information	
Name: Bayou 08 south Vermilion Bay	Parish:	Vermilion	
	Quad Name:	Hell Hole Bayou	
Priority: A	Quad Number:	2909232	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 37' 14.942" N	
Site Description: State Area part of State Wildlife Refuge	Longitude:	92° 03' 40.152" W	
Response Considerations			
Site Strategy: Exclusion Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments: Sensitive Habitat		
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF	Special Contact:		
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio	State Submitter: DEQ-Shane Miller and Steve Lorio		
Submit Date: 2013.04.16	State Comments: Sensitive Habitat		

Site Information: A7		Location Information	
Name: Bayou 07 south Vermilion Bay	Parish:	Vermilion	
	Quad Name:	Hell Hole Bayou	
Priority: A	Quad Number:	2909232	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 37' 12.956" N	
Site Description: State Area part of State Wildlife Refuge	Longitude:	92° 03' 43.551" W	
Response Considerations			
Site Strategy: Exclusion Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments: Sensitive Habitat		
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF	Special Contact:		
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio	State Submitter: DEQ-Shane Miller and Steve Lorio		
Submit Date: 2013.04.16	State Comments: Sensitive Habitat		

Site Information: A8		Location Information	
Name: Bayou 05 south Vermilion Bay	Parish:	Vermilion	
	Quad Name:	Hell Hole Bayou	
Priority: A	Quad Number:	2909232	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 37' 12.349" N	
Site Description: State Area part of State Wildlife Refuge	Longitude:	92° 04' 25.394" W	
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments: Sensitive Habitat		
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF	Special Contact:		
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio	State Submitter: DEQ-Shane Miller and Steve Lorio		
Submit Date: 2013.04.16	State Comments: Sensitive Habitat		

Site Information: A9		Location Information	
Name: Bayou 06 south Vermilion Bay	Parish:	Vermilion	
	Quad Name:	Hell Hole Bayou	
Priority: A	Quad Number:	2909232	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 37' 09.000" N	
Site Description: Sensitive Habitat	Longitude:	92° 04' 00.076" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A10		Location Information	
Name: Hog Bayou Inlet at Vermilion Bay	Parish:	Vermilion	
	Quad Name:	Hell Hole Bayou	
Priority: A	Quad Number:	2909232	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 37' 05.124" N	
Site Description: State Area part of State Wildlife Refuge	Longitude:	92° 06' 46.363" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive habitat	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A11		Location Information	
Name: Bayou 01 south Vermilion Bay	Parish:	Vermilion	
	Quad Name:	Hell Hole Bayou	
Priority: A	Quad Number:	2909232	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 37' 03.855" N	
Site Description: State Area part of State Wildlife Refuge	Longitude:	92° 05' 37.623" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A12		Location Information	
Name: Bird Rookery SW Pass		Parish:	Vermilion
		Quad Name:	Hell Hole Bayou
Priority: A		Quad Number:	2909232
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Wading bird rookery		Latitude:	29° 35' 39.893" N
		Longitude:	92° 02' 16.964" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments:	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: National Audubon Society		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter: DEQ/Vermilion Parish/LDWF/DNR/CPRA	
Submit Date: 2012.03.13		State Comments: Agencies Concur with point	

Site Information: A13		Location Information	
Name: Shell Reefs SW Pass / Island in Vermilion Bay		Parish:	Vermilion
		Quad Name:	Hell Hole Bayou
Priority: A		Quad Number:	2909232
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Bird nesting area		Latitude:	29° 35' 30.588" N
		Longitude:	92° 01' 24.911" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Loafing and nesting area for a variety of bird species	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A14		Location Information	
Name: Lighthouse Point / Island		Parish:	Iberia
		Quad Name:	Hell Hole Bayou
Priority:	A	Quad Number:	2909232
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
Site Description: State Refuge part of Marsh Island Refuge		Latitude:	29° 34' 39.766" N
		Longitude:	92° 01' 55.797" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 6A		Resources At Risk Comments: Tern nesting area	
ESI Description 6A: Gravel beaches			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

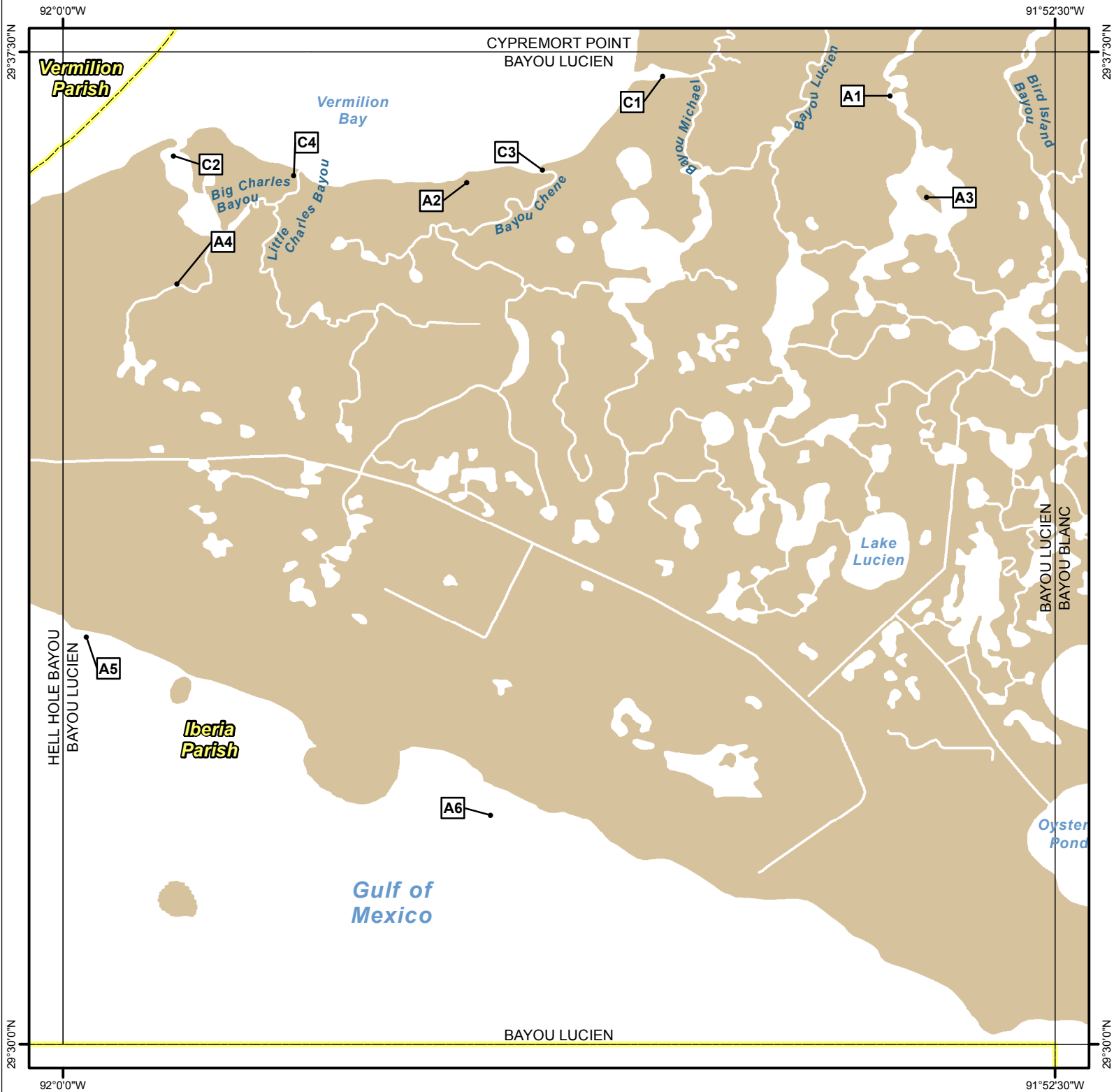
Site Information: B1		Location Information	
Name: Portage Lake Primary Inlet		Parish:	Vermilion
		Quad Name:	Hell Hole Bayou
Priority: B		Quad Number:	2909232
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 36' 47.325" N
Site Description: State Area part of State Wildlife Refuge		Longitude:	92° 05' 59.802" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat / Paul J. Rainey Sanctuary	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Rebecca Broussard		State Submitter: DEQ/Vermilion Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies Concur with point	

Site Information: B2		Location Information	
Name: Canal		Parish:	Vermilion
		Quad Name:	Hell Hole Bayou
Priority: B		Quad Number:	2909232
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: Primary Inlet		Latitude:	29° 35' 37.552" N
		Longitude:	92° 04' 14.608" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Paul Rainey Sanctuary	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: National Audubon Society		Special Contact:	
Site Statistics			
Submitted By Rebecca Broussard		State Submitter: DEQ/Vermilion Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies Concur with point	

Site Information: C1		Location Information	
Name: Shell Reefs SW Pass / Porpoise Point		Parish:	Iberia
		Quad Name:	Hell Hole Bayou
Priority:	C	Quad Number:	2909232
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: Sensitive Habitat		Latitude:	29° 35' 36.434" N
		Longitude:	92° 00' 31.330" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat - many small inlets to refuge marshes	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C2		Location Information	
Name: Lighthouse Point		Parish:	Iberia
		Quad Name:	Hell Hole Bayou
Priority:	C	Quad Number:	2909232
Site Alias: None		Mile Marker:	
		Managed (Y/N)?:	Y - Wildlife Area
Site Description: Sensitive Habitat		Latitude:	29° 34' 58.154" N
		Longitude:	92° 01' 33.766" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Sensitive habitat - many small inlets to refuge marshes	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By: Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

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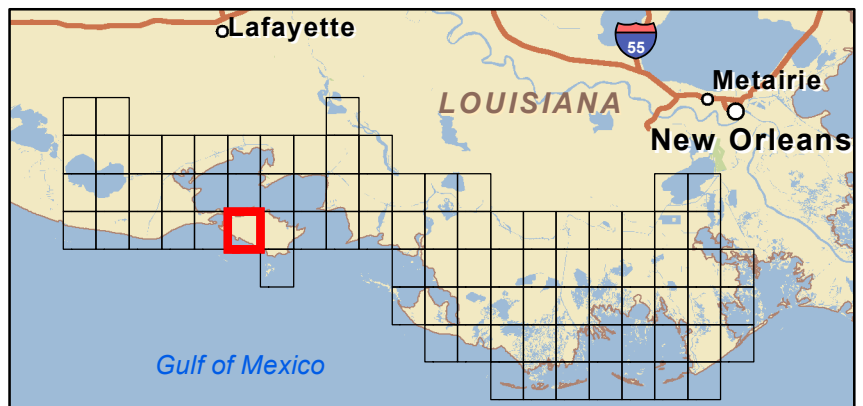
Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Small Bird Island in Platte Bayou		Parish:	Iberia
		Quad Name:	Bayou Lucien
Priority:	A	Quad Number:	2909125
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
Site Description: State Refuge part of Marsh Island Refuge		Latitude:	29° 37' 10.229" N
		Longitude:	91° 53' 44.794" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves <1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Bird nesting island - gulls, skimmers, and terns	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A2		Location Information	
Name: West Bayou Chene / Multiple Tidal Inlets	Parish:	Iberia	
	Quad Name:	Bayou Lucien	
Priority: A	Quad Number:	2909125	
Site Alias: N/A Site Description: State Refuge part of Marsh Island Refuge	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 36' 30.717" N	
	Longitude:	91° 56' 56.736" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish/LDEQ	
Submit Date: 2013.04.16		State Comments:	

Site Information: A3		Location Information	
Name: Large Bird Island in Platte Bayou		Parish:	Iberia
		Quad Name:	Bayou Lucien
Priority:	A	Quad Number:	2909125
Site Alias: N/A Site Description: State Refuge part of Marsh Island Refuge		Mile Marker:	
		Managed (Y/N)?:	Y - Wildlife Refuge
		Latitude:	29° 36' 24.084" N
		Longitude:	91° 53' 28.167" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves <1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Bird nesting island - gulls, skimmers, and terns	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A4		Location Information	
Name: Big Charles Bayou		Parish:	Iberia
		Quad Name:	Bayou Lucien
Priority:	A	Quad Number:	2909125
Site Alias: N/A Site Description: State Refuge part of Marsh Island Refuge		Mile Marker:	
		Managed (Y/N)?:	Y - Wildlife Refuge
		Latitude:	29° 35' 45.030" N
		Longitude:	91° 59' 08.389" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Wading bird nesting colony	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A5		Location Information	
Name: Sandy Beach		Parish:	Iberia
		Quad Name:	Bayou Lucien
Priority:	A	Quad Number:	2909125
Site Alias: None		Mile Marker:	
		Managed (Y/N)?:	Y - Wildlife Area
Site Description: Sensitive Habitat		Latitude:	29° 33' 04.755" N
		Longitude:	91° 59' 49.524" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A/5/2A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes / 5: Mixed sand and gravel beaches / 2A: Exposed Wave-cut Platform in clay			
		Wilson Plover	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A6		Location Information	
Name: Exposed shell reefs / Island at GOM		Parish:	Iberia
		Quad Name:	Bayou Lucien
Priority:	A	Quad Number:	2909125
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: State Refuge just south of Marsh Island Refuge shoreline		Latitude:	29° 31' 43.838" N
		Longitude:	91° 56' 46.135" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
Bird loafing area			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

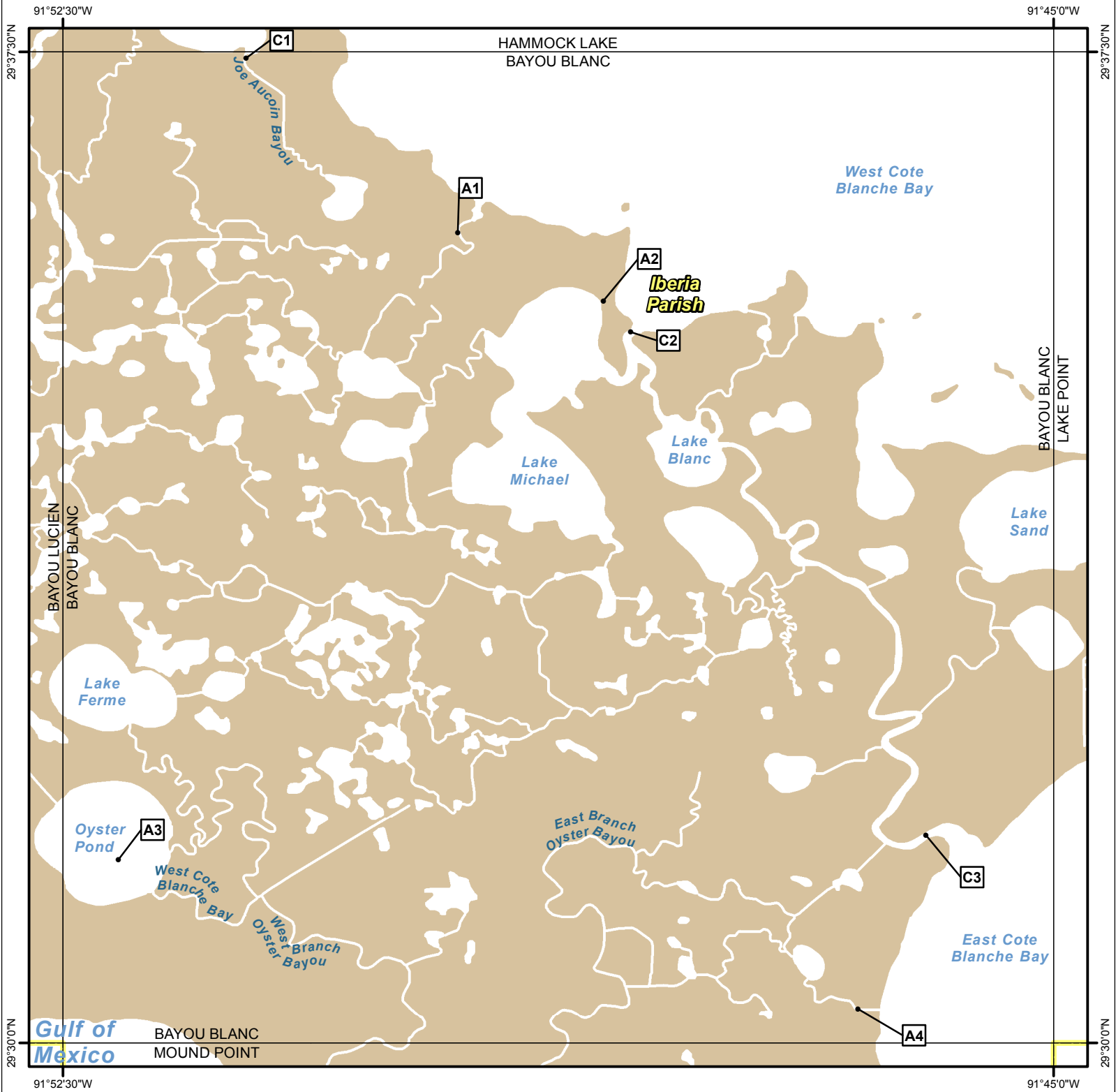
Site Information: C1		Location Information	
Name: Entrance to Bayou Michael from Vermilion Bay	Parish:	Iberia	
	Quad Name:	Bayou Lucien	
Priority: C	Quad Number:	2909125	
Site Alias: None Site Description: State Refuge part of Marsh Island Refuge	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 37' 19.180" N	
	Longitude:	91° 55' 28.007" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat / Marshland and fisheries	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C2		Location Information	
Name: Entrance to Big Charles Bayou from Vermilion Bay		Parish:	Iberia
		Quad Name:	Bayou Lucien
Priority: C		Quad Number:	2909125
Site Alias: None Site Description: State Refuge part of Marsh Island Refuge		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 36' 42.903" N
		Longitude:	91° 59' 10.002" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 1000-1500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat / Marshland and fisheries	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C3		Location Information	
Name: Entrance to Bayou Chene from Vermilion Bay	Parish:	Iberia	
	Quad Name:	Bayou Lucien	
Priority: C	Quad Number:	2909125	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 36' 36.487" N	
Site Description: State Refuge part of Marsh Island Refuge	Longitude:	91° 56' 22.591" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat / Marshland and fisheries	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C4		Location Information	
Name: Entrance to Little Charles Bayou from Vermilion Bay	Parish:	Iberia	
	Quad Name:	Bayou Lucien	
Priority: C	Quad Number:	2909125	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 36' 33.884" N	
Site Description: State Refuge part of Marsh Island Refuge	Longitude:	91° 58' 15.252" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat / Marshland and fisheries	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

BAYOU BLANC QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

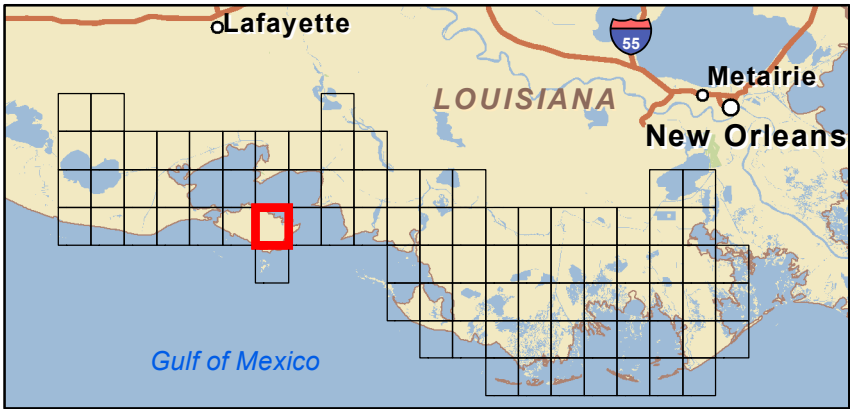
Kilometers

00.5123

Miles

00.5123

N



Site Information: A1		Location Information	
Name: Gordy Lake Bayou at West Cote Blanche Bay	Parish:	Iberia	
	Quad Name:	Bayou Blanc	
Priority: A	Quad Number:	2909126	
Site Alias: N/A Site Description: State Refuge part of Marsh Island Refuge	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 36' 08.094" N	
	Longitude:	91° 49' 30.566" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish/LDEQ	
Submit Date: 2013.04.16		State Comments:	

Site Information: A2		Location Information	
Name: Entrance into Tom Lake	Parish: Iberia	Quad Name: Bayou Blanc	
Priority: A	Quad Number: 2909126		
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?: Y - Wildlife Refuge		
	Latitude: 29° 35' 37.065" N		
Site Description: State Refuge part of Marsh Island Refuge	Longitude: 91° 48' 24.520" W		
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: Agencies concur with point	

Site Information: A3		Location Information	
Name: Loafing/Nesting Birds Island in Oyster Lake	Parish: Iberia	Quad Name: Bayou Blanc	
	Quad Number: 2909126		
Priority: A	Mile Marker:		
Site Alias: N/A	Managed (Y/N)?: Y - Wildlife Refuge		
	Latitude: 29° 31' 23.180" N		
	Longitude: 91° 52' 04.830" W		
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code:		Resources At Risk Comments: Seabird loafing area	
ESI Description			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

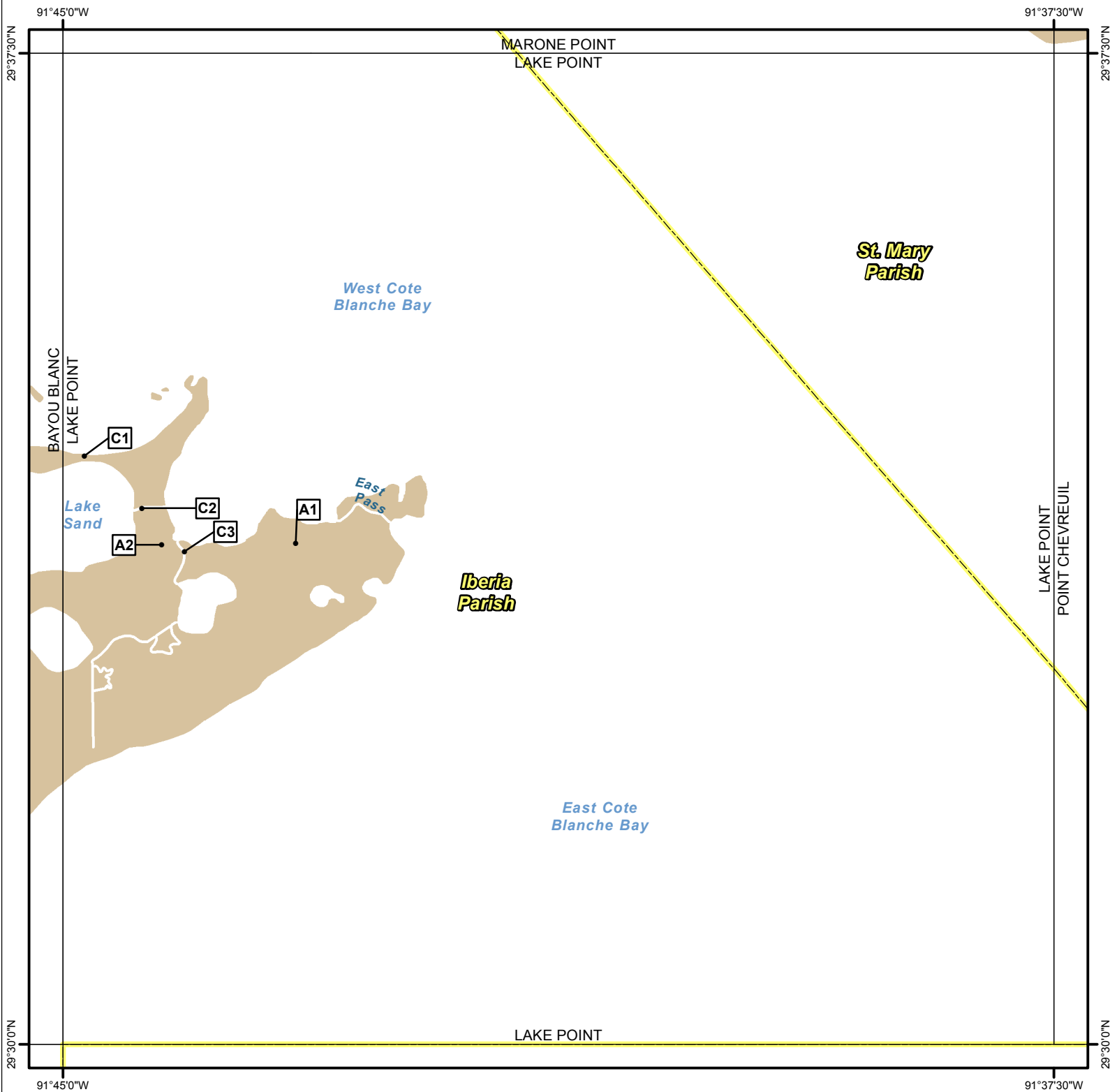
Site Information: A4		Location Information	
Name: Bayou south of Bayou Blanc at GOM		Parish:	Iberia
		Quad Name:	Bayou Blanc
Priority:	A	Quad Number:	2909126
Site Alias: N/A Site Description: State Refuge part of Marsh Island Refuge		Mile Marker:	
		Managed (Y/N)?:	Y - Wildlife Refuge
		Latitude:	29° 30' 15.450" N
		Longitude:	91° 46' 28.848" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A/2A		Resources At Risk Comments: Sensitive habitat - inlet to prime waterfowl habitat	
ESI Description 10A: Salt- and brackish-water marshes / 2A: Exposed Wave-cut Platform in clay			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: C1		Location Information	
Name: Joe Aucoin Bayou entrance at West Cote Blanche Bay (drilling channel)	Parish:	Iberia	
	Quad Name:	Bayou Blanc	
Priority: C	Quad Number:	2909126	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 37' 27.194" N	
Site Description: State Refuge part of Marsh Island Refuge	Longitude:	91° 51' 06.857" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat / Marshland and fisheries	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C2		Location Information	
Name: Worm Cove	Parish: Iberia	Quad Name: Bayou Blanc	
	Priority: C	Quad Number: 2909126	
Site Alias: None	Mile Marker:	Managed (Y/N)?: Y - Wildlife Refuge	
	Site Description: State Refuge part of Marsh Island Refuge	Latitude: 29° 35' 22.865" N	Longitude: 91° 48' 12.102" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat / Marshland and fisheries	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C3		Location Information	
Name: Bayou Blanc at GOM		Parish:	Iberia
		Quad Name:	Bayou Blanc
Priority: C		Quad Number:	2909126
Site Alias: None Site Description: State Refuge part of Marsh Island Refuge		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 31' 34.302" N
		Longitude:	91° 45' 57.974" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A/2A		Resources At Risk Comments: Sensitive habitat / Marshland and fisheries	
ESI Description 10A: Salt- and brackish-water marshes / 2A: Exposed Wave-cut Platform in clay			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

LAKE POINT QUAD



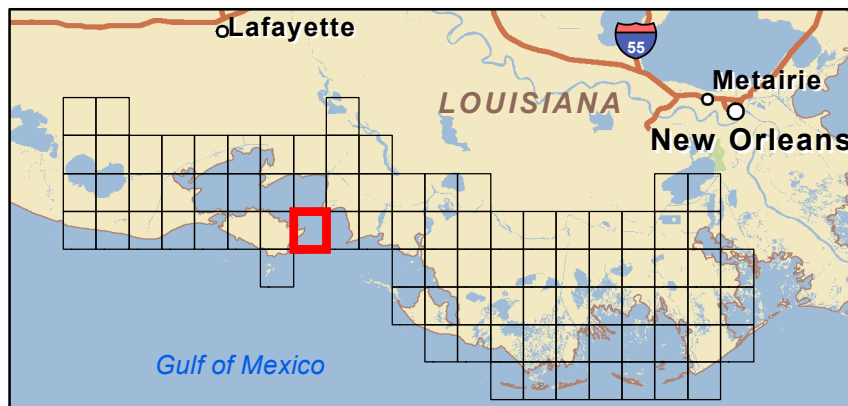
Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: East Location Canal	Parish: Iberia	Quad Name: Lake Point	
Priority: A	Quad Number: 2909127		
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?: Y - Wildlife Refuge		
	Latitude: 29° 33' 47.673" N		
Site Description: State Refuge part of Marsh Island Refuge	Longitude: 91° 43' 14.270" W		
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish/LDEQ	
Submit Date: 2013.04.16		State Comments:	

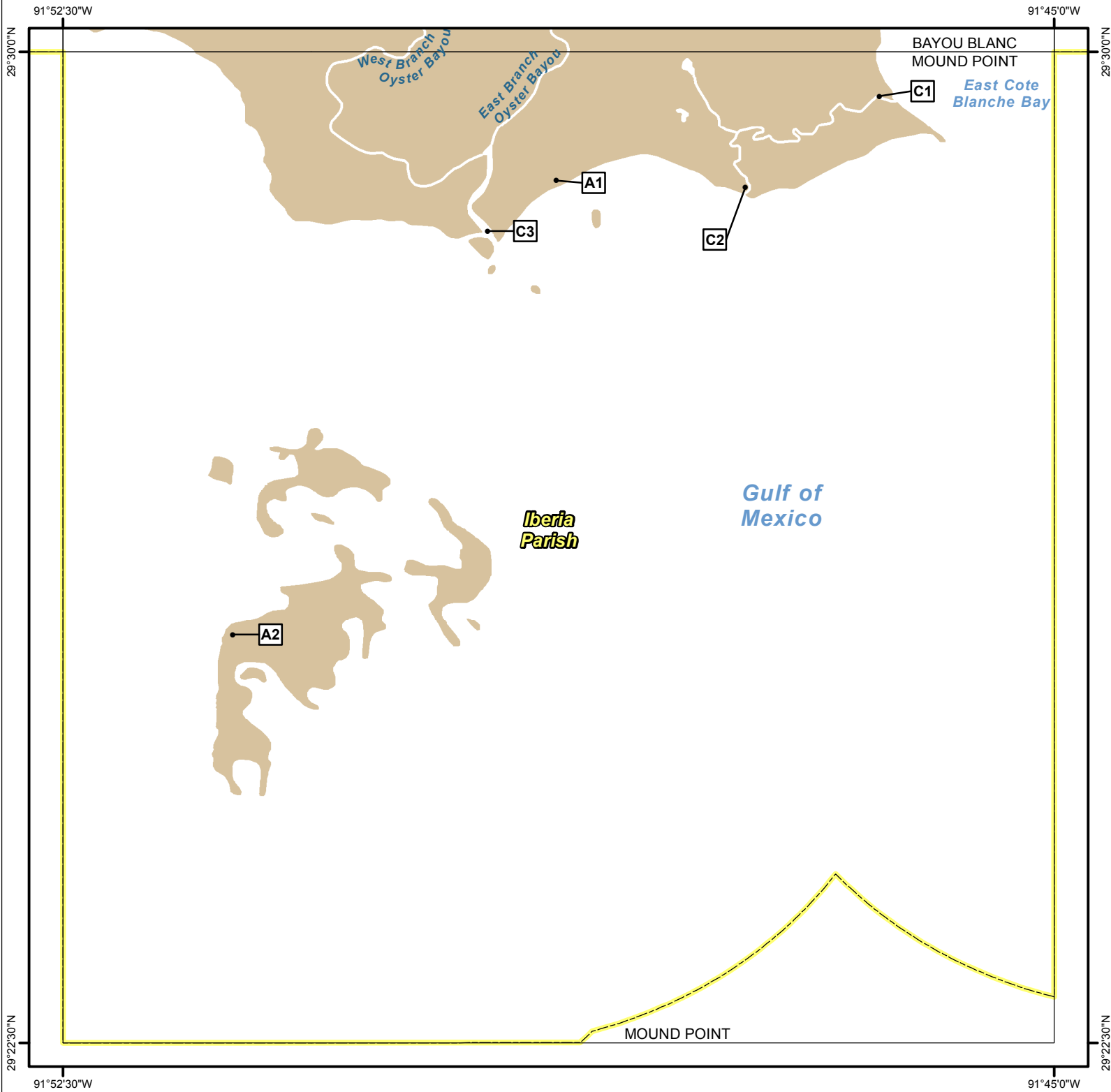
Site Information: A2		Location Information	
Name: Canal		Parish: Iberia	
		Quad Name: Lake Point	
Priority: A		Quad Number: 2909127	
Site Alias: N/A	Site Description: State Refuge part of Marsh Island Refuge	Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude: 29° 33' 46.820" N	
		Longitude: 91° 44' 15.257" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: C1		Location Information	
Name: Lake Sand Terraces		Parish:	Iberia
		Quad Name:	Lake Point
Priority: C		Quad Number:	2909127
Site Alias: None Site Description: State Refuge part of Marsh Island Refuge		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 34' 27.266" N
		Longitude:	91° 44' 50.312" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: 1000-1500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Tern, gull, and skimmer nesting area / Marshland and fisheries	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C2		Location Information	
Name: East Entrance to Lake Sand from East Cote Blanche Bay	Parish:	Iberia	
	Quad Name:	Lake Point	
Priority: C	Quad Number:	2909127	
Site Alias: None Site Description: State Refuge part of Marsh Island Refuge	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 34' 03.465" N	
	Longitude:	91° 44' 24.156" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat / Marshland and fisheries	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

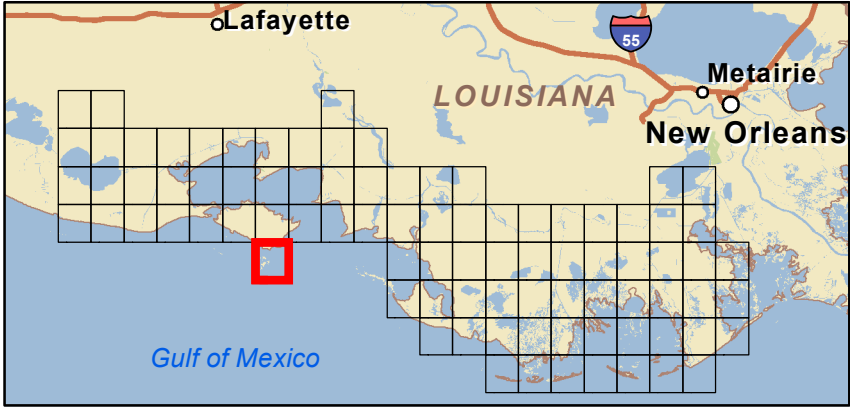
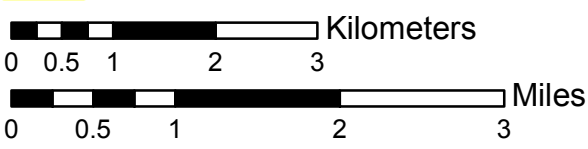
Site Information: C3		Location Information	
Name: Entrance to Hawkins Bayou from East Cote Blanche Bay		Parish:	Iberia
		Quad Name:	Lake Point
Priority: C		Quad Number:	2909127
Site Alias: None Site Description: State Refuge part of Marsh Island Refuge		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 33' 43.722" N
		Longitude:	91° 44' 04.766" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat / Marshland and fisheries	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

MOUND POINT QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: A1		Location Information	
Name: Skimmer Colony		Parish:	Iberia
		Quad Name:	Mound Point
Priority: A		Quad Number:	2909134
Site Alias: None		Mile Marker:	
		Managed (Y/N)?:	Y - Wildlife Area
Site Description: Sensitive Habitat		Latitude:	29° 29' 01.670" N
		Longitude:	91° 48' 46.090" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 6A/2A/7		Resources At Risk Comments: Skimmer Colony	
ESI Description 6A: Gravel beaches / 2A: Exposed Wave-cut Platform in clay / 7: Exposed tidal flats			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A2		Location Information	
Name: Shell Keys National Wildlife Refuge		Parish:	Iberia
		Quad Name:	Mound Point
Priority:	A	Quad Number:	2909134
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
Site Description: State Refuge part of National Wildlife Refuge		Latitude:	29° 25' 35.502" N
		Longitude:	91° 51' 12.870" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat - exposed reef system - large bird loafing area	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: USFWS		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: C1		Location Information	
Name: Entrance to South Point Inlet from GOM	Parish:	Iberia	
	Quad Name:	Mound Point	
Priority: C	Quad Number:	2909134	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 29' 39.932" N	
Site Description: State Refuge part of Marsh Island Refuge	Longitude:	91° 46' 19.282" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 6A/2A		Resources At Risk Comments:	
ESI Description 6A: Gravel beaches / 2A: Exposed Wave-cut Platform in clay			
		Sensitive habitat - inlet to prime waterfowl habitat / Marshland and fisheries	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C2		Location Information	
Name: Oyster Bayou (east branch) at GOM		Parish:	Iberia
		Quad Name:	Mound Point
Priority: C		Quad Number:	2909134
Site Alias: None Site Description: State Refuge part of Marsh Island Refuge		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 28' 58.546" N
		Longitude:	91° 47' 20.076" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A/2A		Resources At Risk Comments: Sensitive habitat - inlet to prime waterfowl habitat / Marshland and fisheries	
ESI Description 10A: Salt- and brackish-water marshes / 2A: Exposed Wave-cut Platform in clay			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C3		Location Information	
Name: Oyster Bayou at GOM		Parish:	Iberia
		Quad Name:	Mound Point
Priority: C		Quad Number:	2909134
Site Alias: None Site Description: State Refuge part of Marsh Island Refuge		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 28' 38.741" N
		Longitude:	91° 49' 17.215" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A/2A/7		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes / 2A: Exposed Wave-cut Platform in clay / 7: Exposed tidal flats			
		Sensitive habitat - inlet to prime waterfowl habitat / Marshland and fisheries	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Appendix A: GRP Content Contributors

Captain Peter Gautier	Federal On-Scene Coordinator
Captain David McClellan	Federal On-Scene Coordinator
Captain Jonathan Burton	Federal On-Scene Coordinator
Brian Wynn	Louisiana Oil Spill Coordinators Office
Karolien Debusschere	Louisiana Oil Spill Coordinators Office
David Gisclair	Louisiana Oil Spill Coordinators Office
Rebecca Broussard	Vermilion Parish OEP
Chris Boudreaux	Lafourche Parish OEP
Duval Arthur	Saint Mary Parish OEP
Earl Eues	Terrebonne Parish OEP
Prescott Marshall	Iberia Parish OEP
Todd Folse	Coastal Protection and Restoration Authority
Ann Howard	Coastal Protection and Restoration Authority
Chip McGimsey	State Historic Preservation Officer
Kyle Jellison	National Oceanic and Atmospheric Administration
Jeff Dauzat	Louisiana Department of Environmental Quality
Laura Carver	Louisiana Department of Wildlife and Fisheries
Nicholas LaCroix	Louisiana Department of Natural Resources
LCDR Keith Smith	U.S. Coast Guard
LCDR Chance Greene	U.S. Coast Guard
LCDR Lushan Hannah	U.S. Coast Guard
Brian Black	U.S. Coast Guard
Tanner Kneese	The Response Group
Fernando Terceros	The Response Group
Sarah Clavo	The Response Group
Terry Posey	Oil Mop Environmental Services
Ronald Johnson	Oil Mop Environmental Services
Cliff Collins	Oil Mop Environmental Services

Appendix B: GRP Comments/Corrections/Suggestions

If you have any questions regarding this document or find any errors, please notify the following agency:

U.S. Coast Guard

MSU Morgan City

Phone number: (985) 380-5330

Internet/E-mail Address: brian.k.black@uscg.mil

Address: Commander
U.S. Coast Guard
800 David Drive
Morgan City, LA 70380
Attn: Brian Black

Comments/Corrections/Suggestions Form

Directions: Fill in your name, address, agency, and phone number. Fill in the blanks regarding the location of information in the plan being commented on. Make Comments in space provided. Add extra sheets as necessary.

Name:	_____	Title:	_____	Agency:	_____
Address:	_____				
City:	_____	State/Province:	___	Zip/Postal Code:	_____
Phone:	(____)	E-Mail:	_____		

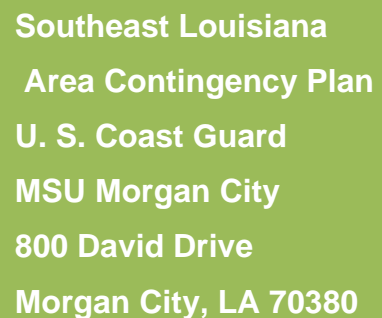
Site:	_____	Page:	_____
Location on page (Chapter, section, paragraph) (e.g. 2.1, paragraph 3):			

Comments:	_____

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Geographic Response Plan

Lafourche Parish





Lafourche Parish GRP Signature Page

A blue ink signature of David McClellan, written in a cursive style, positioned above a horizontal line.

McClellan David
Captain, US Coast Guard
Commander, MSU Morgan City
Federal On-Scene Coordinator, Morgan City

A blue ink signature of Brian Wynne, written in a cursive style, positioned above a horizontal line.

Brian Wynne Acting Louisiana Oil Spill Coordinator

A blue ink signature of Charlotte Randolph, written in a cursive style, positioned above a horizontal line.

Charlotte Randolph
President, Lafourche Parish

Record of Changes

Date	Change Number	Summary of Changes	Initials of person making changes

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Lafourche Parish GRP Signature Page	2
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Lafourche Parish Geographic Response Plan

Introduction

This Geographic Response Plan (GRP) is an annex to the Southeast Louisiana Area Contingency Plan (SOUTHEAST LOUISIANA ACP) and a key element of both facility and vessel contingency plans. This GRP has two main functions:

From a planning perspective, the GRP provides a description of sensitive biological, cultural, and economic resources that must be addressed to be in compliance with:

- The National Oil and Hazardous Substance Pollution Contingency Plan (NCP, 40 CFR Part 300.210(3)(i)). Area Contingency Plans are required to describe areas of special economic and environmental importance that could be impacted during an oil spill.
- The National Historic Preservation Act of 1966 contains applicable, relevant and appropriate requirements. The GRPs also address sensitive historic and prehistoric resources.

From an operational perspective, the GRP guides responders in the first 24-48 hours of an oil spill by:

- Providing a prioritized list of tactical response strategies to be implemented during the early hours of an oil spill (usually before the formation of the Unified Command);
- Providing detailed information for booming strategies that could be utilized to minimize impacts to predetermined sensitive resources.

Once the Unified Command is formed, additional operational strategies and tactics will be relayed to the field in the form of the ICS-204 work assignment sheets.

Because the GRP is the primary tool used during an initial phase of the response and fairly broad in their scope, they are not intended to minimize impacts to all possible sensitive areas that could be affected by an oil spill. Likewise, the GRPs are not intended to be an exhaustive list of all the tactical strategies that could, or should, be implemented during a spill.

Scope

This Geographic Response Plan (GRP) is intended to help the first responders of an oil discharge or hazardous substance release avoiding the initial confusion that generally accompanies any incident. This document serves as the federal and state on-scene-coordinators “guidance” during an incident in the area covered by this GRP (see Section 2 for area covered). As such it has been approved by the U.S. Coast Guard MSU Morgan City, the Louisiana Oil Spill Coordinator’s Office, and Lafourche Parish. Changes to this document are expected as testing is conducted through drills, site visits, and actual use in an incident. To submit comments, corrections, or suggestions please refer to Appendix B.

The scope of this GRP is to identify sensitive sites to be considered for protection in the first 24 to 48 hours of an incident and the generic response strategy for this site considering unique characteristics, noted hydrology and climatic considerations. This index is not all encompassing as sites not identified in this index may need to be evaluated for protection as an incident progresses.

GRPs only address protection of sensitive public resources. It is the responsibility of private resource owners and/or potentially liable parties to address protection of private resources (such as commercial marina and private water intakes).

Development

This Index has been developed for the Coastal Zone, as defined in the National Contingency Plan (40 CFR Part 300) for Lafourche Parish. It is prepared through the efforts and cooperation of Louisiana State Trustee Agencies, Parish Representatives, and Federal Trustee Agencies, other federal and state agencies, response organizations, and local emergency responders. This Index was developed through workshops involving federal, state, and local stakeholders. Workshop participants identified resources which require protection and developed operational strategies.

Following the workshops, the data gathered was processed and reproduced in the form of maps and matrices which appear in Chapter 3. The maps were generated using ArcGIS, and the tables were created using Microsoft Access.

The first goal of a GRP is to identify resources needing protection; response resources needed; tribal and local response community contacts; and local conditions that may affect response strategies.

Secondly, response strategies were developed based on the sensitive resources noted hydrology and climatic considerations. Individual response strategies identify the appropriate boom implementation.

Draft maps and matrices were sent out for review and consideration of strategy viability.

Verification at local, state, and federal levels was conducted and changes proposed by the participants were included in a semi-final draft, which was offered for final review.

Finally, the final GRP was compiled along with site description, reference maps, and information to support logistical needs.

Guiding Principles of the GRP

Safety and health of the responders always takes precedence over the protection of sensitive environmental resources.

Source control and containment are always a **HIGER** priority over GRP strategy deployments.

The protection strategies in the GRPs have been designed for the use with persistent oils and may not be suitable for other petroleum or hazardous substances.

Environmental conditions (winds, currents, and tides), together with the physical limitations of existing spill response technology, may preclude the effective protection of some areas.

Once a coordinated response has been established during an oil spill incident, booming strategy selection and prioritization are refined and supplemented based on real-time assessments. The UC has the authority to supersede the strategies proposed in the GRPs.

Response personnel may find it necessary to deviate from the exact details provided for deploying a particular strategy. An onsite evaluation of actual conditions is often needed to determine whether a strategy is safe to deploy, whether it will be effective under existing environmental conditions, or effective for the particular type of oil involved. Therefore, field personnel should use their best judgment to modify existing strategies based on real-time conditions and notify command accordingly. Field personnel are also encouraged to notify the command post regarding opportunities for deployment additional strategies that might be used to take advantage of incident-specific conditions.

The GRPs Include the Following Types of Response Strategies:

Collection Booming with On-Water Recovery: Deploying various types of boom to collect oil for mechanical removal using sorbent materials, vacuum trucks, or near shore skimming devices;

Exclusion Booming: Deploying various types of boom to reduce oiling in sensitive areas;

Deflection Booming: Deploying various types of boom to divert oil away from a sensitive area and/or divert oil toward a collection point.

GRPs Do Not Include:

In-Situ Burning: Burning oil on the water; usually requires containment by fire-resistant boom. Chapter 9000, Appendix C for additional policy on in-situ burning use;

Dispersants: Applying chemical agents, usually by aircraft, to aid in breaking up surface slicks and dispersing oil within the water column. See Chapter 9000, Appendix D for policy on dispersant use;

Shoreline Cleanup: Physical removal or chemical treatment of stranded oil. See Chapter 9000, Appendix G for the NOAA Shoreline Countermeasure Manual for Tropical Coastal Environments and Appendix F Oil Spill Best Management Practices for guidance on shoreline cleanup;

Open-Water Mechanical Recovery: Physical removal of oil using boats and/or vessels specifically outfitted with collection and separation equipment.

No Action: Appropriate when weather, sea, or other conditions make deployments unsafe and/or infeasible and when response actions or site access will cause further environmental damage (e.g., wetlands)

Sensitive Resources Addressed by GRPs

The NCP, 40 CFR Part 300.120(3)(i) requires that Area Committees identify and prioritize sensitive areas requiring protection. In the SOUTHEAST LOUISIANA ACP, sensitive areas are broken into three main categories described below.

Environmentally Sensitive Resources

Key natural resource areas are identified using a wide range of data provided by resource trustees, tribes, plan holders, spill response organizations, contingency plan holders, and other interested stakeholders during the process of GRP development and review. The Environmental Sensitivity Index (ESI) maps developed by NOAA are one example of the type of natural resource information available (<http://response.restoration.noaa.gov>). When appropriate, tactical response strategies are designed for implementation during the early hours of an oil spill to reduce impacts to those areas, and trajectory models or other assessment techniques are used to establish initial response priorities.

Historically or Culturally Sensitive Resources

Information on sensitive historic and cultural sites is coordinated through contact with the various tribal governments, State Historic Preservation Office (SHPO), and the United

States Department of the Interior may assist as needed. Due to the sensitive nature of this information, the specifics regarding the location and nature of such sites are not included in the GRP documents. However, in order to ensure that tactical response strategies do not inadvertently harm historical and culturally sensitive sites, historic preservation specialists are consulted to review the GRP documents prior to finalization. The Louisiana SHPO can be contacted at:

Physical Address:
State Historic Preservation Office
Division of Archaeology
Capital Annex Building
1051 North Third Street

Mailing Address:
P.O. Box 44247
Baton Rouge LA, 70804
Phone: (225) 342-8160 (general office)
(225) 219-4598 (Division of Archaeology office)
Fax: (225) 342-4480

Socio-Economically Sensitive Resources

Economically sensitive areas are facilities or locations that rely on a body of water to be economically viable and that could be severely impacted by an oil spill. Economically sensitive areas are broken down into three separate categories: Critical infrastructure, water dependent commercial and recreational areas. Information on economic resources will be gathered for inclusion as an appendix to the GRPs.

Evaluation Criteria for GRPs

Specific strategies for response to spills in the sensitive areas are detailed in the GRPs. Below is a list of some of the biological, cultural, and booming criteria used to determine whether it is appropriate to develop and maintain GRP strategies at specific locations. These criteria are not intended to be exhaustive, or ranked in order of priority, they are meant to help frame the evaluation of GRP strategies.

Key Criteria for Biological Sites, Species, and Habitats of Concern

What is the expected recovery time for habitats of fish and wildlife resources?
What is the residence time of the oil?

Substrate-

- What is the exposure risk?
- What is the likelihood that a habitat or species will be exposed to direct contact with surface oil or to dispersed/dissolved oil in the water column?
- Given the substrate, is clean-up feasible?

Habitat quantity, quality, and pattern-

- Is the impacted habitat considered scarce at local, regional, or statewide scales?
- Is the size of the impacted habitat significant compared to other sites in the region?
- Is the species diversity or endemism high? Is this true year-round or is it seasonal?
- Is abundance of fish and/or wildlife high? Is this true year-round or is it seasonal?
- What life stages of organisms are present?
- Is the habitat important to threatened or endangered species?
- What is the status of the habitat's integrity (i.e., is the area undeveloped or highly altered?)
- Does the habitat have a special designation or status (i.e., Marine Protected Area, biological research area, restoration site, etc.)?
- Are the habitat and/or its associated fish and wildlife resources especially susceptible to injury by oil?

Key Criteria for Archeological and Cultural Sites of Concern

Deployment- Does the act of deploying the GRP strategy threaten the archeological site (anchoring the boom, parking vehicles, etc.)

Purpose- Will implementing the GRP strategy type (collection, diversion, deflection) negatively impact the site?

Review- If either of the above is possible, then a review of the site records is necessary to determine the exact location and sensitivity of the site. If the site records are old or insufficient, then a field visit is necessary.

Significant developments- Are there significant developments that may make any concern about the impacts irrelevant (housing developments etc.)?

Additional criteria for archaeological sites without existing GRP strategies

- Impacts- Does the site extend below the high tide line?
- Vulnerability- Will it be damaged or destroyed if oil were to hit the area (or by the placement of response equipment in the area, e.g., vacuum trucks, etc.)?
- Integrity- Has the site been disturbed yet, or is it still intact?
- Historic Importance- Is the site nominated for, or already on, the National Register of Historic Places or the State equivalent?
- Tribal Importance- Does the site hold special tribal importance?
- Parish Importance- Does the site hold special Parish importance?
- Feasibility- Is booming the site feasible?

Key Criteria for Socio-Economic Sites of Concern

Strictly economic resources are designated as the third priority for dedication of oil spill response resources, following human health and safety and environmental resources. The designation of economic resources is highly dependent upon the priorities of the local government. Each GRP contains detailed information of economic sites in each Parish or Geographical Response Area. This information includes geographic locations of resources, a brief description of the resource at risk, contact names and numbers, and the priority response ranking.

Key Criteria for the Use of Boom

Effectiveness- Is booming the most effective strategy for reducing oil spill impacts? Would other alternatives such as a phone call to an operator, shutting off a water intake, or closing a tidal gate be as effective?

Safety- Determine if safety of human responder will be put at risk for limited likelihood of strategy success.

Strategy- Determine what type of booming strategy would be the most effective at reducing oil impacts to the resource under prevailing conditions (collection, deflection, or exclusion).

Evaluation- Evaluate the site for advantageous characteristics based on:

- Anchoring substrate. Does the substrate allow responders to easily anchor the boom?
- Accessibility. Can the site be easily accessed by vessel or vehicles?
- Time to arrive on scene. How long will it take to get to the site?
- Potential for oiling. Is the site located near shipping activity or fueling operations?
- Beach substrate. Used Environmental Sensitivity Index (ESI) or Shore-Zone classification to determine vulnerability to oiling and likely oil longevity based on the shoreline type.
- Type and quantity of boom. How many sections of boom and what size anchors will be required for deployment? What is the anchoring depth? What type of boom tending will be required? Will this tending be complicated by the amount of time it takes to arrive at the site or the difficulty of access? Is the amount of boom required reasonable (< 1000 ft)?
- Prevailing weather- especially wind and waves. Is a booming strategy realistic for prevailing conditions?
- Tidal influence. At extreme lows will there be nothing but mud flats (very difficult to tend boom when it is stuck in the mud) or at extreme highs will the entire face of a coastal marsh be underwater (thus exposing the entire perimeter to oil)?
- Influence of currents. What velocities can be expected?
- Feasibility. Depends on: Boom size, boom length, the number and size of anchors, the capability of the recruited workboats (to tow boom, set and recover anchors, shelter boat crews, carry boom and associated equipment), the experience of the boat crew, and the effectiveness of the anchoring system (both on shore and in water).

Prioritization

Through the priority evaluation process, an area is broken down by type (human health and safety, environmental, economic and cultural) and sensitivity (high, medium, low). This evaluation process focuses on the sensitivities of areas and not jurisdictional boundaries. Once all areas have been evaluated and broken down, three levels of priority are generally all that is needed for pre-spill planning:

A – Protect First

B – Protect After A Areas

C – Protect After B Areas

The following prioritizations were determined by the Geographic Response Plan subcommittee:

Priority A

- Public drinking water intakes
- Industrial water intakes with public health and safety impacts (e.g. public utility intake, supported by state managed early warning network on MISS RIVER)
- Tidal Inlets – Primary Tidal Inlets that are protectable
- Secondary inlets inside bays that connect to extensive sensitive areas
- Breaches, wash-overs and other low areas where oil can enter sensitive habitats
- Exceptional/Highly sensitive wetlands with high biodiversity site (e.g. NWR, State refuges)
 - Important Bird Areas
 - Bird nesting islands (e.g. Raccoon Island, Queen Bess Island, Brush Island)
 - Other bird nesting concentrations including T&E species
 - Seasonal bird concentration areas onshore (e.g. South Pass)
 - Freshwater Diversion (Manmade and Natural)

Priority B

- Exceptional Oyster beds in the intertidal
- Seagrass Beds in less than 1 meter of water
- High use recreational sites
- Important Industrial Areas (e.g. fishing ports, marinas, industrial corridors)
- Other water intakes not specified in Priority A
- Cultural/Historical sites of concern (e.g. contact SHPO/Tribes)

Priority C

- Small tidal channels and canal openings
- Sheltered tidal flats
- Seagrass beds in greater than 1 meter of water
- Aquaculture sites and oyster lease areas
- Wetland restoration areas
- Other industrial areas
- Areas identified by local authorities not previously noted in Priority A or B

The following areas were not included due to the initial protection difficulty:

- Open gulf beaches
- Exposed wetland shorelines (exposed to waves and currents) (as described in Appendix G)
- Exposed rip-rap

Strategy Selection

Booming strategy recommendations were developed using local knowledge, scientific data, and known operational uses and limitation of common oil spill response equipment. Utilizing publications, such as the Exxon Mobil Oil Spill Response Manual and the National Oceanic Atmospheric Administration's Characteristic Coastal Habitats Choosing Spill Response Alternatives) a quick reference job-aid was developed to assist with the selection of an appropriate site given the noted hydrology and climatic considerations. This process applies a consistent and standard analysis of each site. All water body openings, cuts, and lengths between two points of land greater than one thousand feet (1,000 ft) received a strategy of Deferred Action due to limited resources available during initial response. All sites related to infrastructure or private resources received a strategy of Notification to Site Manager. However, these sites are considered sensitive and should be given due consideration for more defensive response actions by the Incident Command.

GRP Strategy Selection Job-Aid

Water Body Type	Current/Wave Action	Shoreline	Strategy
Lake or Pond		ESI 1-6	Containment booming/collection point
		ESI 7-10	Exclusion booming
Rivers or Large Streams 1.6 feet (0.5) deep	Currents <1 knot	ESI 1-6	Containment booming/collection point
		ESI 7-10	Exclusion booming
	Currents 1-2 knots	ESI 1-6	Diversion booming to collection point
		ESI 7-10	Deflection booming
	Currents >2 knots	ESI 1-6	Multi-layer diversion booming to collection point
		ESI 7-10	Multi-layer deflection booming
Small streams <33 ft wide (10m) and 1.6 ft (0.5 m) deep	Currents <1 knot	ESI 1-6	Containment booming/collection point
		ESI 7-10	Exclusion booming
	Currents 1-2 knots	ESI 1-6	Diversion booming to collection point
		ESI 7-10	Deflection booming
	Currents >2 knots	ESI 1-6	Multi-layer diversion booming to collection point
		ESI 7-10	Multi-layer deflection booming
Shallow Rivers or streams	Currents 0-2 knots	ESI 1-6	Containment booming/collection point
		ESI 7-10	Diversion booming to collection point
Straight Coastline with Sensitive Areas	Breaking waves <1.5 ft (0.5m)	ESI 1-10	Diversion boom up current of sensitive area
	Breaking waves > 1.5 ft		Deferred Action
Entrance to Bays, Harbors, Lagoons, and Estuaries	Breaking waves <1.5 ft (0.5m) and currents < 1 kt (0.5 m/s)	ESI 1-10	Exclusion booming
	Breaking waves <1.5 ft (0.5m) and currents >1 kt (0.5 m/s)	ESI 1-6	Diversion booming to collection point
		ESI 7-10	Deflection booming
	Breaking waves >1.5 ft (0.5m)	ESI 1-10	Deferred Action
Narrow Channel/ Narrow Tidal Channel	Current <1 kt (0.5 m/s)	ESI 1-10	Exclusion Booming
	Current >1 kt (0.5 m/s)	ESI 1-6	Diversion booming with collection point
		ESI 7-10	Deflection booming
Open Water	Breaking Waves < 1.5 ft	N/A	Exclusion Booming
	Breaking waves >1.5 ft		Deferred Action

NOTE: All openings, cuts, and lengths between two points of land greater than one thousand feet (1,000 ft) will receive a strategy of **Deferred Action** due to limited resources for initial response.

All sites related to infrastructure or private resources will receive a strategy of **Notification to Site Manager**.

Southeast Louisiana Area Contingency Plan

Sensitive Site Index

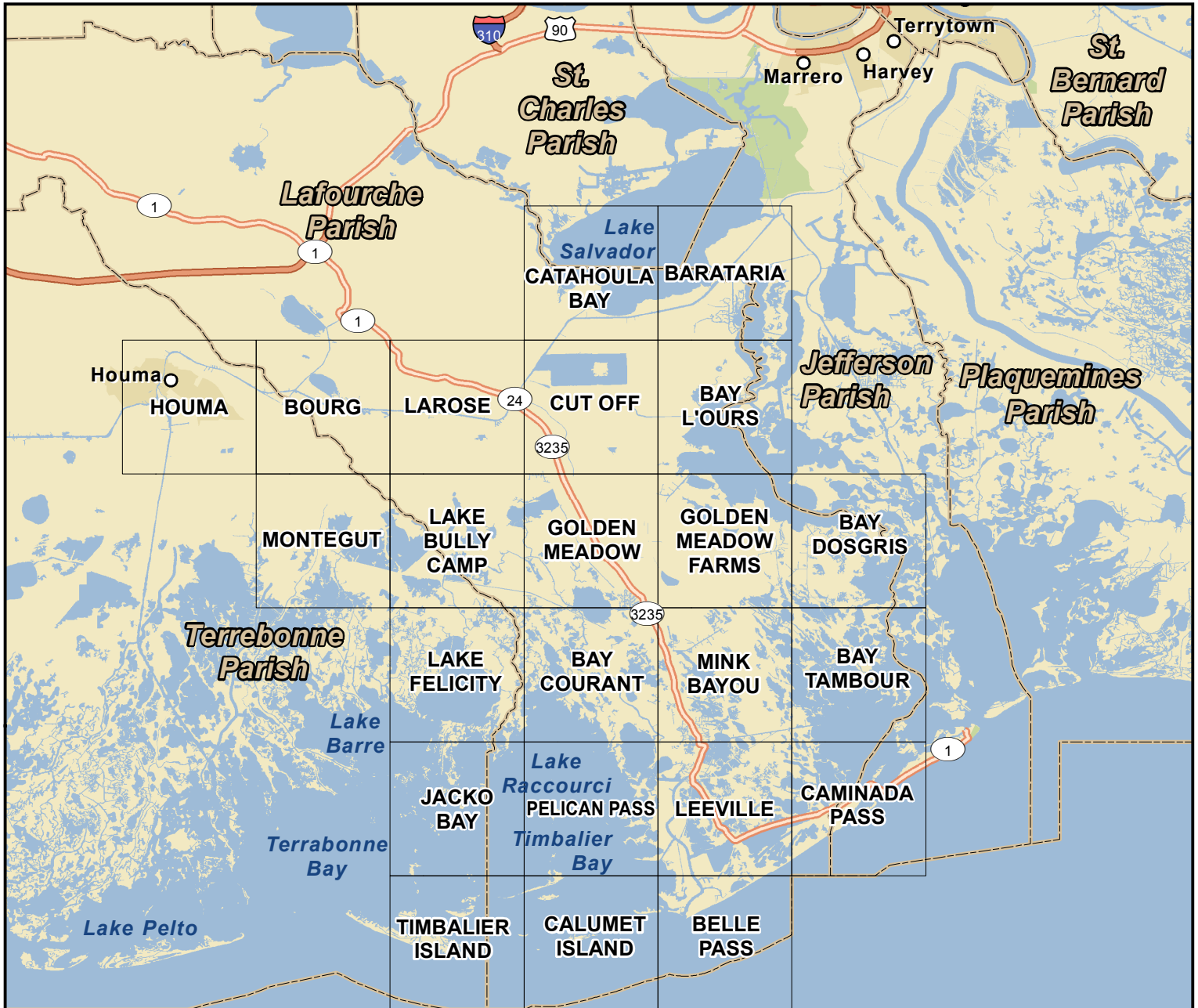
The following compilation of sensitive sites is a result of the hard work of Morgan City Area Stakeholders. The sites contained within this report will play a significant role in the development of the Geographic Response Plans, a geographic based response plan to oil and hazardous material releases.

Any modifications or additions to this set of data is welcomed and encouraged. Please contact the USCG MSU Morgan City Contingency Planning Specialist to make any submissions.



Southeast Louisiana ACP

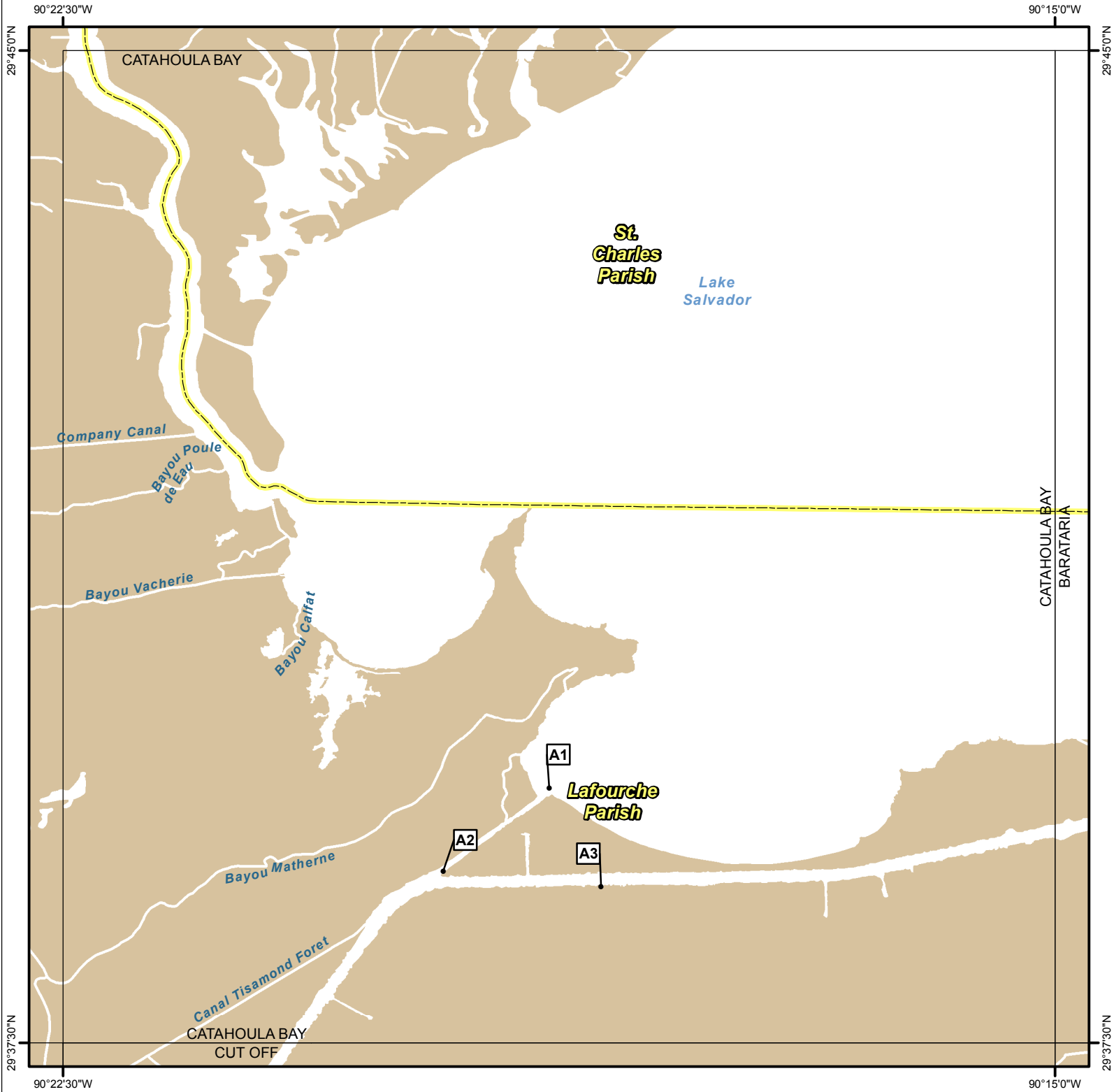
Lafourche Parish Index Map



Gulf
of
Mexico

0 5 10 20
Miles

CATAHOULA BAY QUAD

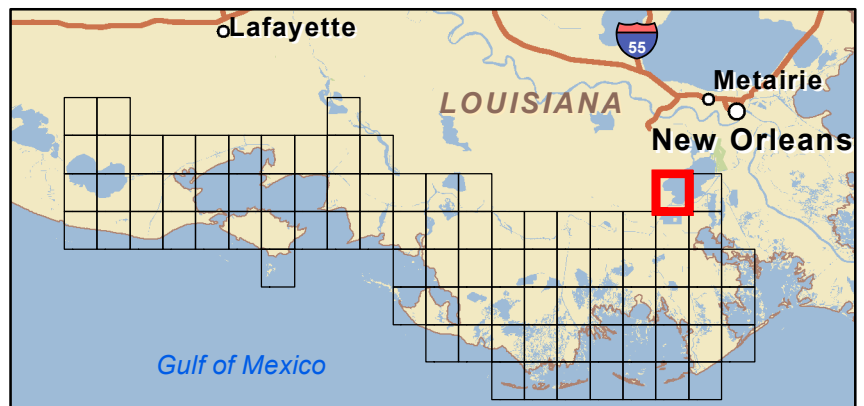


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles

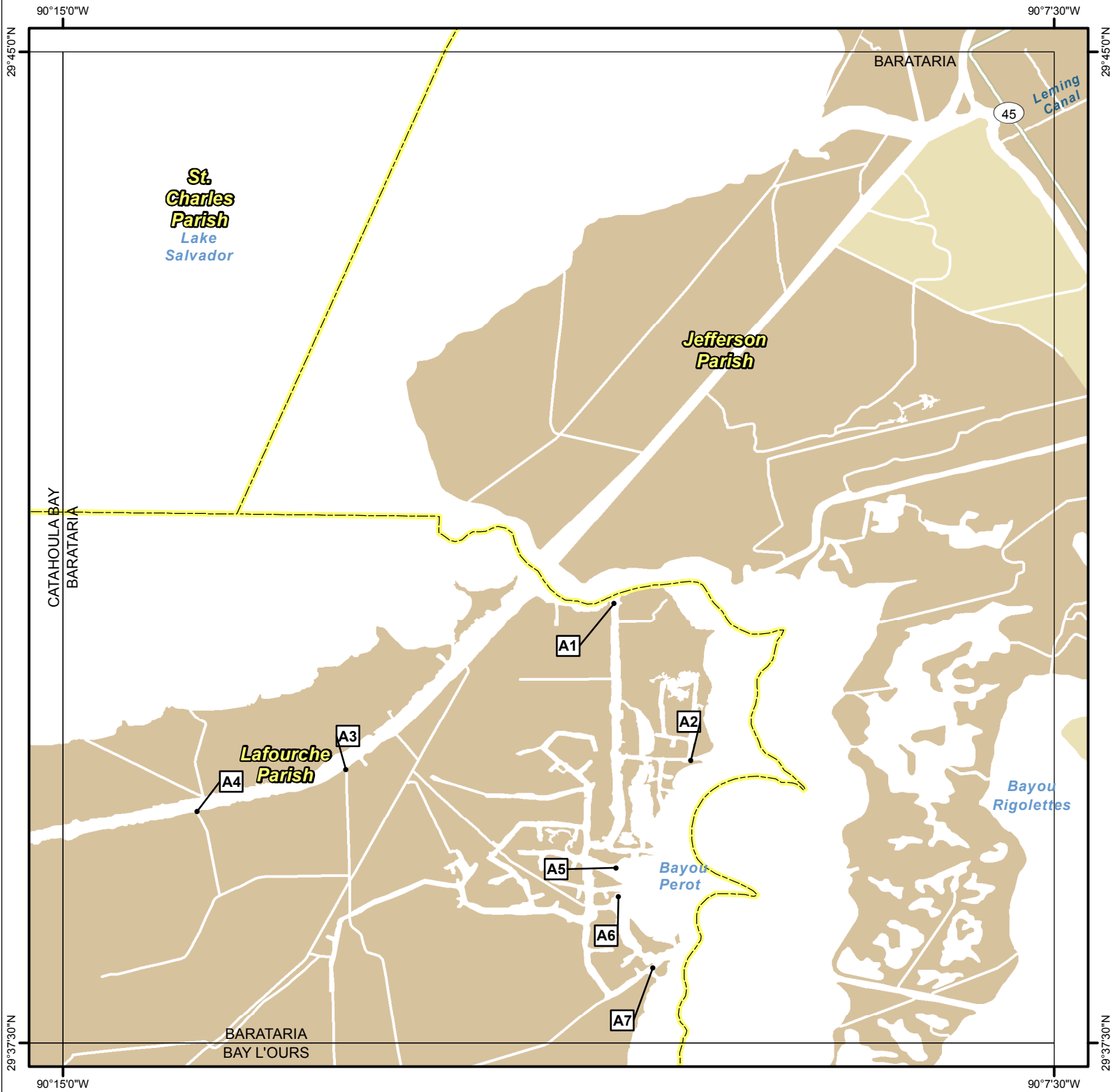


Site Information: A1		Location Information	
Name: Inlet from Catahoula Bay to Intracoastal Waterway		Parish:	Lafourche
		Quad Name:	Catahoula Bay
Priority: A		Quad Number:	2909022
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Inlet		Latitude:	29° 39' 25.640" N
		Longitude:	90° 18' 49.491" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
		Marsh	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Eric Benoit		State Submitter: Lafourche Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State questions point	

Site Information: A2		Location Information	
Name: Inlet from Intracoastal Waterway to Catahoula Bay	Parish:	Lafourche	
	Quad Name:	Catahoula Bay	
Priority: A	Quad Number:	2909022	
Site Alias: None	Mile Marker:	29.3	
	Managed (Y/N)?:	N	
	Latitude:	29° 38' 47.792" N	
Site Description: Inlet	Longitude:	90° 19' 37.603" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
		Marsh	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Eric Benoit		State Submitter: Lafourche Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State questions point	

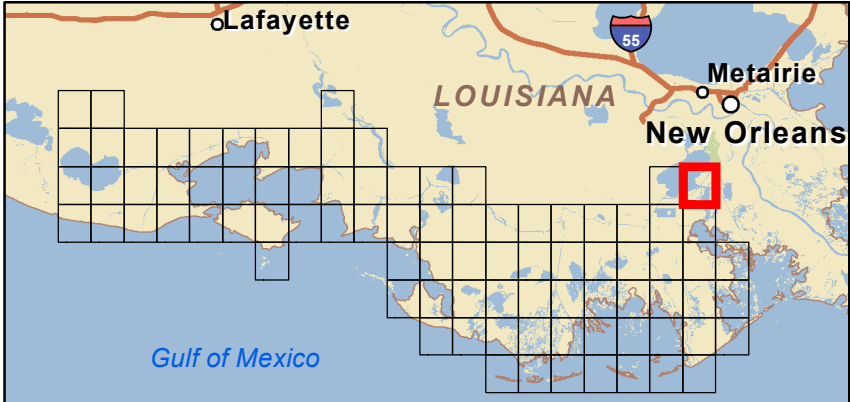
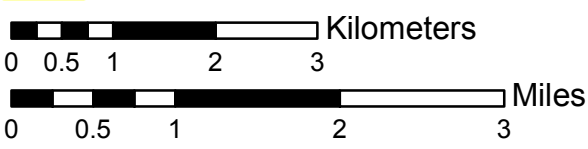
Site Information: A3		Location Information	
Name: Canal on Intracoastal Waterway	Parish:	Lafourche	
	Quad Name:	Catahoula Bay	
Priority: A	Quad Number:	2909022	
Site Alias: N/A	Mile Marker:	28.1	
	Managed (Y/N)?:	N	
Site Description: Sensitive Habitat	Latitude:	29° 38' 40.734" N	
	Longitude:	90° 18' 25.974" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

BARATARIA QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: A1		Location Information	
Name: Canal at Bayou Perot		Parish:	Lafourche
		Quad Name:	Barataria
Priority: A		Quad Number:	2909023
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Waterway Cut		Latitude:	29° 40' 49.357" N
		Longitude:	90° 10' 49.796" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marsh	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Eric Benoit		State Submitter: DEQ/Lafourche Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: A2		Location Information	
Name: Multiple Canals off of Bayou Perot	Parish:	Lafourche	
	Quad Name:	Barataria	
Priority: A	Quad Number:	2909023	
Site Alias: N/A	Mile Marker:	26.6	
	Managed (Y/N)?:	N	
Site Description: Sensitive Habitat	Latitude:	29° 39' 38.234" N	
	Longitude:	90° 10' 14.946" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Canal off Intracoastal Waterway (north)	Parish:	Lafourche	
	Quad Name:	Barataria	
Priority: A	Quad Number:	2909023	
Site Alias: N/A	Mile Marker:	26.6	
	Managed (Y/N)?:	N	
	Latitude:	29° 39' 34.238" N	
Site Description: Sensitive Habitat	Longitude:	90° 12' 51.656" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

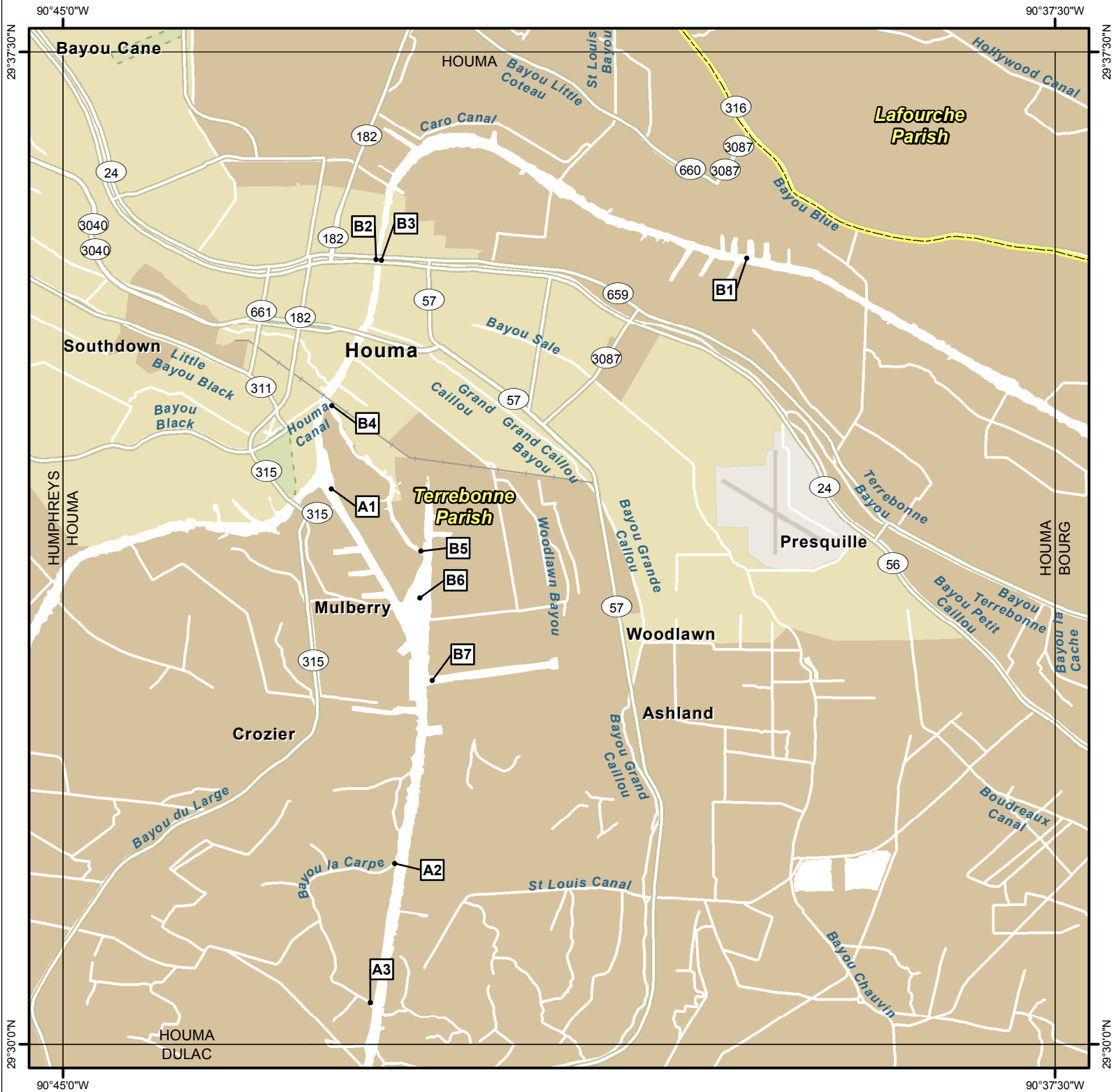
Site Information: A4		Location Information	
Name: Canal off Intracoastal Waterway (south)	Parish:	Lafourche	
	Quad Name:	Barataria	
Priority: A	Quad Number:	2909023	
Site Alias: N/A	Mile Marker:	24.3	
	Managed (Y/N)?:	N	
	Latitude:	29° 39' 15.107" N	
Site Description: Sensitive Habitat	Longitude:	90° 13' 59.108" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A5		Location Information	
Name: Multiple Canals off Bayou Perot (north)	Parish:	Lafourche	
	Quad Name:	Barataria	
Priority: A	Quad Number:	2909023	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 38' 49.408" N	
Site Description: Sensitive Habitat	Longitude:	90° 10' 48.868" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments:	

Site Information: A6		Location Information	
Name: Multiple Canals off Bayou Perot (south)	Parish:	Lafourche	
	Quad Name:	Barataria	
Priority: A	Quad Number:	2909023	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 38' 36.459" N	
Site Description: Sensitive Habitat	Longitude:	90° 10' 47.775" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments:	

Site Information: A7		Location Information	
Name: Oilfield Canal		Parish:	Lafourche
		Quad Name:	Barataria
Priority:	A	Quad Number:	2909023
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 38' 03.950" N
		Longitude:	90° 10' 32.142" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

HOUMA QUAD



Legend

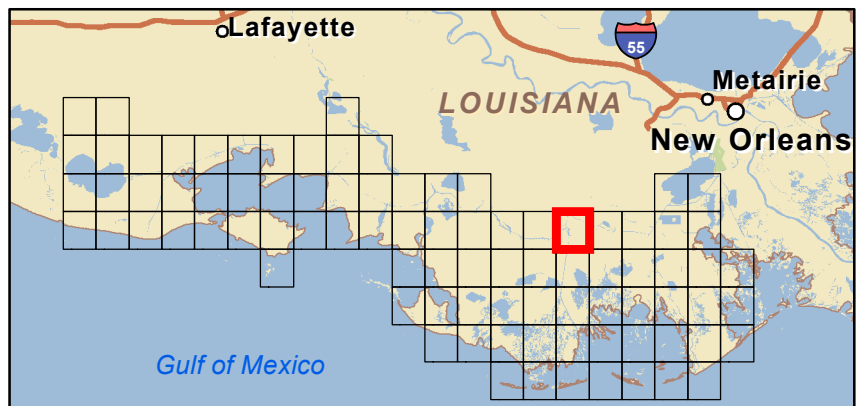
- GRP Sites
- Quad Boundaries
- Parish Boundaries

Kilometers

0 0.5 1 2 3

Miles

0 0.5 1 2 3



Site Information: A1		Location Information	
Name: Houma Navigation Canal at Intracoastal Waterway	Parish:	Terrebonne	
	Quad Name:	Houma	
Priority: A	Quad Number:	2909027	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 34' 12.065" N	
Site Description: Drinking Water Control Structure	Longitude:	90° 42' 58.222" W	
Response Considerations			
Site Strategy: Multi-Layer Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Rivers or Large Streams			
Current Wave Action: Currents >2 kts			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments:	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: A2		Location Information	
Name: Bayou Lacarpe North at Houma Navigational Canal		Parish:	Terrebonne
		Quad Name:	Houma
Priority: A		Quad Number:	2909027
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 31' 21.943" N
		Longitude:	90° 42' 29.532" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Bayou Lacarpe South at Houma Navigational Canal	Parish:	Terrebonne	
	Quad Name:	Houma	
Priority: A	Quad Number:	2909027	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 30' 18.890" N	
Site Description: Sensitive Habitat	Longitude:	90° 42' 40.708" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: B1		Location Information	
Name: Intracoastal Waterway at Multiple Industrial Slips		Parish:	Terrebonne
		Quad Name:	Houma
Priority: B		Quad Number:	2909027
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Industrial Area		Latitude:	29° 35' 56.443" N
		Longitude:	90° 39' 49.733" W
Response Considerations			
Site Strategy: Notification to Site Manager		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B2		Location Information	
Name: Bayou Terrebonne at Intracoastal Waterway (north)		Parish:	Terrebonne
		Quad Name:	Houma
Priority: B		Quad Number:	2909027
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Marina/Hospital		Latitude:	29° 35' 55.860" N
		Longitude:	90° 42' 38.099" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Marina/Hospital	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B3		Location Information	
Name: Bayou Terrebonne at Intracoastal Waterway (south)		Parish:	Terrebonne
		Quad Name:	Houma
Priority: B		Quad Number:	2909027
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
		Latitude:	29° 35' 55.705" N
Site Description: Marina/Hospital		Longitude:	90° 42' 35.505" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Marina/Hospital	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B4		Location Information	
Name: Bayou LaCarpe at Intracoastal Waterway	Parish:	Terrebonne	
	Quad Name:	Houma	
Priority: B	Quad Number:	2909027	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 34' 49.802" N	
Site Description: Industrial Area	Longitude:	90° 42' 58.152" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B5		Location Information	
Name: Bayou LaCarpe at Houma Navigation Canal	Parish:	Terrebonne	
	Quad Name:	Houma	
Priority: B	Quad Number:	2909027	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 33' 43.614" N	
Site Description: Industrial Area	Longitude:	90° 42' 17.730" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B6		Location Information	
Name: Houma Navigation Canal at Port of Terrebonne		Parish:	Terrebonne
		Quad Name:	Houma
Priority: B		Quad Number:	2909027
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Industrial Area		Latitude:	29° 33' 22.373" N
		Longitude:	90° 42' 18.175" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments:	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B7		Location Information	
Name: Houma Navigation Canal at Munson Slip	Parish:	Terrebonne	
	Quad Name:	Houma	
Priority: B	Quad Number:	2909027	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 32' 45.032" N	
Site Description: Industrial Area	Longitude:	90° 42' 12.511" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Industrial Area	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

BOURG QUAD

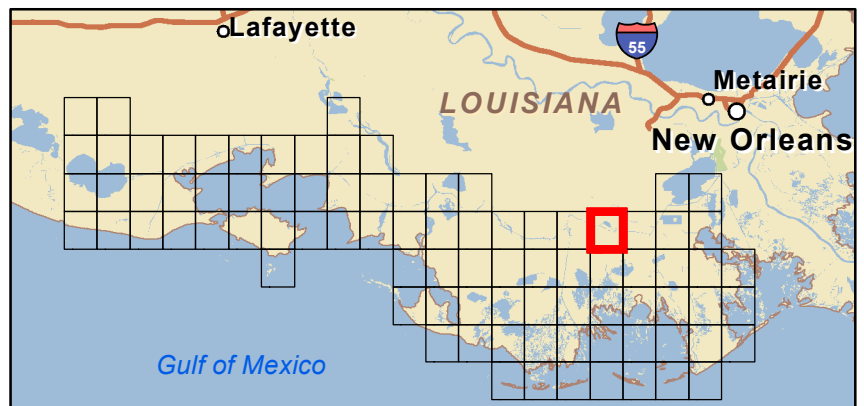


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



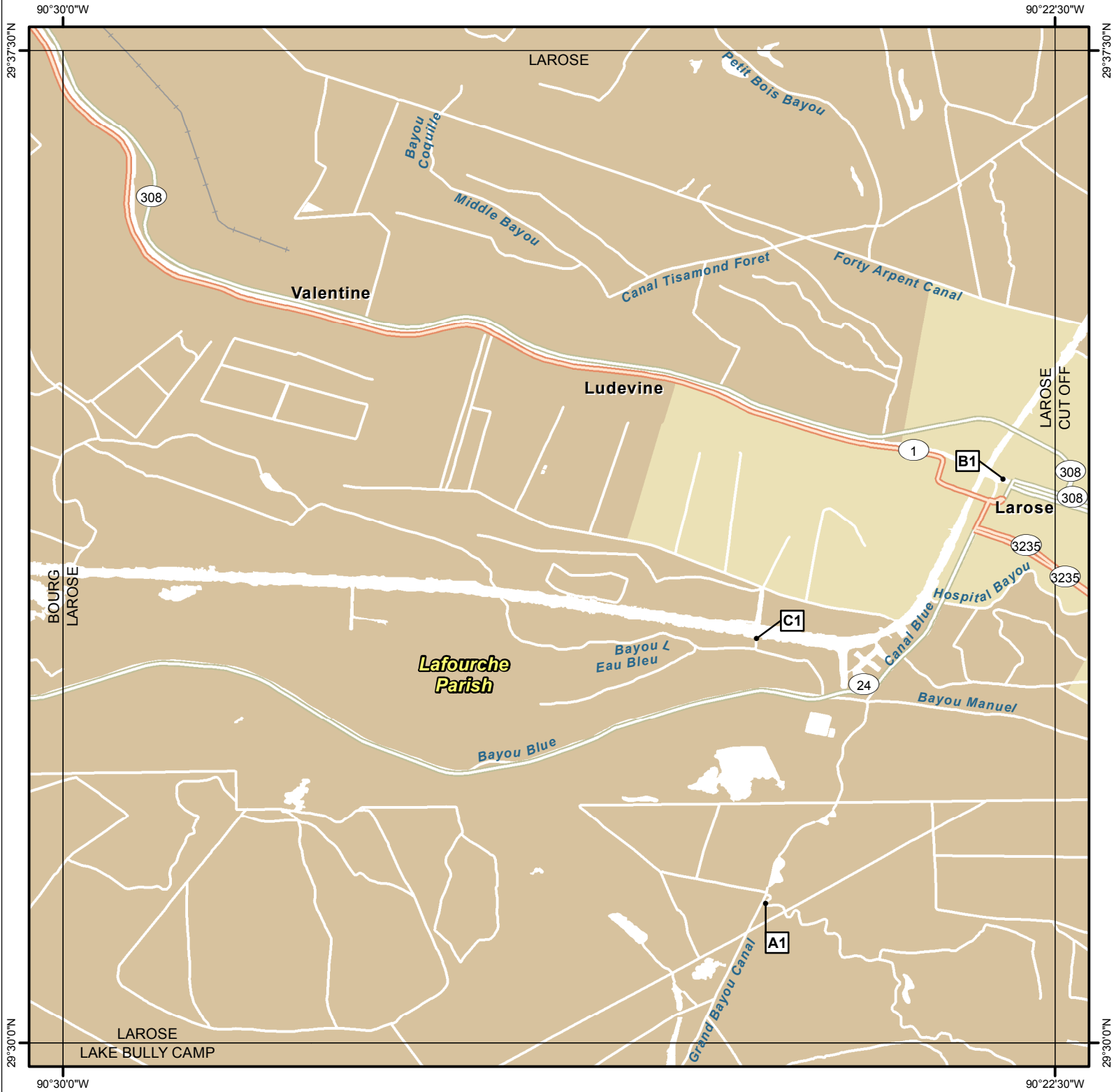
Site Information: A1		Location Information	
Name: Company Canal	Parish:	Lafourche	
	Quad Name:	Bourg	
Priority: A	Quad Number:	2909028	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
Site Description: Sensitive Habitat	Latitude:	29° 34' 35.981" N	
	Longitude:	90° 35' 23.911" W	
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: B1		Location Information	
Name: Entrance to Lake Long from Intracoastal Waterway		Parish:	Lafourche
		Quad Name:	Bourg
Priority: B		Quad Number:	2909028
Site Alias: None		Mile Marker:	48.7
		Managed (Y/N)?:	N
Site Description: Inlet		Latitude:	29° 34' 41.381" N
		Longitude:	90° 35' 18.542" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
		Marsh	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Eric Benoit		State Submitter: DEQ/Lafourche Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B2		Location Information	
Name: Intracoastal Waterway at Industrial Slip		Parish:	Terrebonne
		Quad Name:	Bourg
Priority: B		Quad Number:	2909028
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Industrial Area		Latitude:	29° 34' 29.234" N
		Longitude:	90° 37' 01.368" W
Response Considerations			
Site Strategy: Notification to Site Manager		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B3		Location Information	
Name: Access Canal at Intracoastal Waterway	Parish:	Lafourche	
	Quad Name:	Bourg	
Priority: B	Quad Number:	2909028	
Site Alias: N/A	Mile Marker:	44.8	
	Managed (Y/N)?:	N	
Site Description: Industrial Facility	Latitude:	29° 33' 34.321" N	
	Longitude:	90° 31' 42.943" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Industrial Facility	

LAROSE QUAD

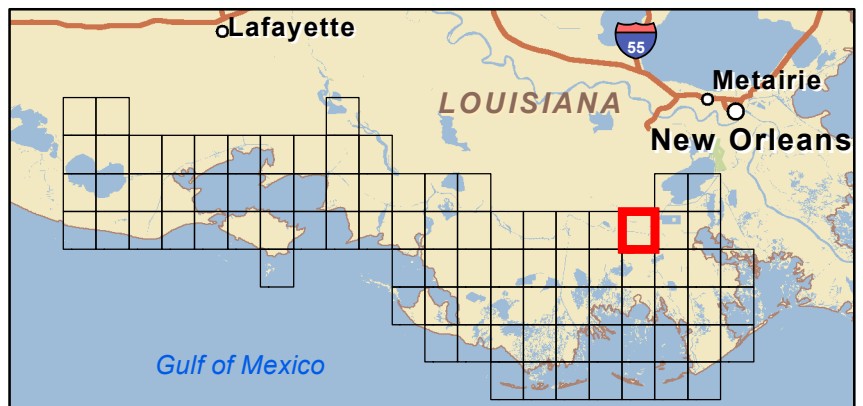


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Bayou Blue		Parish:	Lafourche
		Quad Name:	Larose
Priority:	A	Quad Number:	2909029
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 31' 03.159" N
		Longitude:	90° 24' 41.256" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: B1		Location Information	
Name: Bayou Lafourche Control Structure		Parish:	Lafourche
		Quad Name:	Larose
Priority: B		Quad Number:	2909029
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Control Structure		Latitude:	29° 34' 15.808" N
		Longitude:	90° 22' 53.429" W
Response Considerations			
Site Strategy: Notification to Site Manager		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Control Structure	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Control Structure	

Site Information: C1		Location Information	
Name: Entrance to Grand Bayou Canal from Intracoastal Waterway	Parish:	Lafourche	
	Quad Name:	Larose	
Priority: C	Quad Number:	2909029	
Site Alias: None	Mile Marker:	37.2	
	Managed (Y/N)?:	N	
	Latitude:	29° 33' 03.375" N	
Site Description: Inlet	Longitude:	90° 24' 45.333" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
		Wildlife Sensitive Area	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Eric Benoit		State Submitter: Lafourche Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: Parish Point Only	

CUT OFF QUAD

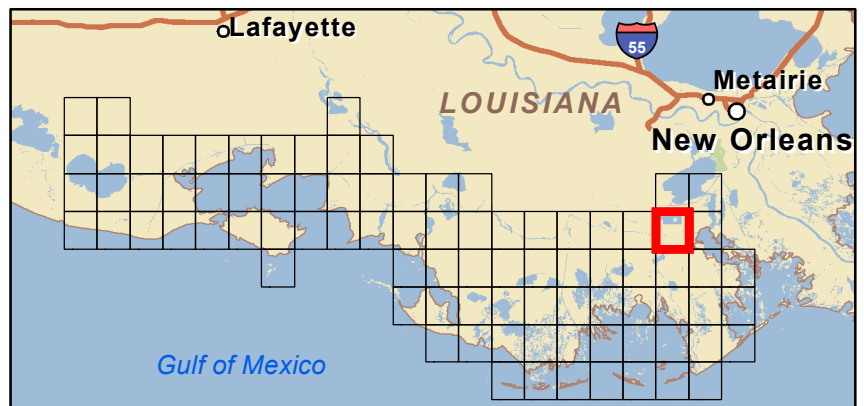


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

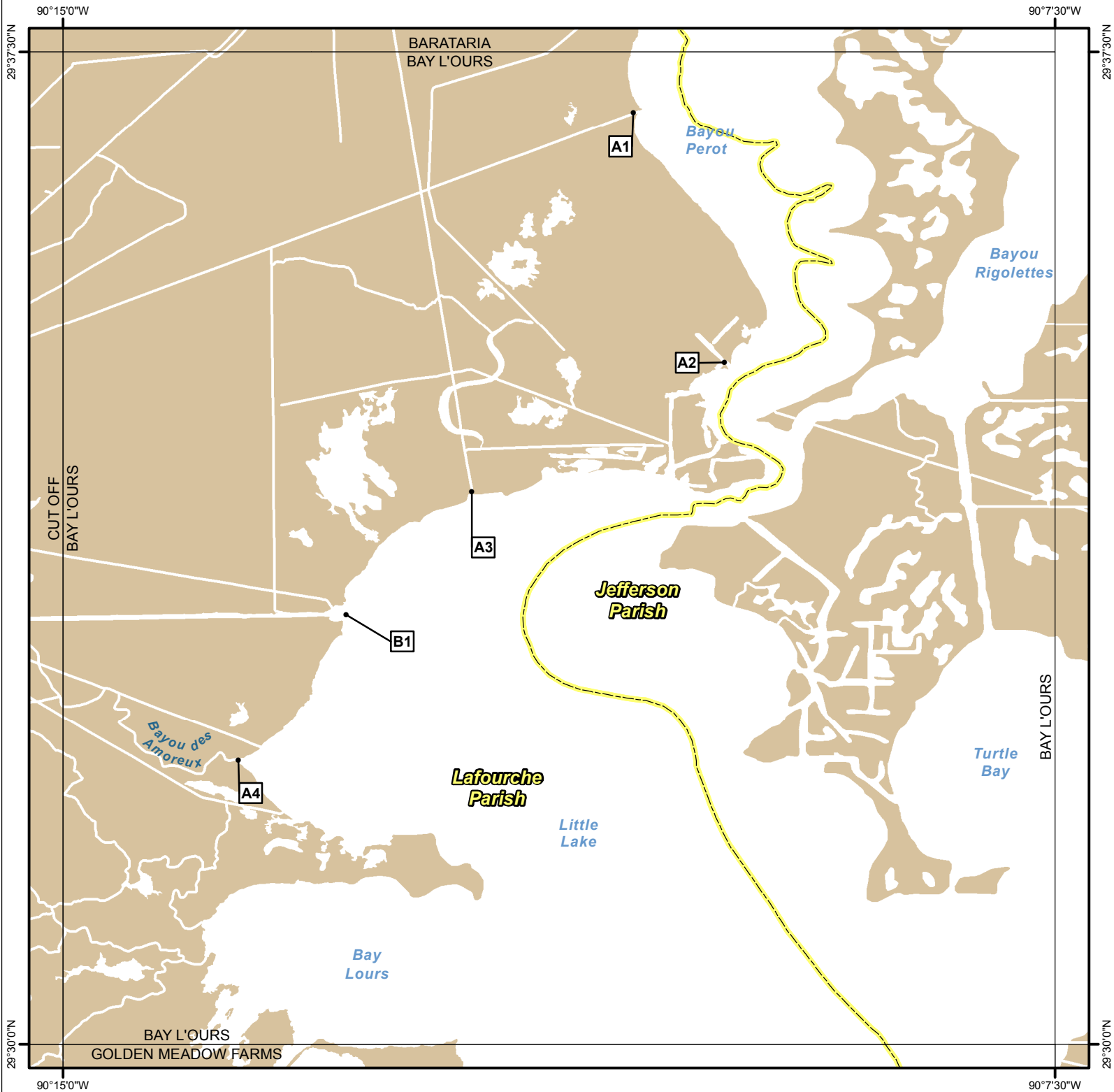
0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: B1		Location Information	
Name: Clovelly Boat Launch		Parish:	Lafourche
		Quad Name:	Cut Off
Priority: B		Quad Number:	2909030
Site Alias: None		Mile Marker:	
Site Description: Boat Launch		Managed (Y/N)?:	Y - Wildlife Area
		Latitude:	29° 33' 11.646" N
		Longitude:	90° 16' 31.751" W
Response Considerations			
Site Strategy: Notification to Site Manager		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Boat Launch/Marina	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Eric Benoit		State Submitter: DEQ/Lafourche Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

BAY L'OURS QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

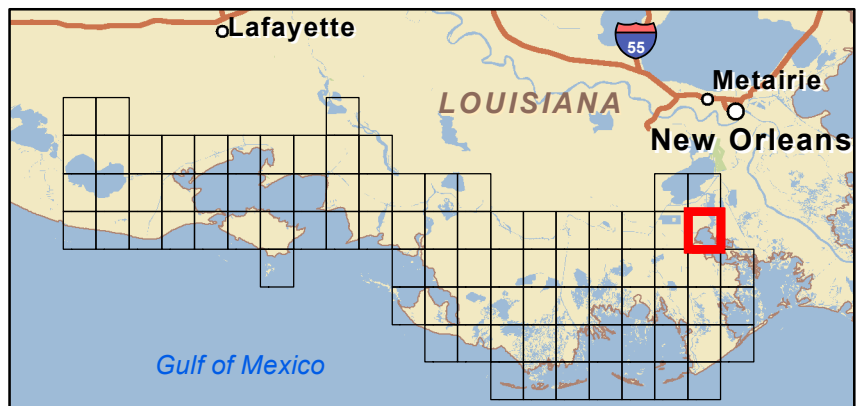


Kilometers

0 0.5 1 2 3

Miles

0 0.5 1 2 3



Site Information: A1		Location Information	
Name: Oilfield Canal (north)		Parish:	Lafourche
		Quad Name:	Bay L'Ours
Priority: A		Quad Number: 2909031	
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 37' 02.425" N
		Longitude:	90° 10' 41.361" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

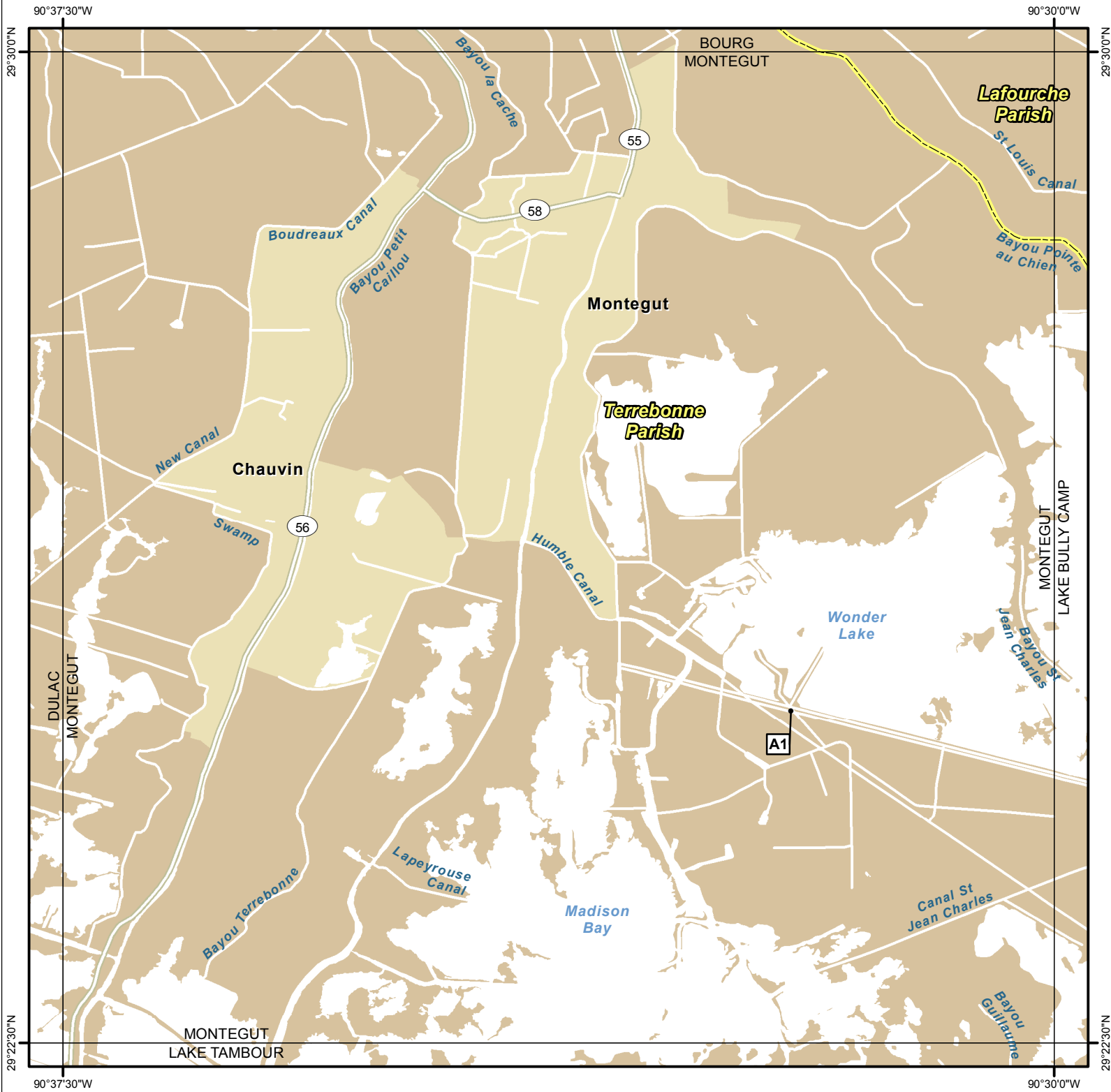
Site Information: A2		Location Information	
Name: Oilfield Canal (central)		Parish:	Lafourche
		Quad Name:	Bay L'Ours
Priority: A		Quad Number: 2909031	
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 35' 09.180" N
		Longitude:	90° 09' 59.819" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Oilfield Canal (south)	Parish:	Lafourche	
	Quad Name:	Bay L'Ours	
Priority: A	Quad Number:	2909031	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 34' 10.700" N	
Site Description: Sensitive Habitat	Longitude:	90° 11' 54.606" W	
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A4		Location Information	
Name: Bayou Des Amoureux		Parish:	Lafourche
		Quad Name:	Bay L'Ours
Priority: A		Quad Number: 2909031	
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 32' 09.097" N
		Longitude:	90° 13' 40.541" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

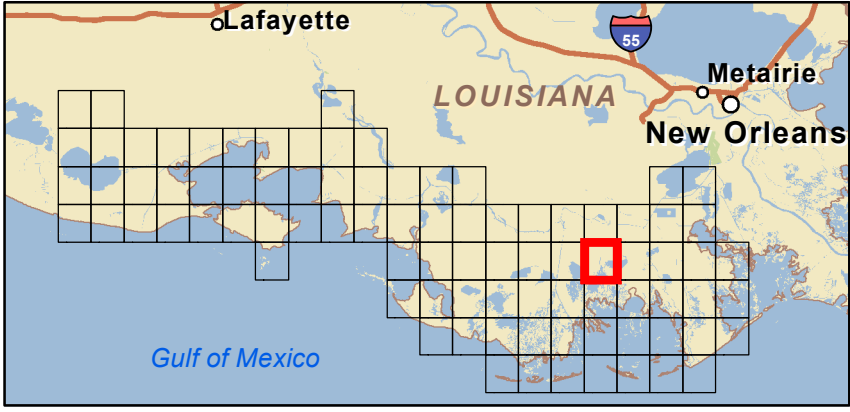
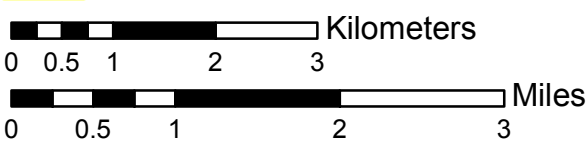
Site Information: B1		Location Information	
Name: Entrance to Clovelly Boat Launch from Bayou L'ourse		Parish:	Lafourche
		Quad Name:	Bay L'ourse
Priority: B		Quad Number:	2909031
Site Alias: Bayou des Amoureux		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Inlet		Latitude:	29° 33' 14.744" N
		Longitude:	90° 12' 51.610" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Boat Launch/Marina	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Eric Benoit		State Submitter: DEQ/Lafourche Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

MONTEGUT QUAD



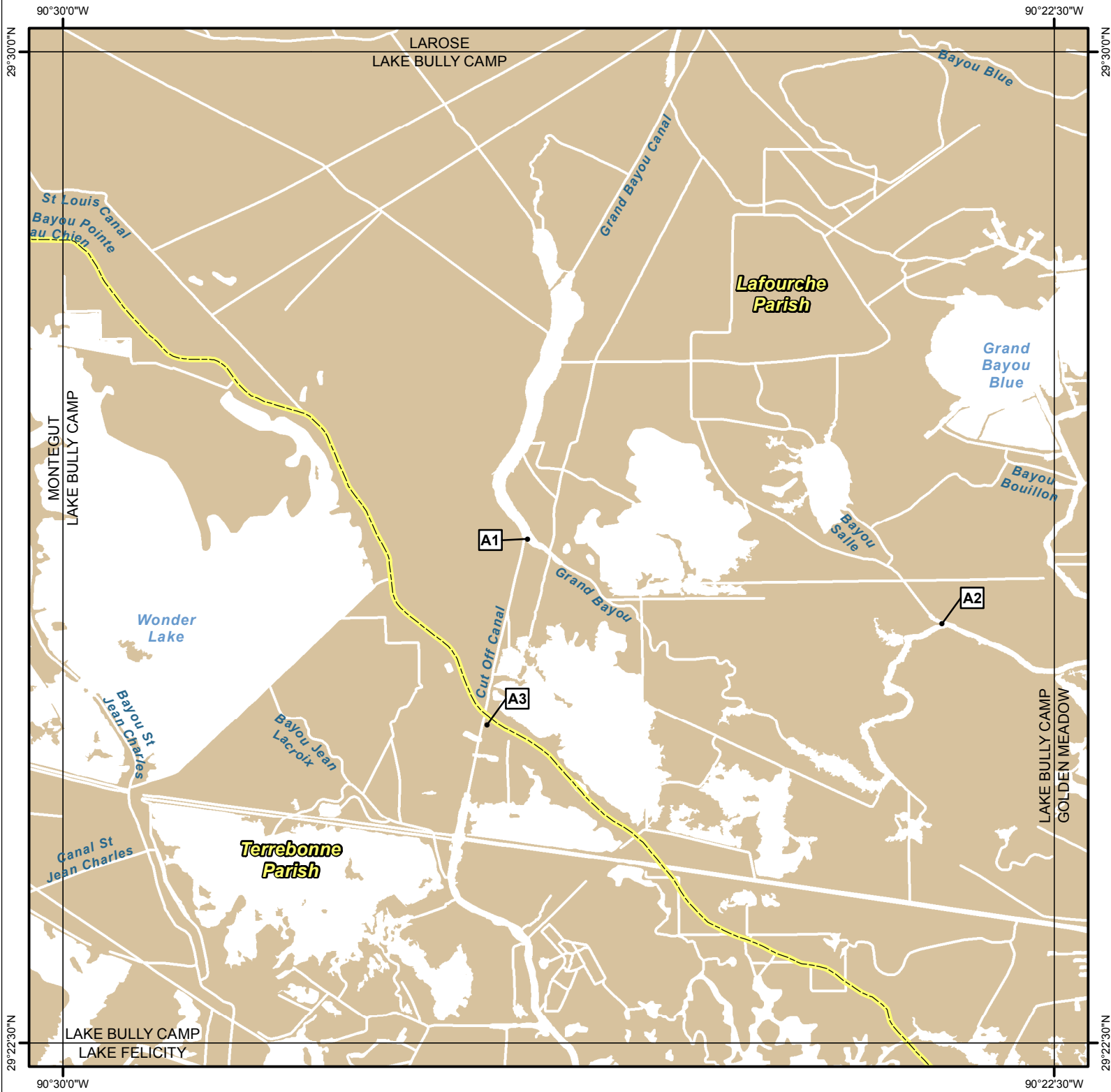
Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



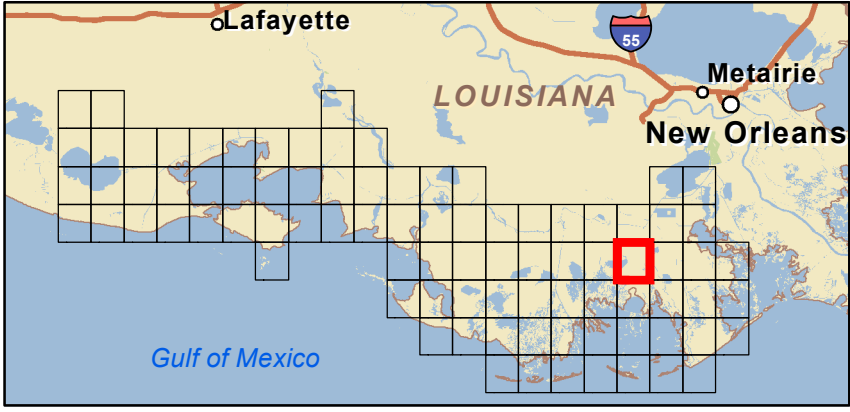
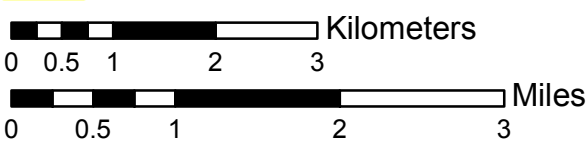
Site Information: A1		Location Information	
Name: Double Pipeline Canal	Parish: Terrebonne	Quad Name: Montegut	
Priority: A	Quad Number: 2909036		
Site Alias: None	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 25' 00.793" N		
Site Description: Wildlife Management Area (WMA)/Pointe Aux Chenes	Longitude: 90° 31' 59.470" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Wildlife Management Area (WMA)/Pointe Aux Chenes	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish (Note- two parallel canals side by side)	

LAKE BULLY CAMP QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: A1		Location Information	
Name: Cut Off Canal		Parish:	Lafourche
		Quad Name:	Lake Bully Camp
Priority: A		Quad Number:	2909037
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 26' 18.858" N
Site Description: State Refuge part of Pointe Aux Chenes WMA		Longitude:	90° 26' 28.926" W
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Bayou		Parish:	Lafourche
		Quad Name:	Lake Bully Camp
Priority: A		Quad Number:	2909037
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 25' 40.306" N
		Longitude:	90° 23' 20.855" W
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Cutoff Canal at Bayou Pointe Aux Chenes	Parish:	Terrebonne	
	Quad Name:	Lake Bully Camp	
Priority: A	Quad Number:	2909037	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 24' 54.528" N	
Site Description: Pointe Aux Chenes WMA	Longitude:	90° 26' 47.413" W	
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Pointe Aux Chenes WMA	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

GOLDEN MEADOW QUAD



Legend

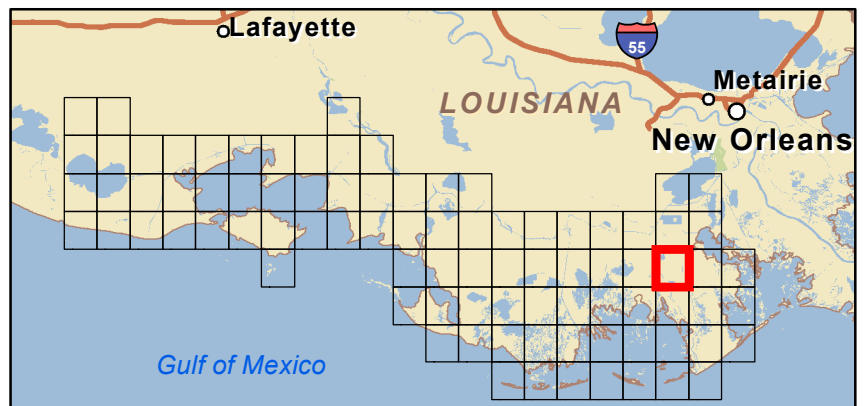
- GRP Sites
- Quad Boundaries
- Parish Boundaries

Kilometers

0 0.5 1 2 3

Miles

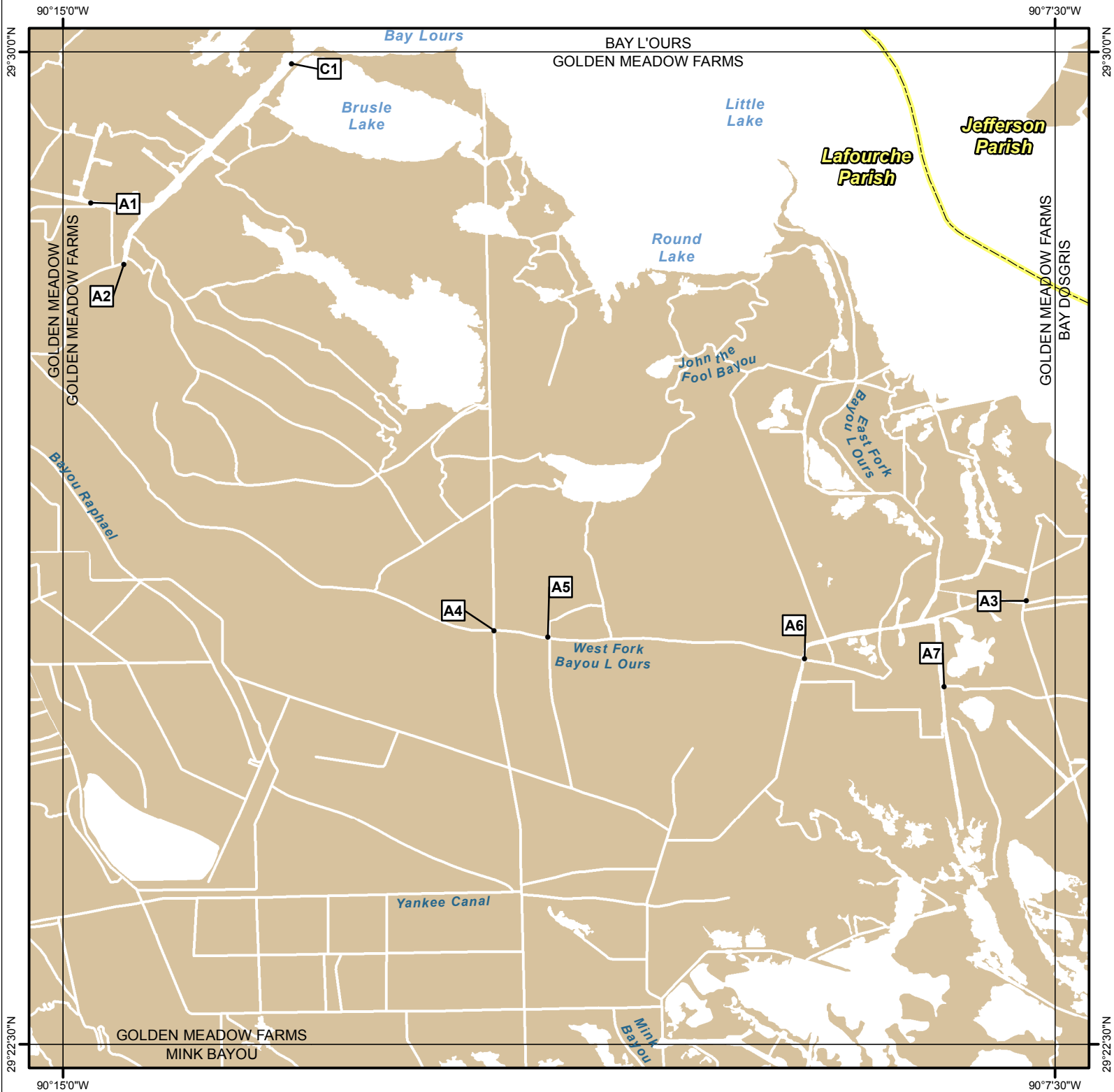
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Site Information: A1		Location Information	
Name: North Catfish Lake Inlet		Parish:	Lafourche
		Quad Name:	Golden Meadow
Priority: A		Quad Number:	2909038
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Inlet		Latitude:	29° 23' 48.952" N
		Longitude:	90° 18' 49.280" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DNR/CPRA		State Submitter: DNR/CPRA	
Submit Date: 2013.04.16		State Comments:	

Site Information: A2		Location Information	
Name: Grand Bayou	Parish:	Lafourche	
	Quad Name:	Golden Meadow	
Priority: A	Quad Number:	2909038	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
Site Description: Bayou	Latitude:	29° 22' 41.613" N	
	Longitude:	90° 20' 06.617" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DNR/CPRA		State Submitter: DNR/CPRA	
Submit Date: 2013.04.16		State Comments:	

GOLDEN MEADOW FARMS QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

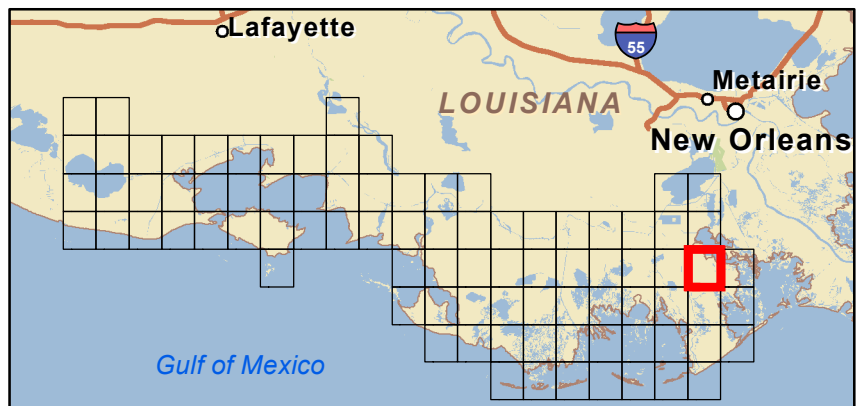


Kilometers

0 0.5 1 2 3

Miles

0 0.5 1 2 3



Site Information: A1		Location Information	
Name: Pipeline Canal near LOOP Clovelly	Parish:	Lafourche	
	Quad Name:	Golden Meadow Farms	
Priority: A	Quad Number:	2909039	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 28' 51.740" N	
Site Description: Sensitive Habitat	Longitude:	90° 14' 47.559" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Bayou near LOOP Clovelly	Parish:	Lafourche	
	Quad Name:	Golden Meadow Farms	
Priority: A	Quad Number:	2909039	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 28' 23.565" N	
Site Description: Sensitive Habitat	Longitude:	90° 14' 32.535" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Pipeline Canal at East Fork Bayou L'Ours	Parish:	Lafourche	
	Quad Name:	Golden Meadow Farms	
Priority: A	Quad Number:	2909039	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 25' 51.042" N	
Site Description: Sensitive Habitat	Longitude:	90° 07' 42.844" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A4		Location Information	
Name: Pipeline Canal (west) at West Fork Bayou L'Ours		Parish:	Lafourche
		Quad Name:	Golden Meadow Farms
Priority: A		Quad Number:	2909039
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 25' 37.643" N
		Longitude:	90° 11' 44.494" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments:	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A5		Location Information	
Name: Pipeline Canal (central west) at West Fork Bayou L'Ours		Parish:	Lafourche
		Quad Name:	Golden Meadow Farms
Priority:	A	Quad Number:	2909039
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 25' 34.612" N
		Longitude:	90° 11' 19.980" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments:	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A6		Location Information	
Name: Pipeline Canal (central east) at West Fork Bayou L'Ours	Parish:	Lafourche	
	Quad Name:	Golden Meadow Farms	
Priority: A	Quad Number:	2909039	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 25' 24.925" N	
Site Description: Sensitive Habitat	Longitude:	90° 09' 23.543" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A7		Location Information	
Name: Pipeline Canal (east) at West Fork Bayou L'Ours		Parish:	Lafourche
		Quad Name:	Golden Meadow Farms
Priority: A		Quad Number:	2909039
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 25' 12.212" N
		Longitude:	90° 08' 20.316" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: C1		Location Information	
Name: Entrance from Round Lake to East Side of Bayou Lafourche		Parish:	Lafourche
		Quad Name:	Golden Meadow Farms
Priority: C		Quad Number:	2909039
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Inlet		Latitude:	29° 29' 54.874" N
		Longitude:	90° 13' 16.288" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marsh	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Eric Benoit		State Submitter: Lafourche Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

BAY DOSGRIS QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

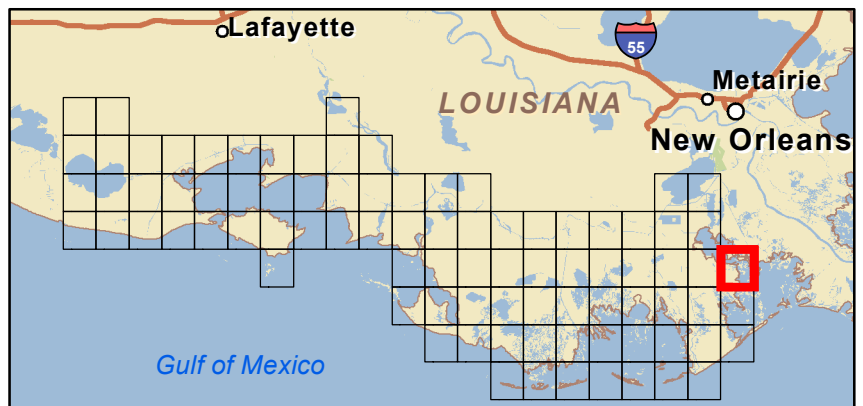


Kilometers

0 0.5 1 2 3

Miles

0 0.5 1 2 3



Site Information: A1		Location Information	
Name: Oilfield Canal		Parish:	Lafourche
		Quad Name:	Bay Dosgris
Priority: A		Quad Number:	2909040
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 26' 22.680" N
		Longitude:	90° 05' 24.526" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Bayou (north)	Parish:	Lafourche	
	Quad Name:	Bay Dosgris	
Priority: A	Quad Number:	2909040	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 25' 39.712" N	
Site Description: Sensitive Habitat	Longitude:	90° 04' 04.271" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Bayou (south)		Parish:	Lafourche
		Quad Name:	Bay Dosgris
Priority:	A	Quad Number:	2909040
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 25' 10.338" N
		Longitude:	90° 03' 44.762" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A4		Location Information	
Name: Canal (north)		Parish:	Lafourche
		Quad Name:	Bay Dosgris
Priority: A		Quad Number:	2909040
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 23' 27.744" N
		Longitude:	90° 07' 25.678" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A5		Location Information	
Name: Canal (central)	Parish:	Lafourche	
	Quad Name:	Bay Dosgris	
Priority: A	Quad Number:	2909040	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
Site Description: Sensitive Habitat	Latitude:	29° 23' 26.883" N	
	Longitude:	90° 06' 56.890" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A6		Location Information	
Name: Canal (south)		Parish:	Lafourche
		Quad Name:	Bay Dosgris
Priority:	A	Quad Number:	2909040
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?:	N
Site Description: Sensitive Habitat		Latitude:	29° 23' 26.515" N
		Longitude:	90° 06' 35.581" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: C1		Location Information	
Name: Entrance from Coffee Bay to Canal (north)	Parish:	Lafourche	
	Quad Name:	Bay Dosgris	
Priority: C	Quad Number:	2909040	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 27' 07.995" N	
Site Description: Inlet	Longitude:	90° 06' 40.434" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marsh	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Eric Benoit		State Submitter: Lafourche Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: C2		Location Information	
Name: Entrance from Coffee Bay to Canal (south)	Parish:	Lafourche	
	Quad Name:	Bay Dosgris	
Priority: C	Quad Number:	2909040	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 26' 57.056" N	
Site Description: Inlet	Longitude:	90° 06' 03.433" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marsh	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Eric Benoit		State Submitter: Lafourche Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

LAKE FELICITY QUAD



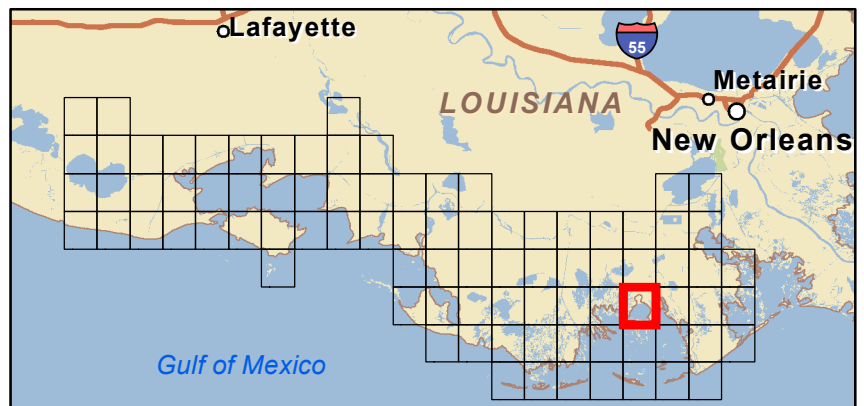
Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Canal		Parish:	Lafourche
		Quad Name:	Lake Felicity
Priority:	A	Quad Number:	2909045
Site Alias:	N/A	Mile Marker:	
		Managed (Y/N)?:	N
Site Description:	Sensitive Habitat	Latitude:	29° 16' 30.023" N
		Longitude:	90° 22' 44.028" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Island in Lake Felicity	Parish:	Terrebonne	
	Quad Name:	Lake Felicity	
Priority: A	Quad Number:	2909045	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 15' 18.072" N	
Site Description: Bird nesting area	Longitude:	90° 26' 21.277" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Pelican, roseate spoonbill and tern/gull nesting colony	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: B1		Location Information	
Name: Lake Chien East		Parish:	Terrebonne
		Quad Name:	Lake Felicity
Priority: B		Quad Number:	2909045
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 21' 01.237" N
		Longitude:	90° 26' 48.491" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

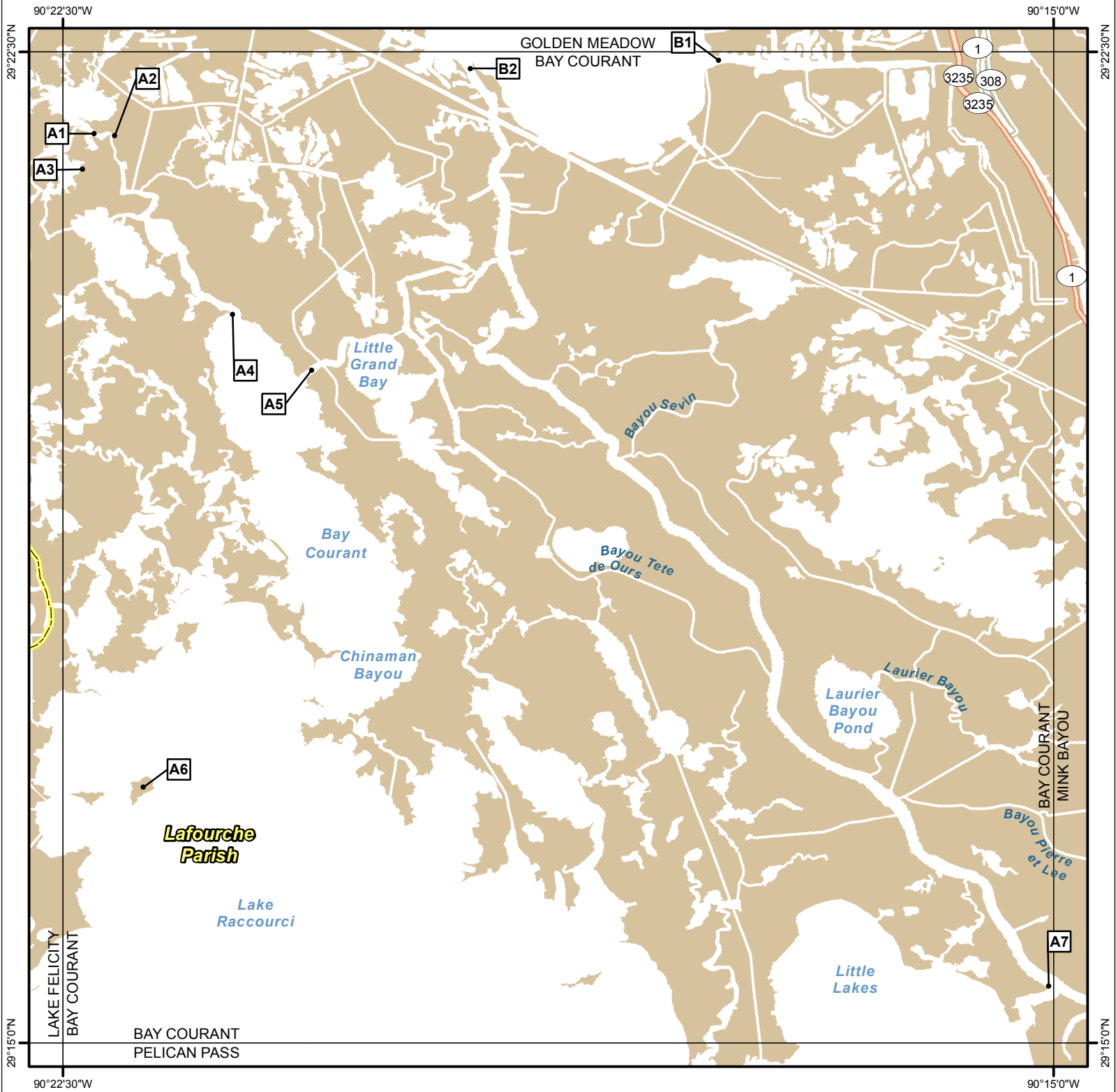
Site Information: B2		Location Information	
Name: Bayou Pointe Au Chien		Parish:	Terrebonne
		Quad Name:	Lake Felicity
Priority: B		Quad Number:	2909045
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 20' 53.587" N
		Longitude:	90° 25' 47.073" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B3		Location Information	
Name: Lake Chien Central		Parish:	Terrebonne
		Quad Name:	Lake Felicity
Priority: B		Quad Number:	2909045
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 20' 44.778" N
		Longitude:	90° 27' 10.289" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B4		Location Information	
Name: Lake Chien West		Parish:	Terrebonne
		Quad Name:	Lake Felicity
Priority: B		Quad Number:	2909045
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 20' 12.070" N
		Longitude:	90° 27' 35.027" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

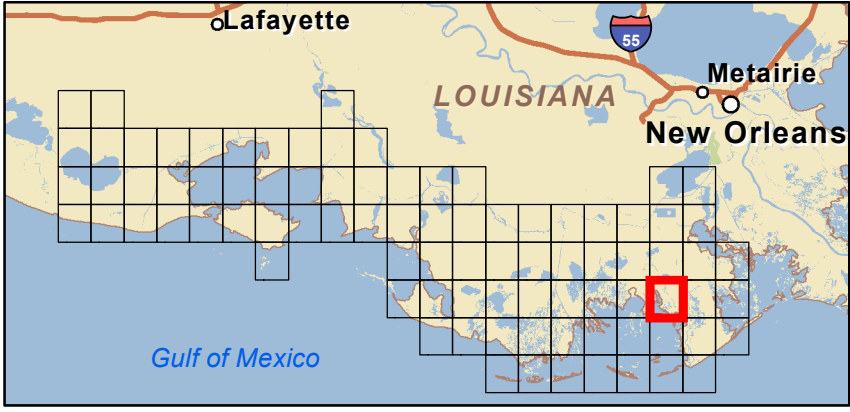
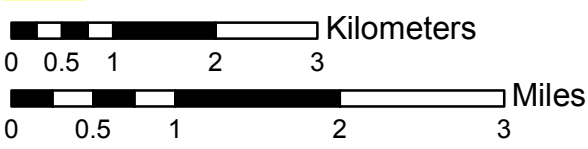
Site Information: B5		Location Information	
Name: Lake Felicity West		Parish:	Terrebonne
		Quad Name:	Lake Felicity
Priority: B		Quad Number:	2909045
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 18' 37.811" N
		Longitude:	90° 27' 44.777" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

BAY COURANT QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: A1		Location Information	
Name: Channel (north)		Parish:	Lafourche
		Quad Name:	Bay Courant
Priority: A		Quad Number: 2909046	
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 21' 53.021" N
		Longitude:	90° 22' 15.809" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A2		Location Information	
Name: Channel (central)		Parish:	Lafourche
		Quad Name:	Bay Courant
Priority:	A	Quad Number:	2909046
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 21' 51.982" N
		Longitude:	90° 22' 06.579" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A3		Location Information	
Name: Channel (south)		Parish:	Lafourche
		Quad Name:	Bay Courant
Priority:	A	Quad Number:	2909046
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 21' 36.623" N
		Longitude:	90° 22' 21.047" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A4		Location Information	
Name: Bayou at Bay Courant		Parish:	Lafourche
		Quad Name:	Bay Courant
Priority:	A	Quad Number:	2909046
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 20' 30.734" N
		Longitude:	90° 21' 12.903" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A5		Location Information	
Name: Bayou at east Bay Courant		Parish:	Lafourche
		Quad Name:	Bay Courant
Priority: A		Quad Number:	2909046
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 20' 05.577" N
		Longitude:	90° 20' 36.959" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A6		Location Information	
Name: East Felicity Island in Deep Lake		Parish:	Lafourche
		Quad Name:	Bay Courant
Priority: A		Quad Number:	2909046
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Bird nesting area		Latitude:	29° 16' 56.092" N
		Longitude:	90° 21' 53.602" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Tern nesting area	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A7		Location Information	
Name: Cut off at Grand Bayou		Parish:	Lafourche
		Quad Name:	Bay Courant
Priority:	A	Quad Number:	2909046
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 15' 25.836" N
		Longitude:	90° 15' 02.137" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: B1		Location Information	
Name: Entrance from Catfish Lake to Jean Plesance Canal		Parish:	Lafourche
		Quad Name:	Bay Courant
Priority: B		Quad Number:	2909046
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
		Latitude:	29° 22' 26.287" N
Site Description: Inlet		Longitude:	90° 17' 32.104" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Recreational Fishing	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Eric Benoit		State Submitter: Lafourche Parish/Sector NOLA/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish and Sector NOLA	

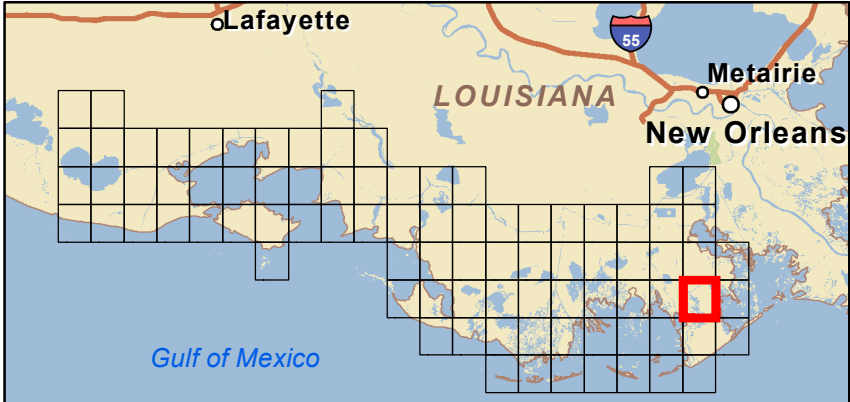
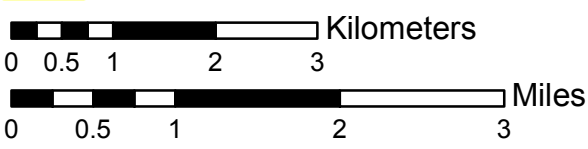
Site Information: B2		Location Information	
Name: Entrance from Catfish Lake to Grand Bayou	Parish:	Lafourche	
	Quad Name:	Bay Courant	
Priority: B	Quad Number:	2909046	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 22' 22.560" N	
Site Description: Inlet	Longitude:	90° 19' 24.950" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Recreational Fishing	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Eric Benoit		State Submitter: Lafourche Parish/Sector NOLA/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish and Sector NOLA	

MINK BAYOU QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: A1		Location Information	
Name: Canal (north)	Parish:	Lafourche	
	Quad Name:	Mink Bayou	
Priority: A	Quad Number:	2909047	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
Site Description: Sensitive Habitat	Latitude:	29° 21' 53.792" N	
	Longitude:	90° 10' 30.411" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A2		Location Information	
Name: Tidewater Canal	Parish:	Lafourche	
	Quad Name:	Mink Bayou	
Priority: A	Quad Number:	2909047	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
Site Description: Sensitive Habitat	Latitude:	29° 20' 06.523" N	
	Longitude:	90° 14' 11.498" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A3		Location Information	
Name: Pipeline Canal at Bay Rambo		Parish:	Lafourche
		Quad Name:	Mink Bayou
Priority:	A	Quad Number:	2909047
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 19' 26.510" N
		Longitude:	90° 07' 33.339" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A4		Location Information	
Name: Canal northeast entrance into Bay Jaque	Parish:	Lafourche	
	Quad Name:	Mink Bayou	
Priority: A	Quad Number:	2909047	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 18' 42.410" N	
Site Description: Sensitive Habitat	Longitude:	90° 08' 45.156" W	
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments:		
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By Preexisting Parish Assessment	State Submitter:		
Submit Date: 2012.10.01	State Comments:		

Site Information: A5		Location Information	
Name: Canal northwest entrance into Bay Jaque	Parish:	Lafourche	
	Quad Name:	Mink Bayou	
Priority: A	Quad Number:	2909047	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 18' 29.781" N	
Site Description: Sensitive Habitat	Longitude:	90° 08' 55.114" W	
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments:		
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By Preexisting Parish Assessment	State Submitter:		
Submit Date: 2012.10.01	State Comments:		

Site Information: A6		Location Information	
Name: Canal off Bayou Fer Blanc	Parish: Lafourche	Quad Name: Mink Bayou	
	Quad Number: 2909047		
Priority: A	Mile Marker:		
Site Alias: N/A	Managed (Y/N)?: N		
	Latitude: 29° 17' 06.251" N		
	Longitude: 90° 08' 24.498" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A7		Location Information	
Name: Bayou Fer Blanc		Parish:	Lafourche
		Quad Name:	Mink Bayou
Priority:	A	Quad Number:	2909047
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 15' 39.698" N
		Longitude:	90° 08' 19.177" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

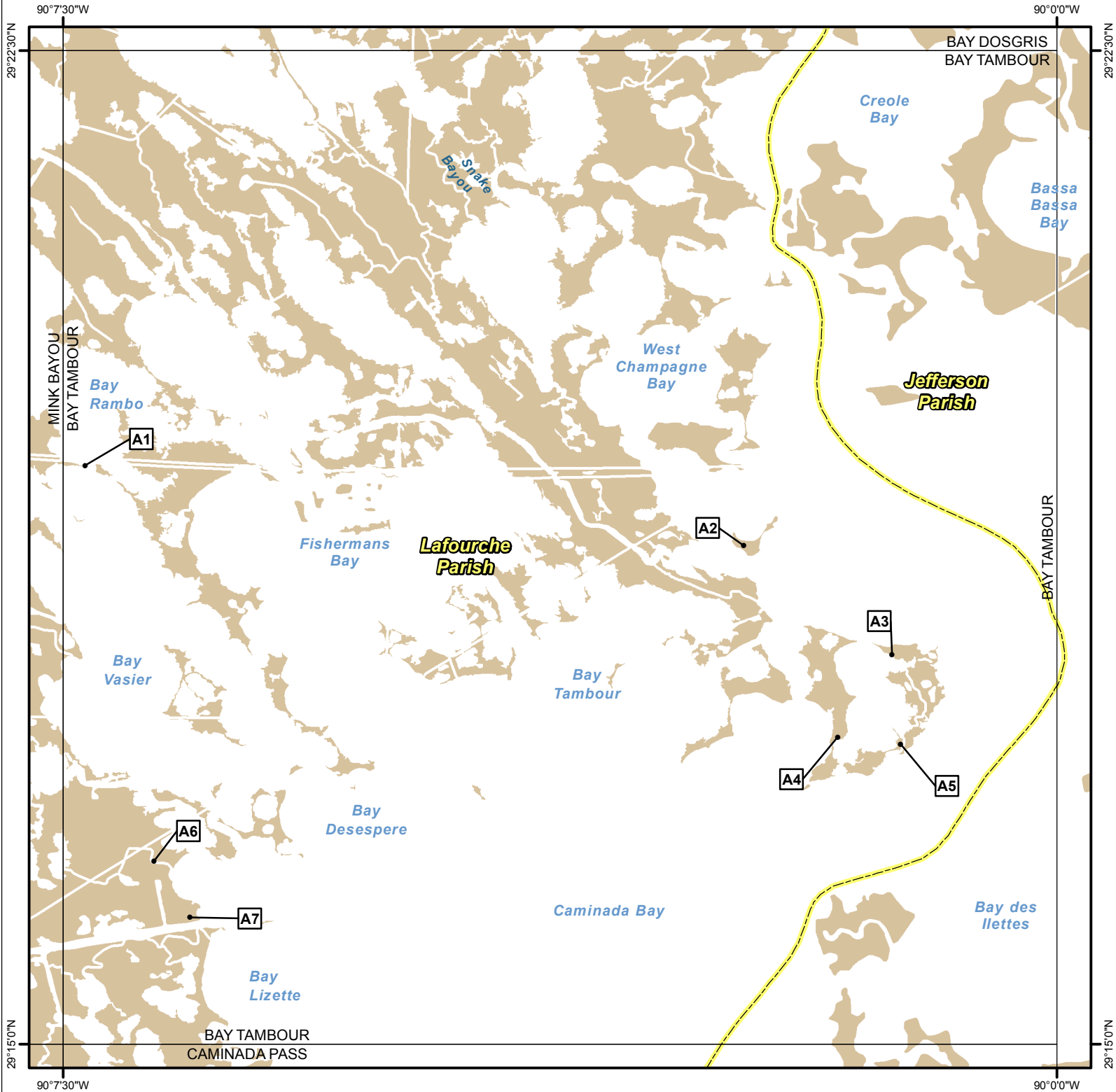
Site Information: A8		Location Information	
Name: Canal (south)	Parish:	Lafourche	
	Quad Name:	Mink Bayou	
Priority: A	Quad Number:	2909047	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
Site Description: Sensitive Habitat	Latitude:	29° 15' 06.445" N	
	Longitude:	90° 13' 36.043" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: B1		Location Information	
Name: Entrance to BBY Marina from Bayou Lafourche	Parish:	Lafourche	
	Quad Name:	Mink Bayou	
Priority: B	Quad Number:	2909047	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Area	
	Latitude:	29° 16' 00.961" N	
Site Description: Boat Launch	Longitude:	90° 13' 05.613" W	
Response Considerations			
Site Strategy: Notification to Site Manager		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Boat Launch/Marina	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Eric Benoit		State Submitter: Lafourche Parish/Sector NOLA/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish and Sector NOLA	

Site Information: B2		Location Information	
Name: Commercial Fishing Area (Business and Restaurants)		Parish:	Lafourche
		Quad Name:	Mink Bayou
Priority: B		Quad Number:	2909047
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
		Latitude:	29° 15' 02.795" N
Site Description: Commercial Fishing Area		Longitude:	90° 12' 32.670" W
Response Considerations			
Site Strategy: Notification to Site Manager		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Business/Restaurants and Cultural Resources	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Eric Benoit		State Submitter: Lafourche Parish/Sector NOLA/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish and Sector NOLA	

Site Information: C1		Location Information	
Name: Pipeline Canal intersection on East side of Bayou Lafourche		Parish:	Lafourche
		Quad Name:	Mink Bayou
Priority: C		Quad Number:	2909047
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Intersection		Latitude:	29° 19' 42.543" N
		Longitude:	90° 14' 19.909" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marsh	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Eric Benoit		State Submitter: Lafourche Parish/Sector NOLA/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish and Sector NOLA	

BAY TAMBOUR QUAD

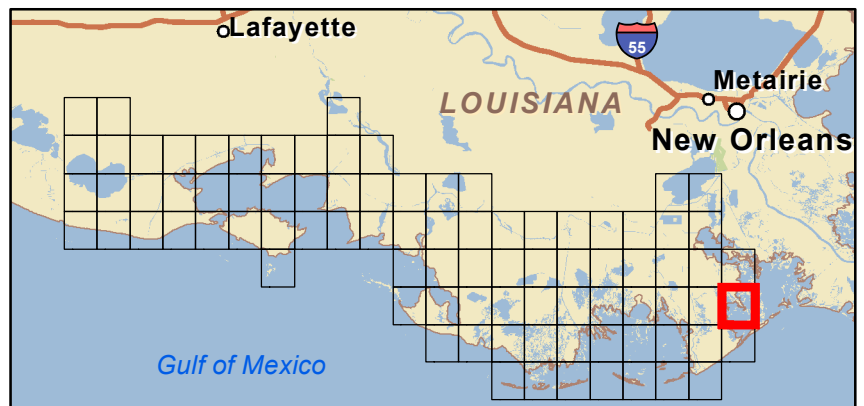


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Pipeline Canal into Lake Pierre		Parish:	Lafourche
		Quad Name:	Bay Tambour
Priority:	A	Quad Number:	2909048
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 19' 22.117" N
		Longitude:	90° 07' 20.197" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: 1000-1500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A2		Location Information	
Name: Hatchet Lake East (Island)		Parish:	Lafourche
		Quad Name:	Bay Tambour
Priority: A		Quad Number:	2909048
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Bird nesting area		Latitude:	29° 18' 45.733" N
		Longitude:	90° 02' 21.866" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Tern nesting area	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A3		Location Information	
Name: Bay Joyeux (north)		Parish:	Lafourche
		Quad Name:	Bay Tambour
Priority: A		Quad Number: 2909048	
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Tern Nesting Colony		Latitude:	29° 17' 56.508" N
		Longitude:	90° 01' 14.641" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Tern Nesting Colony	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

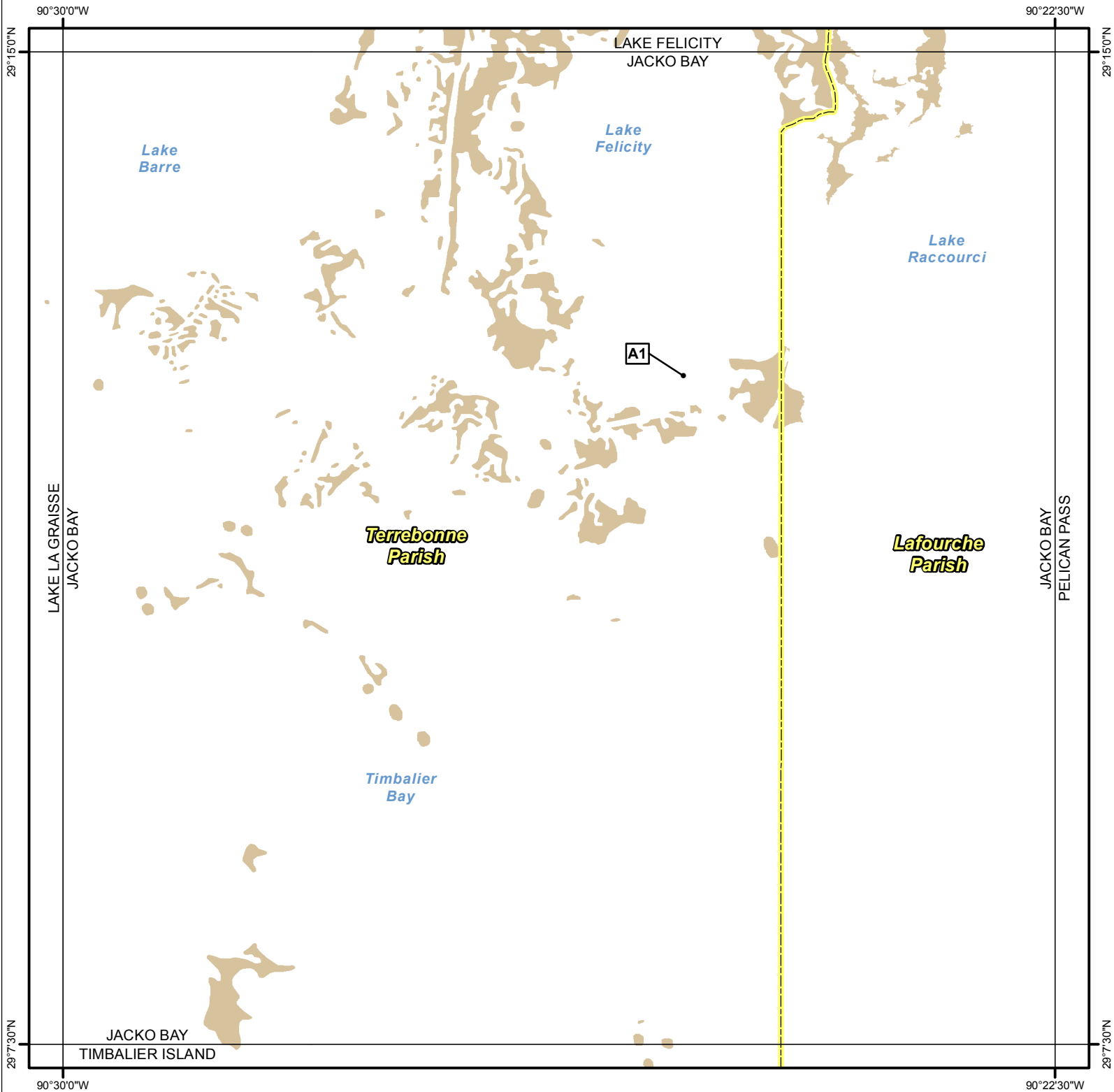
Site Information: A4		Location Information	
Name: Bay Joyeux (west)		Parish:	Lafourche
		Quad Name:	Bay Tambour
Priority: A		Quad Number:	2909048
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Tern Nesting Colony		Latitude:	29° 17' 19.089" N
		Longitude:	90° 01' 39.208" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Tern Nesting Colony	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A5		Location Information	
Name: Bay Joyeux (east)		Parish:	Lafourche
		Quad Name:	Bay Tambour
Priority: A		Quad Number:	2909048
Site Alias: None		Mile Marker:	
		Managed (Y/N)?:	N
Site Description: Tern Nesting Colony		Latitude:	29° 17' 15.978" N
		Longitude:	90° 01' 10.678" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Tern Nesting Colony	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A6		Location Information	
Name: Bayou		Parish: Lafourche	
		Quad Name: Bay Tambour	
Priority: A		Quad Number: 2909048	
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude: 29° 16' 22.984" N	
		Longitude: 90° 06' 48.902" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A7		Location Information	
Name: Southwest Louisiana Canal into Caminada Bay	Parish:	Lafourche	
	Quad Name:	Bay Tambour	
Priority: A	Quad Number:	2909048	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 15' 57.427" N	
Site Description: Sensitive Habitat	Longitude:	90° 06' 32.701" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

JACKO BAY QUAD

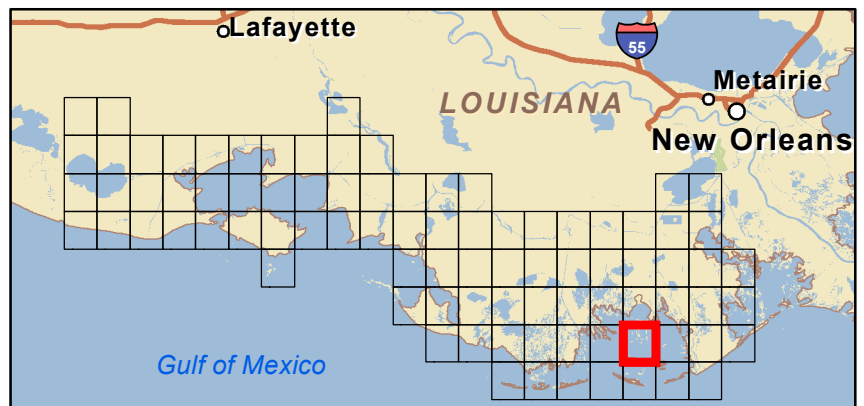


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

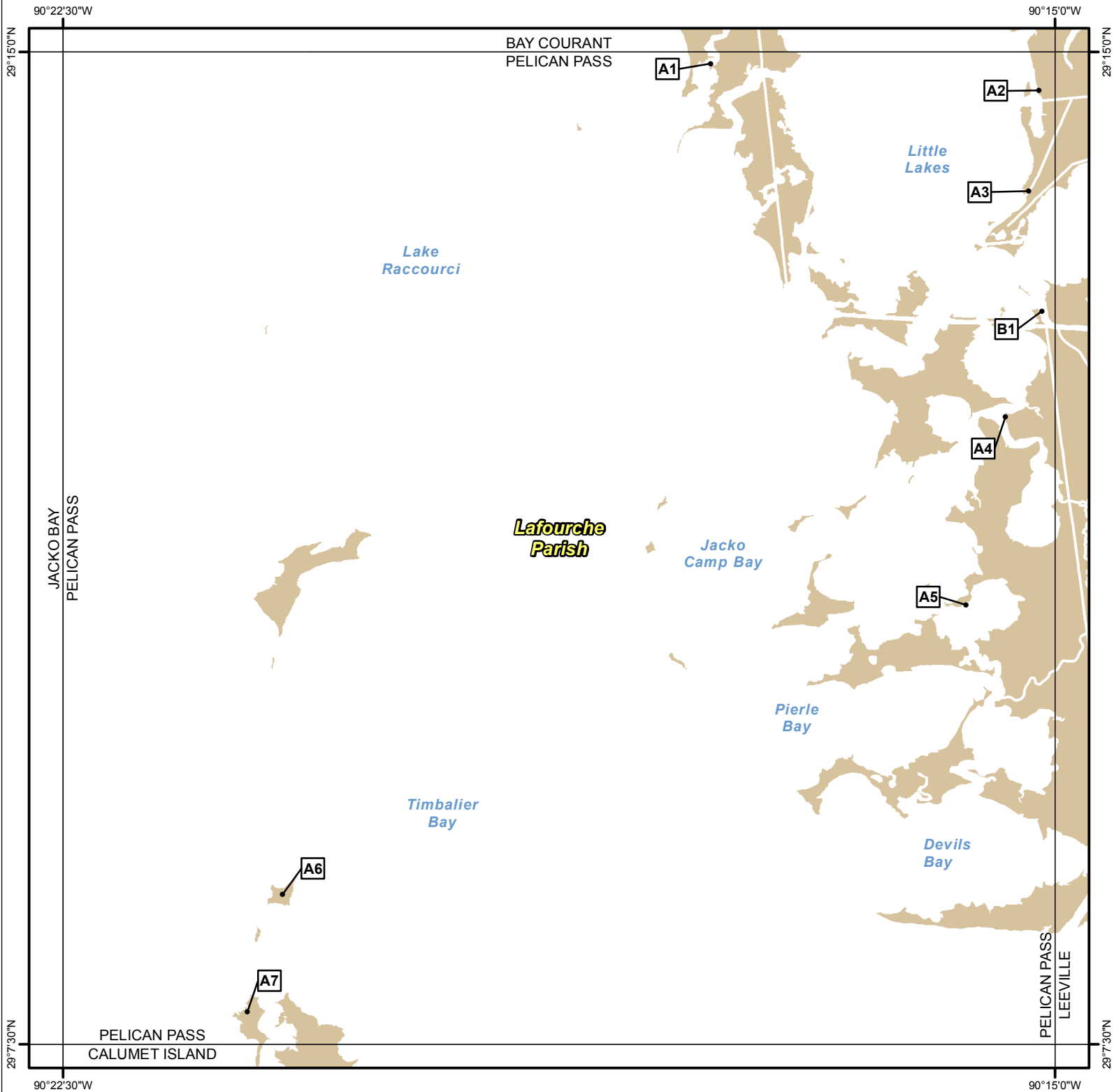
0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Island in Old Lady Lake		Parish:	Terrebonne
		Quad Name:	Jacko Bay
Priority: A		Quad Number:	2909053
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Bird nesting area		Latitude:	29° 12' 33.194" N
		Longitude:	90° 25' 18.561" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Pelican, Tern, and Roseate Spoonbill nesting site	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

PELICAN PASS QUAD

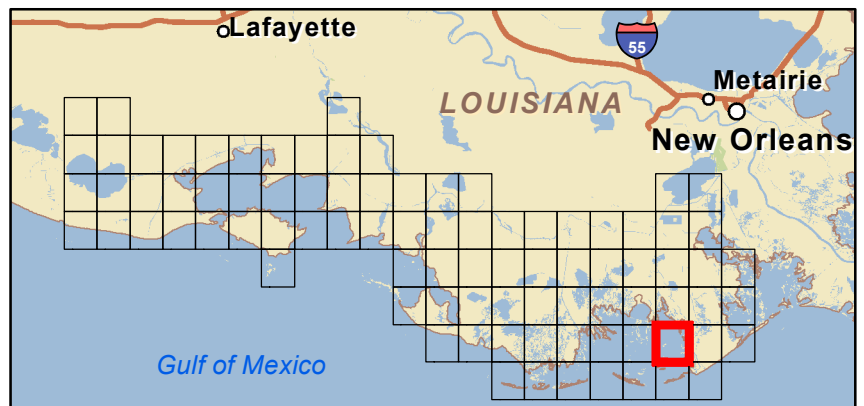


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Mouth of China Bayou		Parish:	Lafourche
		Quad Name:	Pelican Pass
Priority: A		Quad Number:	2909054
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 14' 54.772" N
		Longitude:	90° 17' 36.150" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Southwestern Louisiana Canal (west end)	Parish:	Lafourche	
	Quad Name:	Pelican Pass	
Priority: A	Quad Number:	2909054	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 14' 42.546" N	
Site Description: Sensitive Habitat	Longitude:	90° 15' 07.173" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A3		Location Information	
Name: Canal		Parish:	Lafourche
		Quad Name:	Pelican Pass
Priority:	A	Quad Number:	2909054
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 13' 56.996" N
		Longitude:	90° 15' 11.984" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A4		Location Information	
Name: Picket Bay Island / Bayou south of Picket Bay		Parish:	Lafourche
		Quad Name:	Pelican Pass
Priority: A		Quad Number:	2909054
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Bird Nesting Area		Latitude:	29° 12' 14.502" N
		Longitude:	90° 15' 22.510" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Bird Nesting Area	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

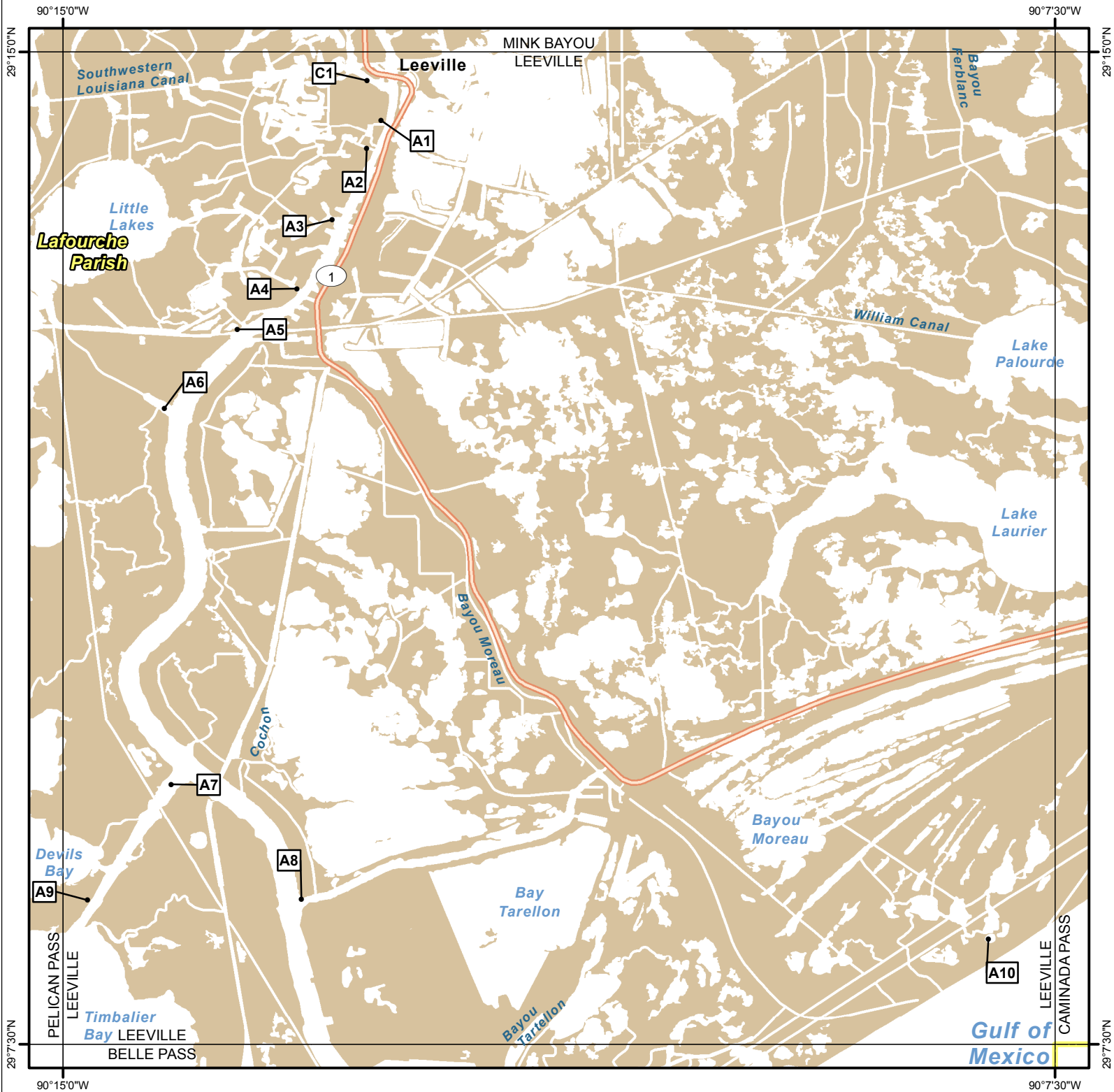
Site Information: A5		Location Information	
Name: Laundry Bay Island in Lake Raccourci		Parish:	Lafourche
		Quad Name:	Pelican Pass
Priority:	A	Quad Number:	2909054
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Bird nesting area		Latitude:	29° 10' 49.130" N
		Longitude:	90° 15' 40.359" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves <1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Bird Nesting Area	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A6		Location Information	
Name: Shallow Bayou / Island in Timbalier Bay		Parish:	Lafourche
		Quad Name:	Pelican Pass
Priority: A		Quad Number:	2909054
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Bird nesting area		Latitude:	29° 08' 37.952" N
		Longitude:	90° 20' 50.395" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A7		Location Information	
Name: Casse-Tete Island		Parish:	Lafourche
		Quad Name:	Pelican Pass
Priority:	A	Quad Number:	2909054
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?:	N
Site Description: Bird nesting area		Latitude:	29° 07' 44.582" N
		Longitude:	90° 21' 06.490" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Bird nesting island	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: B1		Location Information	
Name: Entrance to Grand Canal from Little Lake		Parish:	Lafourche
		Quad Name:	Pelican Pass
Priority: B		Quad Number:	2909054
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Inlet		Latitude:	29° 13' 02.585" N
		Longitude:	90° 15' 05.844" W
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marsh	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Eric Benoit		State Submitter: Lafourche Parish/Sector NOLA/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with points	

LEEVILLE QUAD



Legend

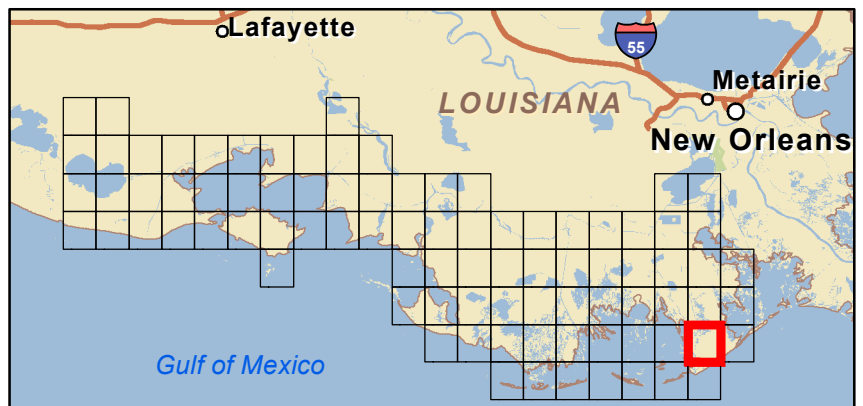
- GRP Sites
- Quad Boundaries
- Parish Boundaries

Kilometers

0 0.5 1 2 3

Miles

0 0.5 1 2 3



Site Information: A1		Location Information	
Name: Bayou off Bayou Lafourche (north)	Parish:	Lafourche	
	Quad Name:	Leeville	
Priority: A	Quad Number:	2909055	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 14' 28.915" N	
Site Description: Sensitive Habitat	Longitude:	90° 12' 35.766" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Bayou off Bayou Lafourche (central north)	Parish:	Lafourche	
	Quad Name:	Leeville	
Priority: A	Quad Number:	2909055	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 14' 16.309" N	
Site Description: Sensitive Habitat	Longitude:	90° 12' 42.356" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Bayou Pierre Et Lee		Parish:	Lafourche
		Quad Name:	Leeville
Priority: A		Quad Number: 2909055	
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 13' 44.008" N
		Longitude:	90° 12' 57.912" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A4		Location Information	
Name: Bayou off Bayou Lafourche (central south)	Parish:	Lafourche	
	Quad Name:	Leeville	
Priority: A	Quad Number:	2909055	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 13' 12.668" N	
Site Description: Sensitive Habitat	Longitude:	90° 13' 13.932" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A5		Location Information	
Name: Bayou off Bayou Lafourche (south)		Parish:	Lafourche
		Quad Name:	Leeville
Priority:	A	Quad Number:	2909055
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 12' 54.269" N
		Longitude:	90° 13' 40.950" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A6		Location Information	
Name: Grebe Canal		Parish:	Lafourche
		Quad Name:	Leeville
Priority: A		Quad Number: 2909055	
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 12' 18.433" N
		Longitude:	90° 14' 13.922" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A7		Location Information	
Name: Havoline Canal at Bayou Lafourche		Parish:	Lafourche
		Quad Name:	Leeville
Priority: A		Quad Number:	2909055
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 09' 27.769" N
		Longitude:	90° 14' 11.010" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

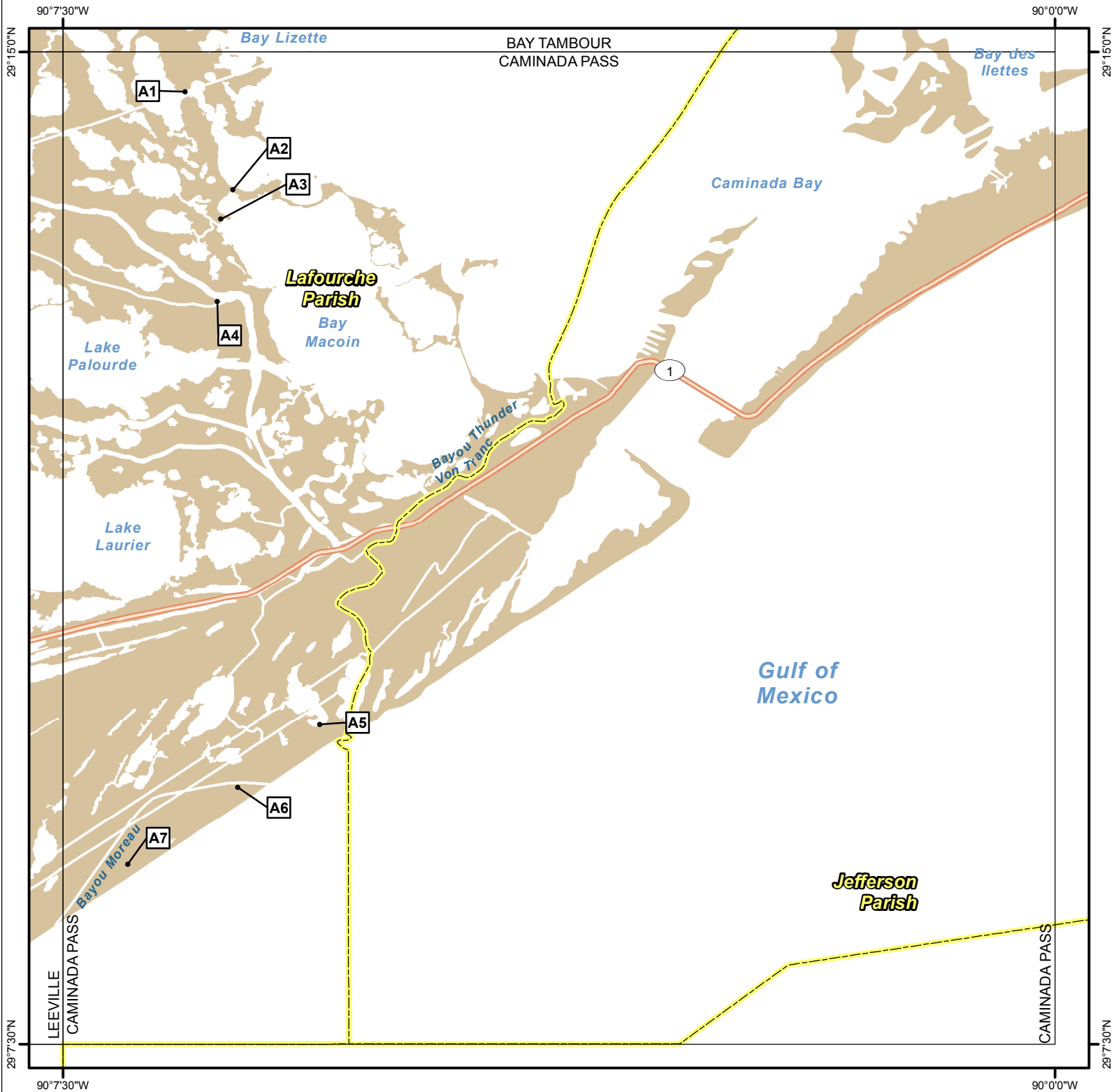
Site Information: A8		Location Information	
Name: Flotation Canal/Bayou Lafourche Intersection	Parish:	Lafourche	
	Quad Name:	Leeville	
Priority: A	Quad Number:	2909055	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 08' 35.714" N	
Site Description: Inlet	Longitude:	90° 13' 11.843" W	
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marsh/Industry	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Eric Benoit		State Submitter: Lafourche Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: A9		Location Information	
Name: Havoline Canal		Parish:	Lafourche
		Quad Name:	Leeville
Priority: A		Quad Number: 2909055	
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 08' 35.365" N
		Longitude:	90° 14' 48.847" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A10		Location Information	
Name: Fourchon Beach / Wisner Tract Shoreline	Parish:	Lafourche	
	Quad Name:	Leeville	
Priority: A	Quad Number:	2909055	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 08' 17.648" N	
Site Description: Sandy beach areas south of site serve as nesting habitat for terns and other ground nesting species	Longitude:	90° 08' 00.247" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 5		Resources At Risk Comments: Sandy beach areas south of site serve as nesting habitat for terns and other ground nesting species	
ESI Description 5: Mixed sand and gravel beaches			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: C1		Location Information	
Name: Southwest Canal		Parish:	Lafourche
		Quad Name:	Leeville
Priority:	C	Quad Number:	2909055
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: West of Bayou Lafourche		Latitude:	29° 14' 47.136" N
		Longitude:	90° 12' 42.046" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Major Waterway	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DNR/CPRA		State Submitter: DNR/CPRA	
Submit Date: 2013.04.16		State Comments:	

CAMINADA PASS QUAD

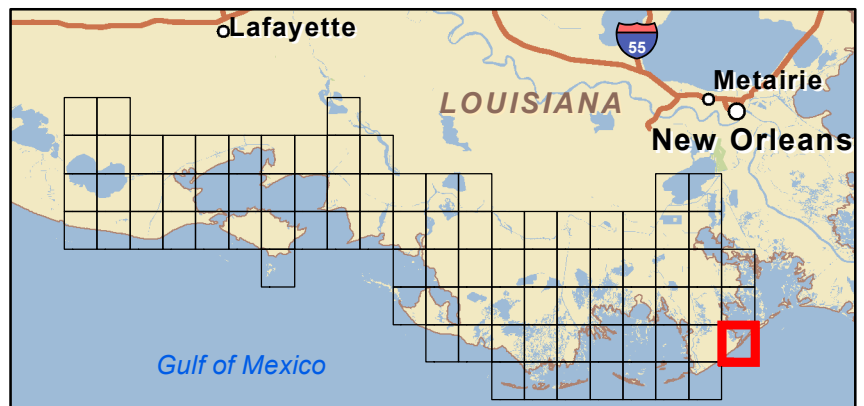


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Pipeline Canal		Parish:	Lafourche
		Quad Name:	Caminada Pass
Priority:	A	Quad Number:	2909056
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: No Longer WMA		Latitude:	29° 14' 41.939" N
		Longitude:	90° 06' 34.592" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A2		Location Information	
Name: Bayou (north) into Caminada Bay		Parish:	Lafourche
		Quad Name:	Caminada Pass
Priority:	A	Quad Number:	2909056
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive habitat		Latitude:	29° 13' 57.503" N
		Longitude:	90° 06' 13.017" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: No Longer WMA	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish/LDEQ	
Submit Date: 2013.04.16		State Comments:	

Site Information: A3		Location Information	
Name: Bayou (south) into Caminada Bay		Parish:	Lafourche
		Quad Name:	Caminada Pass
Priority:	A	Quad Number:	2909056
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive habitat		Latitude:	29° 13' 44.218" N
		Longitude:	90° 06' 18.454" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: No Longer WMA	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

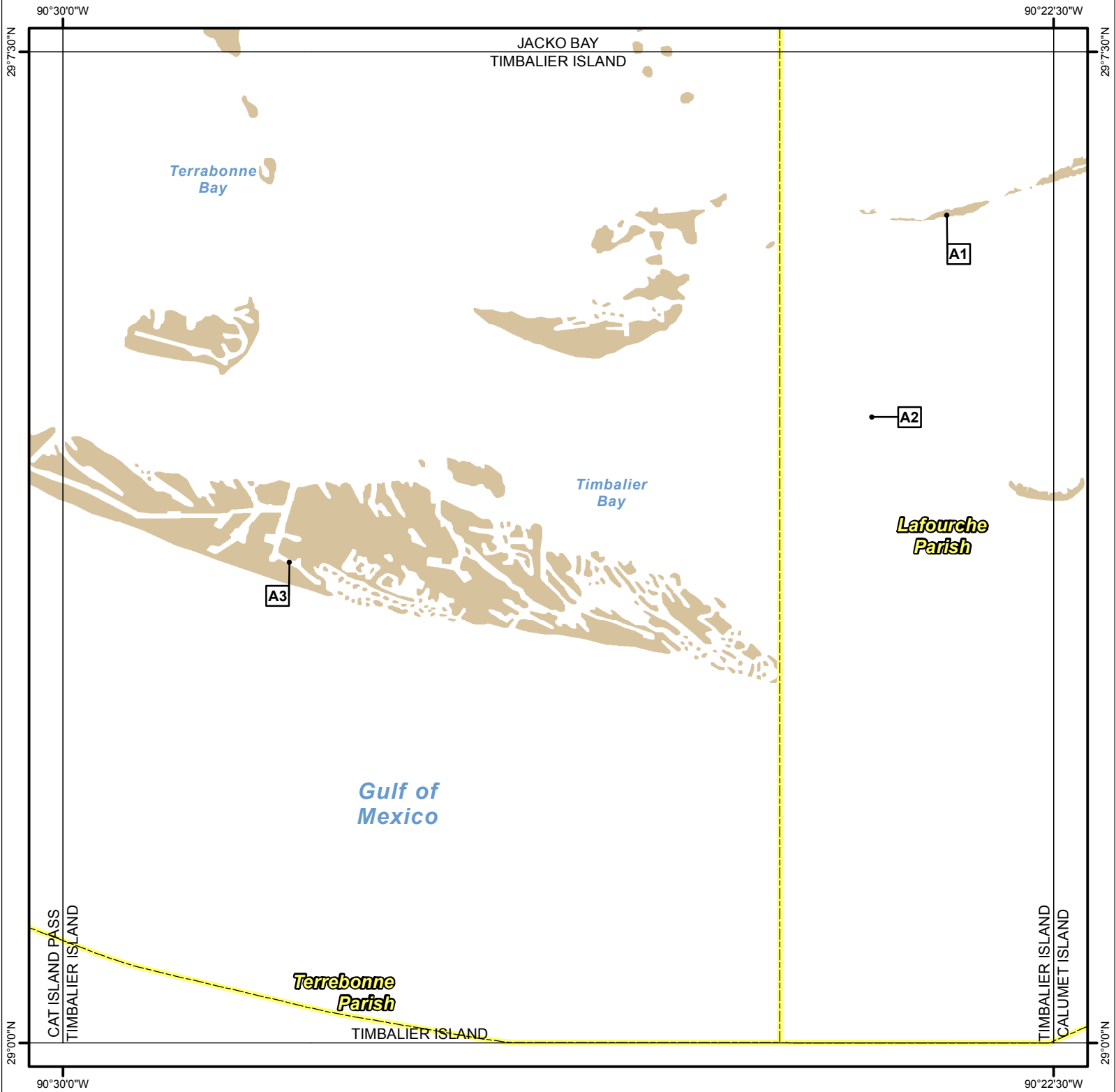
Site Information: A4		Location Information	
Name: Bayou Fer Blanc		Parish:	Lafourche
		Quad Name:	Caminada Pass
Priority:	A	Quad Number:	2909056
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: No Longer WMA		Latitude:	29° 13' 06.769" N
		Longitude:	90° 06' 20.115" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: No Longer WMA	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A5		Location Information	
Name: West Elmers Island (east)/ Pass on Elmers Island		Parish:	Lafourche
		Quad Name:	Caminada Pass
Priority: A		Quad Number:	2909056
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 09' 55.020" N
Site Description: State Refuge part of Elmer's Island Refuge		Longitude:	90° 05' 33.484" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Piping plover habitat and nesting habitat for terns and other ground nesting species	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A6		Location Information	
Name: West Elmers Island (central) / Wisner Tract 2	Parish:	Lafourche	
	Quad Name:	Caminada Pass	
Priority: A	Quad Number:	2909056	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 09' 26.449" N	
Site Description: Beach Bird Nesting Area	Longitude:	90° 06' 10.638" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 3A		Resources At Risk Comments:	
ESI Description 3A: Fine- to medium-grained sand beaches			
		Beach Bird Nesting Area	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

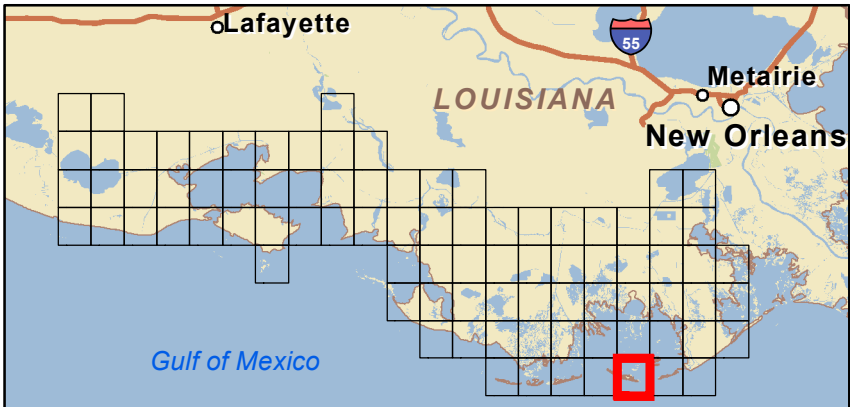
Site Information: A7		Location Information	
Name: West Elmers Island (west) / Wisner Tract		Parish:	Lafourche
		Quad Name:	Caminada Pass
Priority:	A	Quad Number:	2909056
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)? : N	
Site Description: Beach Bird Nesting Area		Latitude:	29° 08' 51.748" N
		Longitude:	90° 07' 00.572" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 3A		Resources At Risk Comments:	
ESI Description 3A: Fine- to medium-grained sand beaches			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

TIMBALIER ISLAND QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

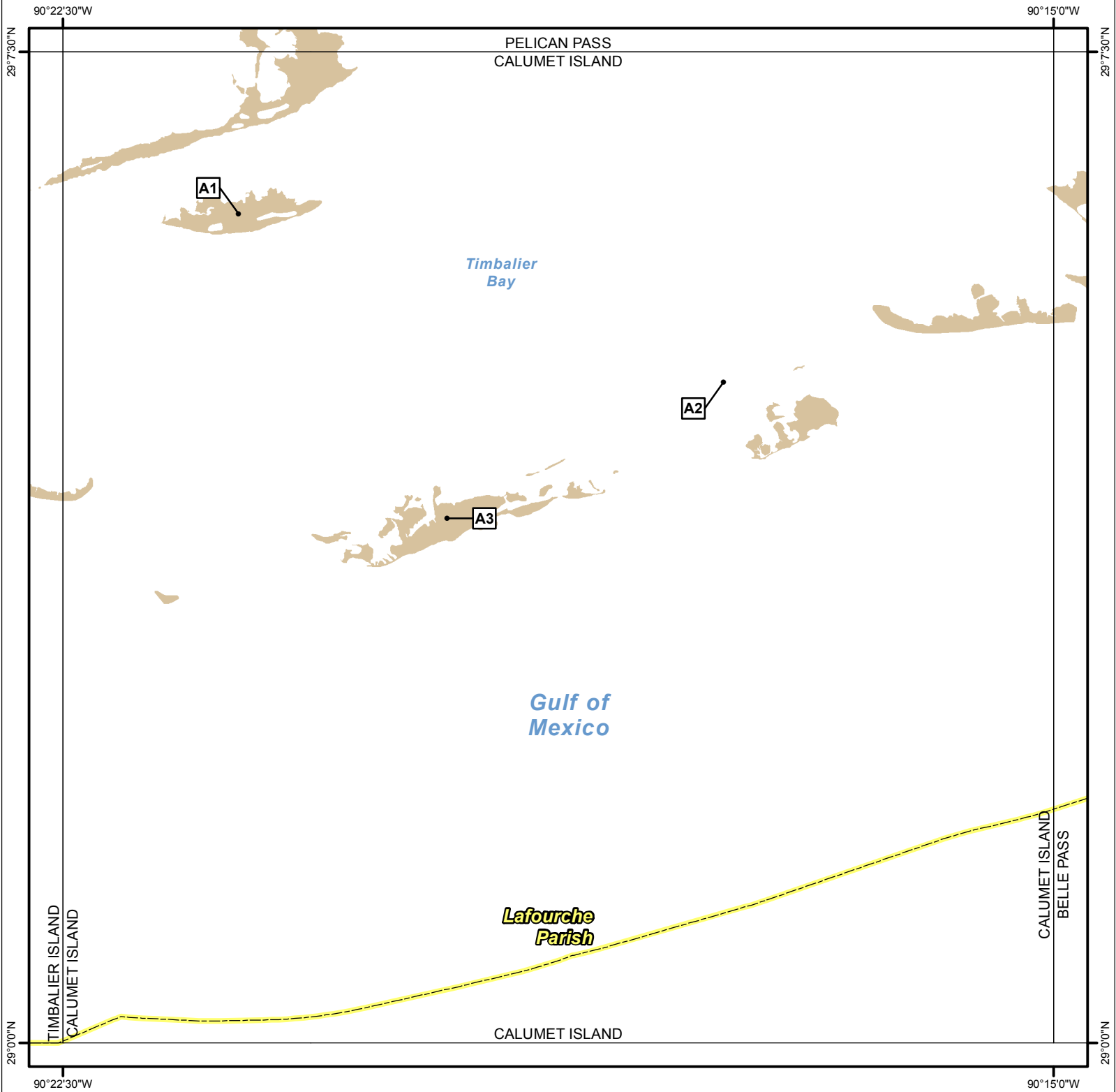


Site Information: A1		Location Information	
Name: West Casse-Tete Island		Parish:	Lafourche
		Quad Name:	Timbalier Island
Priority: A		Quad Number:	2909061
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Bird nesting area		Latitude:	29° 06' 16.008" N
		Longitude:	90° 23' 18.347" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A/10D/2A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes / 10D: Scrub-shrub wetlands / 2A: Exposed Wave-cut Platform in clay			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A2		Location Information	
Name: East Timbalier Island (west)		Parish:	Lafourche
		Quad Name:	Timbalier Island
Priority:	A	Quad Number:	2909061
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Beach Bird Nesting Area		Latitude:	29° 04' 44.263" N
		Longitude:	90° 23' 52.473" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
Beach Bird Nesting Area			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A3		Location Information	
Name: Timbalier Island (east)	Parish:	Terrebonne	
	Quad Name:	Timbalier Island	
Priority: A	Quad Number:	2909061	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 03' 38.206" N	
Site Description: Pelican and shorebird nesting area, & critical piping plover habitat	Longitude:	90° 28' 17.262" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 3A		Resources At Risk Comments: Pelican and shorebird nesting area, & critical piping plover habitat	
ESI Description 3A: Fine- to medium-grained sand beaches			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

CALUMET ISLAND QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

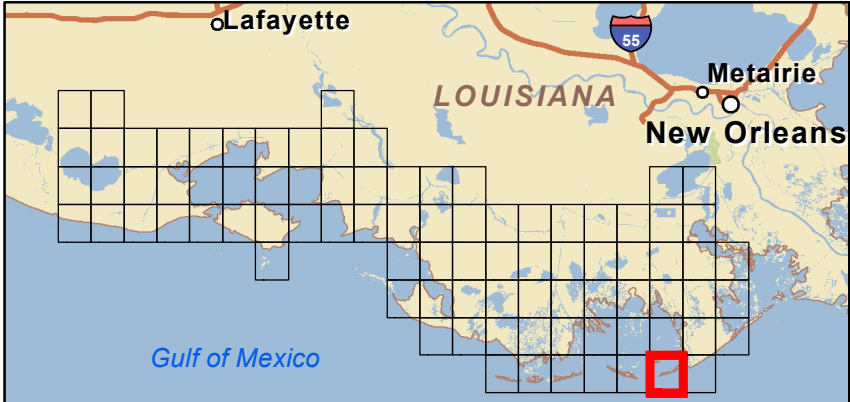
Kilometers

0 0.5 1 2 3

Miles

0 0.5 1 2 3

N

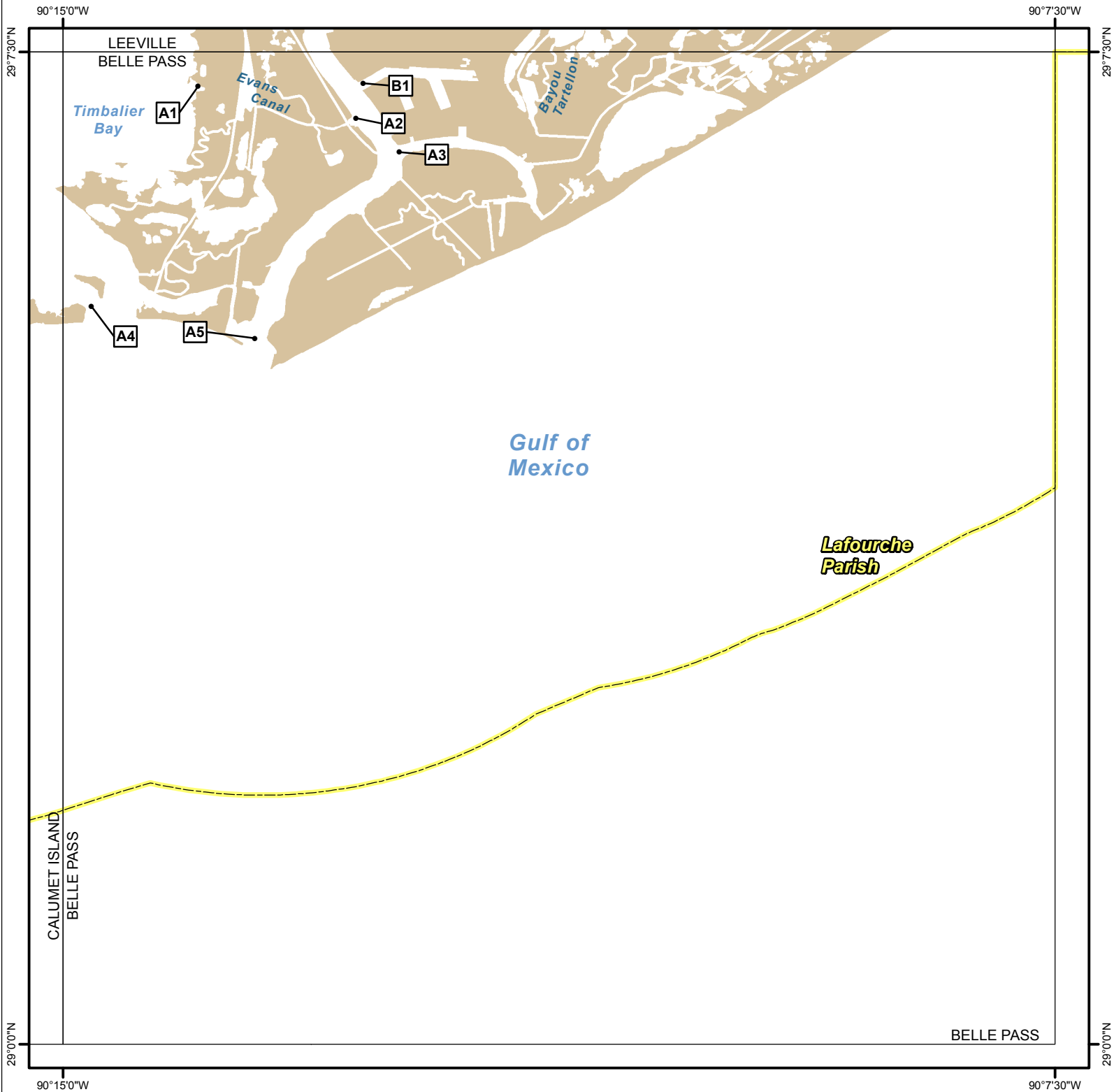


Site Information: A1		Location Information	
Name: Caulmet Island		Parish:	Lafourche
		Quad Name:	Calumet Island
Priority: A		Quad Number:	2909062
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Bird nesting area		Latitude:	29° 06' 16.548" N
		Longitude:	90° 21' 10.321" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Bird nesting habitat			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A2		Location Information	
Name: East Timbalier Island (far east)	Parish:	Lafourche	
	Quad Name:	Calumet Island	
Priority: A	Quad Number:	2909062	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 05' 00.050" N	
Site Description: Bird nesting area	Longitude:	90° 17' 29.956" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Bird nesting habitat - terns, gulls, skimmers, and wading birds; piping plover habitat	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A3		Location Information	
Name: East Timbalier Island		Parish:	Lafourche
		Quad Name:	Calumet Island
Priority: A		Quad Number:	2909062
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Bird nesting area		Latitude:	29° 03' 58.237" N
		Longitude:	90° 19' 35.603" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10D/7		Resources At Risk Comments:	
ESI Description 10D: Scrub-shrub wetlands / 7: Exposed tidal flats			
		Bird nesting habitat - terns, gulls, skimmers, and wading birds; piping plover habitat	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

BELLE PASS QUAD



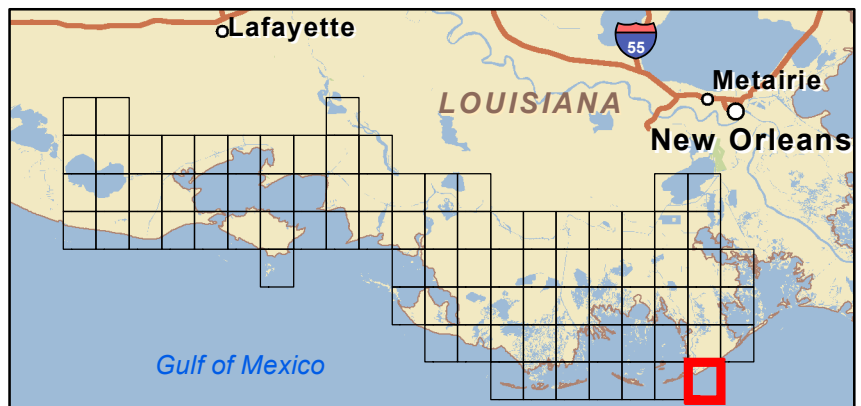
Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Evans Canal (west)		Parish:	Lafourche
		Quad Name:	Belle Pass
Priority: A		Quad Number: 2909063	
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 07' 14.350" N
		Longitude:	90° 13' 58.694" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Evans Canal (east)		Parish:	Lafourche
		Quad Name:	Belle Pass
Priority:	A	Quad Number:	2909063
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 07' 00.108" N
		Longitude:	90° 12' 47.234" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A3		Location Information	
Name: Pass Fourchon		Parish:	Lafourche
		Quad Name:	Belle Pass
Priority: A		Quad Number:	2909063
Site Alias: None		Mile Marker:	
Site Description: Inlet		Managed (Y/N)?:	Y - Wildlife Area
		Latitude:	29° 06' 44.523" N
		Longitude:	90° 12' 27.537" W
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments:	
ESI Description 10D: Scrub-shrub wetlands			
		Industry	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Eric Benoit		State Submitter: Lafourche Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

Site Information: A4		Location Information	
Name: West Belle Pass		Parish:	Lafourche
		Quad Name:	Belle Pass
Priority: A		Quad Number:	2909063
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Beach Bird Nesting Area		Latitude:	29° 05' 34.704" N
		Longitude:	90° 14' 47.196" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 4/2A		Resources At Risk Comments:	
ESI Description 4: Coarse-grained sand beaches / 2A: Exposed Wave-cut Platform in clay			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A5		Location Information	
Name: Bayou Lafourche at GOM		Parish:	Lafourche
		Quad Name:	Belle Pass
Priority:	A	Quad Number:	2909063
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?:	N
Site Description: Sensitive habitat		Latitude:	29° 05' 20.268" N
		Longitude:	90° 13' 32.962" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 1000-1500 ft			
Resources At Risk			
ESI Code: 3A		Resources At Risk Comments:	
ESI Description 3A: Fine- to medium-grained sand beaches			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: B1		Location Information	
Name: Port Fourchon	Parish:	Lafourche	
	Quad Name:	Belle Pass	
Priority: B	Quad Number:	2909063	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 07' 15.770" N	
Site Description: Industrial Area	Longitude:	90° 12' 43.896" W	
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Industrial Area	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Industrial Area	

Appendix A: GRP Content Contributors

Captain Peter Gautier	Federal On-Scene Coordinator
Captain David McClellan	Federal On-Scene Coordinator
Captain Jonathan Burton	Federal On-Scene Coordinator
Brian Wynn	Louisiana Oil Spill Coordinators Office
Karolien Debusschere	Louisiana Oil Spill Coordinators Office
David Gisclair	Louisiana Oil Spill Coordinators Office
Rebecca Broussard	Vermilion Parish OEP
Chris Boudreaux	Lafourche Parish OEP
Duval Arthur	Saint Mary Parish OEP
Earl Eues	Terrebonne Parish OEP
Prescott Marshall	Iberia Parish OEP
Todd Folse	Coastal Protection and Restoration Authority
Ann Howard	Coastal Protection and Restoration Authority
Chip McGimsey	State Historic Preservation Officer
Kyle Jellison	National Oceanic and Atmospheric Administration
Jeff Dauzat	Louisiana Department of Environmental Quality
Laura Carver	Louisiana Department of Wildlife and Fisheries
Nicholas LaCroix	Louisiana Department of Natural Resources
LCDR Keith Smith	U.S. Coast Guard
LCDR Chance Greene	U.S. Coast Guard
LCDR Lushan Hannah	U.S. Coast Guard
Brian Black	U.S. Coast Guard
Tanner Kneese	The Response Group
Fernando Terceros	The Response Group
Sarah Clavo	The Response Group
Terry Posey	Oil Mop Environmental Services
Ronald Johnson	Oil Mop Environmental Services
Cliff Collins	Oil Mop Environmental Services

Appendix B: GRP Comments/Corrections/Suggestions

If you have any questions regarding this document or find any errors, please notify the following agency:

U.S. Coast Guard

MSU Morgan City

Phone number: (985) 380-5330

Internet/E-mail Address: brian.k.black@uscg.mil

Address: Commander
U.S. Coast Guard
800 David Drive
Morgan City, LA 70380
Attn: Brian Black

Comments/Corrections/Suggestions Form

Directions: Fill in your name, address, agency, and phone number. Fill in the blanks regarding the location of information in the plan being commented on. Make Comments in space provided. Add extra sheets as necessary.

Name:	_____	Title:	_____	Agency:	_____
Address:	_____				
City:	_____	State/Province:	___	Zip/Postal Code:	_____
Phone:	(____)	E-Mail:	_____		

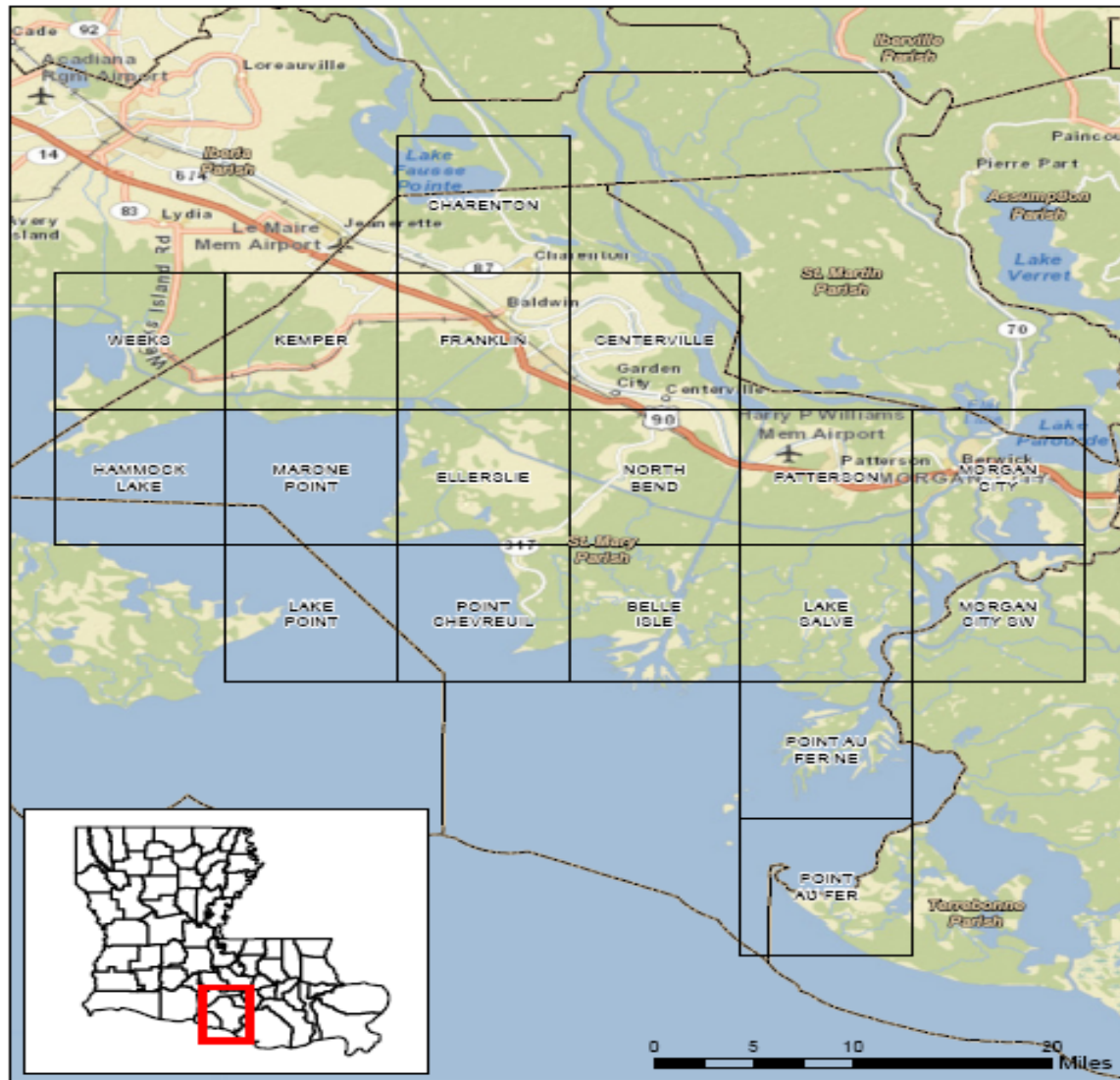
Site:	_____	Page:	_____
Location on page (Chapter, section, paragraph) (e.g. 2.1, paragraph 3):			

Comments:	_____

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2013

Geographic Response Plan Saint Mary Parish



Southeast Louisiana
Area Contingency Plan
U. S. Coast Guard
MSU Morgan City
800 David Drive
Morgan City, LA 70380



Saint Mary Parish GRP Signature Page

A blue ink signature of David McClellan, written in a cursive style, positioned above a horizontal line.

David McClellan
Captain, US Coast Guard
Commander, MSU Morgan City
Federal On-Scene Coordinator, Morgan City

A blue ink signature of Brian Wynne, written in a cursive style, positioned above a horizontal line.

Brian Wynne
Acting Louisiana Oil Spill Coordinator

A blue ink signature of Paul P. Naquin, Jr., written in a cursive style, positioned above a horizontal line.

Paul P. Naquin, Jr.
Saint Mary Parish President

Record of Changes

Date	Change Number	Summary of Changes	Initials of person making changes

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Saint Mary Parish Geographic Response Plan

Introduction

This Geographic Response Plan (GRP) is an annex to the Southeast Louisiana Area Contingency Plan (SOUTHEAST LOUISIANA ACP) and a key element of both facility and vessel contingency plans. This GRP has two main functions:

From a planning perspective, the GRP provides a description of sensitive biological, cultural, and economic resources that must be addressed to be in compliance with:

- The National Oil and Hazardous Substance Pollution Contingency Plan (NCP, 40 CFR Part 300.210(3)(i)). Area Contingency Plans are required to describe areas of special economic and environmental importance that could be impacted during an oil spill.
- The National Historic Preservation Act of 1966 contains applicable, relevant and appropriate requirements. The GRPs also address sensitive historic and prehistoric resources.

From an operational perspective, the GRP guides responders in the first 24-48 hours of an oil spill by:

- Providing a prioritized list of tactical response strategies to be implemented during the early hours of an oil spill (usually before the formation of the Unified Command);
- Providing detailed information for booming strategies that could be utilized to minimize impacts to predetermined sensitive resources.

Once the Unified Command is formed, additional operational strategies and tactics will be relayed to the field in the form of the ICS-204 work assignment sheets.

Because the GRP is the primary tool used during an initial phase of the response and fairly broad in their scope, they are not intended to minimize impacts to all possible sensitive areas that could be affected by an oil spill. Likewise, the GRPs are not intended to be an exhaustive list of all the tactical strategies that could, or should, be implemented during a spill.

Scope

This Geographic Response Plan (GRP) is intended to help the first responders of an oil discharge or hazardous substance release avoiding the initial confusion that generally accompanies any incident. This document serves as the federal and state on-scene-coordinators “guidance” during an incident in the area covered by this GRP (see Section 2 for area covered). As such it has been approved by the U.S. Coast Guard MSU Morgan City, the Louisiana Oil Spill Coordinator’s Office, and Saint Mary Parish. Changes to this document are expected as testing is conducted through drills, site visits, and actual use in an incident. To submit comments, corrections, or suggestions please refer to Appendix B.

The scope of this GRP is to identify sensitive sites to be considered for protection in the first 24 to 48 hours of an incident and the generic response strategy for this site considering unique characteristics, noted hydrology and climatic considerations. This index is not all encompassing as sites not identified in this index may need to be evaluated for protection as an incident progresses.

GRPs only address protection of sensitive public resources. It is the responsibility of private resource owners and/or potentially liable parties to address protection of private resources (such as commercial marina and private water intakes).

Development

This Index has been developed for the Coastal Zone, as defined in the National Contingency Plan (40 CFR Part 300) for Saint Mary Parish. It is prepared through the efforts and cooperation of Louisiana State Trustee Agencies, Parish Representatives, and Federal Trustee Agencies, other federal and state agencies, response organizations, and local emergency responders. This Index was developed through workshops involving federal, state, and local stakeholders. Workshop participants identified resources which require protection and developed operational strategies.

Following the workshops, the data gathered was processed and reproduced in the form of maps and matrices which appear in Chapter 3. The maps were generated using ArcGIS, and the tables were created using Microsoft Access.

The first goal of a GRP is to identify resources needing protection; response resources needed; tribal and local response community contacts; and local conditions that may affect response strategies.

Secondly, response strategies were developed based on the sensitive resources noted hydrology and climatic considerations. Individual response strategies identify the appropriate boom implementation.

Draft maps and matrices were sent out for review and consideration of strategy viability.

Verification at local, state, and federal levels was conducted and changes proposed by the participants were included in a semi-final draft, which was offered for final review.

Finally, the final GRP was compiled along with site description, reference maps, and information to support logistical needs.

Guiding Principles of the GRP

Safety and health of the responders always takes precedence over the protection of sensitive environmental resources.

Source control and containment are always a **HIGER** priority over GRP strategy deployments.

The protection strategies in the GRPs have been designed for the use with persistent oils and may not be suitable for other petroleum or hazardous substances.

Environmental conditions (winds, currents, and tides), together with the physical limitations of existing spill response technology, may preclude the effective protection of some areas.

Once a coordinated response has been established during an oil spill incident, booming strategy selection and prioritization are refined and supplemented based on real-time assessments. The UC has the authority to supersede the strategies proposed in the GRPs.

Response personnel may find it necessary to deviate from the exact details provided for deploying a particular strategy. An onsite evaluation of actual conditions is often needed to determine whether a strategy is safe to deploy, whether it will be effective under existing environmental conditions, or effective for the particular type of oil involved. Therefore, field personnel should use their best judgment to modify existing strategies based on real-time conditions and notify command accordingly. Field personnel are also encouraged to notify the command post regarding opportunities for deployment additional strategies that might be used to take advantage of incident-specific conditions.

The GRPs Include the Following Types of Response Strategies:

Collection Booming with On-Water Recovery: Deploying various types of boom to collect oil for mechanical removal using sorbent materials, vacuum trucks, or near shore skimming devices;

Exclusion Booming: Deploying various types of boom to reduce oiling in sensitive areas;

Deflection Booming: Deploying various types of boom to divert oil away from a sensitive area and/or divert oil toward a collection point.

GRPs Do Not Include:

In-Situ Burning: Burning oil on the water; usually requires containment by fire-resistant boom. Chapter 9000, Appendix C for additional policy on in-situ burning use;

Dispersants: Applying chemical agents, usually by aircraft, to aid in breaking up surface slicks and dispersing oil within the water column. See Chapter 9000, Appendix D for policy on dispersant use;

Shoreline Cleanup: Physical removal or chemical treatment of stranded oil. See Chapter 9000, Appendix G for the NOAA Shoreline Countermeasure Manual for Tropical Coastal Environments and Appendix F Oil Spill Best Management Practices for guidance on shoreline cleanup;

Open-Water Mechanical Recovery: Physical removal of oil using boats and/or vessels specifically outfitted with collection and separation equipment.

No Action: Appropriate when weather, sea, or other conditions make deployments unsafe and/or infeasible and when response actions or site access will cause further environmental damage (e.g., wetlands)

Sensitive Resources Addressed by GRPs

The NCP, 40 CFR Part 300.120(3)(i) requires that Area Committees identify and prioritize sensitive areas requiring protection. In the SOUTHEAST LOUISIANA ACP, sensitive areas are broken into three main categories described below.

Environmentally Sensitive Resources

Key natural resource areas are identified using a wide range of data provided by resource trustees, tribes, plan holders, spill response organizations, contingency plan holders, and other interested stakeholders during the process of GRP development and review. The Environmental Sensitivity Index (ESI) maps developed by NOAA are one example of the type of natural resource information available (<http://response.restoration.noaa.gov>). When appropriate, tactical response strategies are designed for implementation during the early hours of an oil spill to reduce impacts to those areas, and trajectory models or other assessment techniques are used to establish initial response priorities.

Historically or Culturally Sensitive Resources

Information on sensitive historic and cultural sites is coordinated through contact with the various tribal governments, State Historic Preservation Office (SHPO), and the United

States Department of the Interior may assist as needed. Due to the sensitive nature of this information, the specifics regarding the location and nature of such sites are not included in the GRP documents. However, in order to ensure that tactical response strategies do not inadvertently harm historical and culturally sensitive sites, historic preservation specialists are consulted to review the GRP documents prior to finalization. The Louisiana SHPO can be contacted at:

Physical Address:
State Historic Preservation Office
Division of Archaeology
Capital Annex Building
1051 North Third Street

Mailing Address:
P.O. Box 44247
Baton Rouge LA, 70804
Phone: (225) 342-8160 (general office)
(225) 219-4598 (Division of Archaeology office)
Fax: (225) 342-4480

Socio-Economically Sensitive Resources

Economically sensitive areas are facilities or locations that rely on a body of water to be economically viable and that could be severely impacted by an oil spill. Economically sensitive areas are broken down into three separate categories: Critical infrastructure, water dependent commercial and recreational areas. Information on economic resources will be gathered for inclusion as an appendix to the GRPs.

Evaluation Criteria for GRPs

Specific strategies for response to spills in the sensitive areas are detailed in the GRPs. Below is a list of some of the biological, cultural, and booming criteria used to determine whether it is appropriate to develop and maintain GRP strategies at specific locations. These criteria are not intended to be exhaustive, or ranked in order of priority, they are meant to help frame the evaluation of GRP strategies.

Key Criteria for Biological Sites, Species, and Habitats of Concern

What is the expected recovery time for habitats of fish and wildlife resources?
What is the residence time of the oil?

Substrate-

- What is the exposure risk?
- What is the likelihood that a habitat or species will be exposed to direct contact with surface oil or to dispersed/dissolved oil in the water column?
- Given the substrate, is clean-up feasible?

Habitat quantity, quality, and pattern-

- Is the impacted habitat considered scarce at local, regional, or statewide scales?
- Is the size of the impacted habitat significant compared to other sites in the region?
- Is the species diversity or endemism high? Is this true year-round or is it seasonal?
- Is abundance of fish and/or wildlife high? Is this true year-round or is it seasonal?
- What life stages of organisms are present?
- Is the habitat important to threatened or endangered species?
- What is the status of the habitat's integrity (i.e., is the area undeveloped or highly altered?)
- Does the habitat have a special designation or status (i.e., Marine Protected Area, biological research area, restoration site, etc.)?
- Are the habitat and/or its associated fish and wildlife resources especially susceptible to injury by oil?

Key Criteria for Archeological and Cultural Sites of Concern

Deployment- Does the act of deploying the GRP strategy threaten the archeological site (anchoring the boom, parking vehicles, etc.)

Purpose- Will implementing the GRP strategy type (collection, diversion, deflection) negatively impact the site?

Review- If either of the above is possible, then a review of the site records is necessary to determine the exact location and sensitivity of the site. If the site records are old or insufficient, then a field visit is necessary.

Significant developments- Are there significant developments that may make any concern about the impacts irrelevant (housing developments etc.)?

Additional criteria for archaeological sites without existing GRP strategies

- Impacts- Does the site extend below the high tide line?
- Vulnerability- Will it be damaged or destroyed if oil were to hit the area (or by the placement of response equipment in the area, e.g., vacuum trucks, etc.)?
- Integrity- Has the site been disturbed yet, or is it still intact?
- Historic Importance- Is the site nominated for, or already on, the National Register of Historic Places or the State equivalent?
- Tribal Importance- Does the site hold special tribal importance?
- Parish Importance- Does the site hold special Parish importance?
- Feasibility- Is booming the site feasible?

Key Criteria for Socio-Economic Sites of Concern

Strictly economic resources are designated as the third priority for dedication of oil spill response resources, following human health and safety and environmental resources. The designation of economic resources is highly dependent upon the priorities of the local government. Each GRP contains detailed information of economic sites in each Parish or Geographical Response Area. This information includes geographic locations of resources, a brief description of the resource at risk, contact names and numbers, and the priority response ranking.

Key Criteria for the Use of Boom

Effectiveness- Is booming the most effective strategy for reducing oil spill impacts? Would other alternatives such as a phone call to an operator, shutting off a water intake, or closing a tidal gate be as effective?

Safety- Determine if safety of human responder will be put at risk for limited likelihood of strategy success.

Strategy- Determine what type of booming strategy would be the most effective at reducing oil impacts to the resource under prevailing conditions (collection, deflection, or exclusion).

Evaluation- Evaluate the site for advantageous characteristics based on:

- Anchoring substrate. Does the substrate allow responders to easily anchor the boom?
- Accessibility. Can the site be easily accessed by vessel or vehicles?
- Time to arrive on scene. How long will it take to get to the site?
- Potential for oiling. Is the site located near shipping activity or fueling operations?
- Beach substrate. Used Environmental Sensitivity Index (ESI) or Shore-Zone classification to determine vulnerability to oiling and likely oil longevity based on the shoreline type.
- Type and quantity of boom. How many sections of boom and what size anchors will be required for deployment? What is the anchoring depth? What type of boom tending will be required? Will this tending be complicated by the amount of time it takes to arrive at the site or the difficulty of access? Is the amount of boom required reasonable (< 1000 ft)?
- Prevailing weather- especially wind and waves. Is a booming strategy realistic for prevailing conditions?
- Tidal influence. At extreme lows will there be nothing but mud flats (very difficult to tend boom when it is stuck in the mud) or at extreme highs will the entire face of a coastal marsh be underwater (thus exposing the entire perimeter to oil)?
- Influence of currents. What velocities can be expected?
- Feasibility. Depends on: Boom size, boom length, the number and size of anchors, the capability of the recruited workboats (to tow boom, set and recover anchors, shelter boat crews, carry boom and associated equipment), the experience of the boat crew, and the effectiveness of the anchoring system (both on shore and in water).

Prioritization

Through the priority evaluation process, an area is broken down by type (human health and safety, environmental, economic and cultural) and sensitivity (high, medium, low). This evaluation process focuses on the sensitivities of areas and not jurisdictional boundaries. Once all areas have been evaluated and broken down, three levels of priority are generally all that is needed for pre-spill planning:

A – Protect First

B – Protect After A Areas

C – Protect After B Areas

The following prioritizations were determined by the Geographic Response Plan subcommittee:

Priority A

- Public drinking water intakes
- Industrial water intakes with public health and safety impacts (e.g. public utility intake, supported by state managed early warning network on MISS RIVER)
- Tidal Inlets – Primary Tidal Inlets that are protectable
- Secondary inlets inside bays that connect to extensive sensitive areas
- Breaches, wash-overs and other low areas where oil can enter sensitive habitats
- Exceptional/Highly sensitive wetlands with high biodiversity site (e.g. NWR, State refuges)
 - Important Bird Areas
 - Bird nesting islands (e.g. Raccoon Island, Queen Bess Island, Brush Island)
 - Other bird nesting concentrations including T&E species
 - Seasonal bird concentration areas onshore (e.g. South Pass)
 - Freshwater Diversion (Manmade and Natural)

Priority B

- Exceptional Oyster beds in the intertidal
- Seagrass Beds in less than 1 meter of water
- High use recreational sites
- Important Industrial Areas (e.g. fishing ports, marinas, industrial corridors)
- Other water intakes not specified in Priority A
- Cultural/Historical sites of concern (e.g. contact SHPO/Tribes)

Priority C

- Small tidal channels and canal openings
- Sheltered tidal flats
- Seagrass beds in greater than 1 meter of water
- Aquaculture sites and oyster lease areas
- Wetland restoration areas
- Other industrial areas
- Areas identified by local authorities not previously noted in Priority A or B

The following areas were not included due to the initial protection difficulty:

- Open gulf beaches
- Exposed wetland shorelines (exposed to waves and currents) (as described in Appendix G)
- Exposed rip-rap

Strategy Selection

Booming strategy recommendations were developed using local knowledge, scientific data, and known operational uses and limitation of common oil spill response equipment. Utilizing publications, such as the Exxon Mobil Oil Spill Response Manual and the National Oceanic Atmospheric Administration's Characteristic Coastal Habitats Choosing Spill Response Alternatives) a quick reference job-aid was developed to assist with the selection of an appropriate site given the noted hydrology and climatic considerations. This process applies a consistent and standard analysis of each site. All water body openings, cuts, and lengths between two points of land greater than one thousand feet (1,000 ft) received a strategy of Deferred Action due to limited resources available during initial response. All sites related to infrastructure or private resources received a strategy of Notification to Site Manager. However, these sites are considered sensitive and should be given due consideration for more defensive response actions by the Incident Command.

GRP Strategy Selection Job-Aid

Water Body Type	Current/Wave Action	Shoreline	Strategy
Lake or Pond		ESI 1-6	Containment booming/collection point
		ESI 7-10	Exclusion booming
Rivers or Large Streams 1.6 feet (0.5) deep	Currents <1 knot	ESI 1-6	Containment booming/collection point
		ESI 7-10	Exclusion booming
	Currents 1-2 knots	ESI 1-6	Diversion booming to collection point
		ESI 7-10	Deflection booming
	Currents >2 knots	ESI 1-6	Multi-layer diversion booming to collection point
		ESI 7-10	Multi-layer deflection booming
Small streams <33 ft wide (10m) and 1.6 ft (0.5 m) deep	Currents <1 knot	ESI 1-6	Containment booming/collection point
		ESI 7-10	Exclusion booming
	Currents 1-2 knots	ESI 1-6	Diversion booming to collection point
		ESI 7-10	Deflection booming
	Currents >2 knots	ESI 1-6	Multi-layer diversion booming to collection point
		ESI 7-10	Multi-layer deflection booming
Shallow Rivers or streams	Currents 0-2 knots	ESI 1-6	Containment booming/collection point
		ESI 7-10	Diversion booming to collection point
Straight Coastline with Sensitive Areas	Breaking waves <1.5 ft (0.5m)	ESI 1-10	Diversion boom up current of sensitive area
	Breaking waves > 1.5 ft		Deferred Action
Entrance to Bays, Harbors, Lagoons, and Estuaries	Breaking waves <1.5 ft (0.5m) and currents < 1 kt (0.5 m/s)	ESI 1-10	Exclusion booming
	Breaking waves <1.5 ft (0.5m) and currents >1 kt (0.5 m/s)	ESI 1-6	Diversion booming to collection point
		ESI 7-10	Deflection booming
	Breaking waves >1.5 ft (0.5m)	ESI 1-10	Deferred Action
Narrow Channel/ Narrow Tidal Channel	Current <1 kt (0.5 m/s)	ESI 1-10	Exclusion Booming
	Current >1 kt (0.5 m/s)	ESI 1-6	Diversion booming with collection point
		ESI 7-10	Deflection booming
Open Water	Breaking Waves < 1.5 ft	N/A	Exclusion Booming
	Breaking waves >1.5 ft		Deferred Action

NOTE: All openings, cuts, and lengths between two points of land greater than one thousand feet (1,000 ft) will receive a strategy of **Deferred Action** due to limited resources for initial response.

All sites related to infrastructure or private resources will receive a strategy of **Notification to Site Manager**.

Southeast Louisiana Area Contingency Plan

Sensitive Site Index

The following compilation of sensitive sites is a result of the hard work of Morgan City Area Stakeholders. The sites contained within this report will play a significant role in the development of the Geographic Response Plans, a geographic based response plan to oil and hazardous material releases.

Any modifications or additions to this set of data is welcomed and encouraged. Please contact the USCG MSU Morgan City Contingency Planning Specialist to make any submissions.

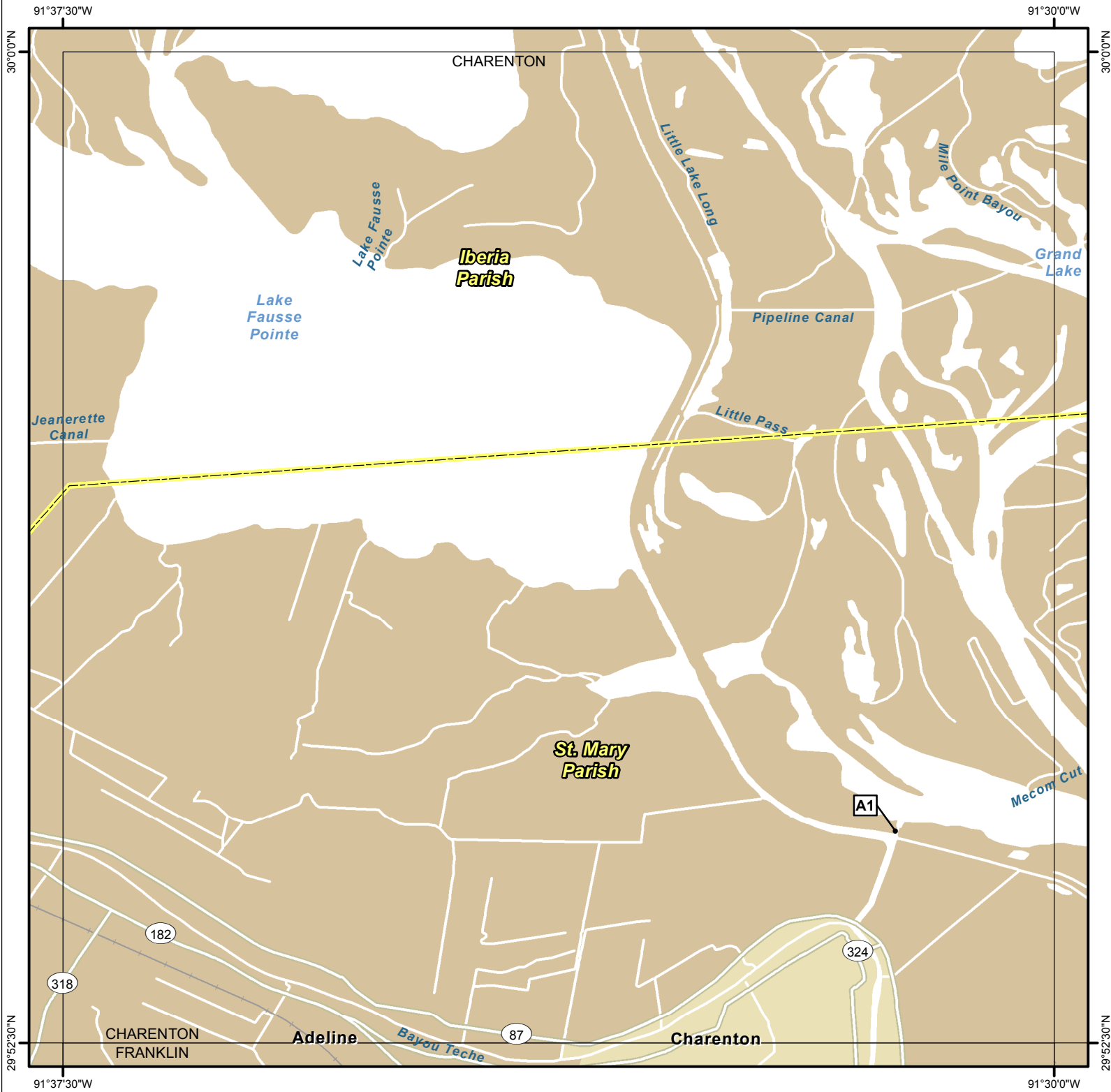


Southeast Louisiana ACP

St. Mary Parish Index Map

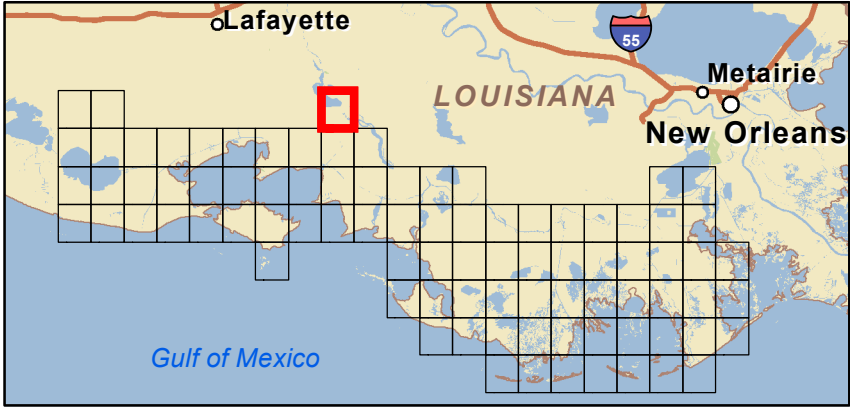
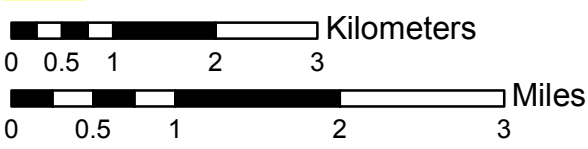


CHARENTON QUAD



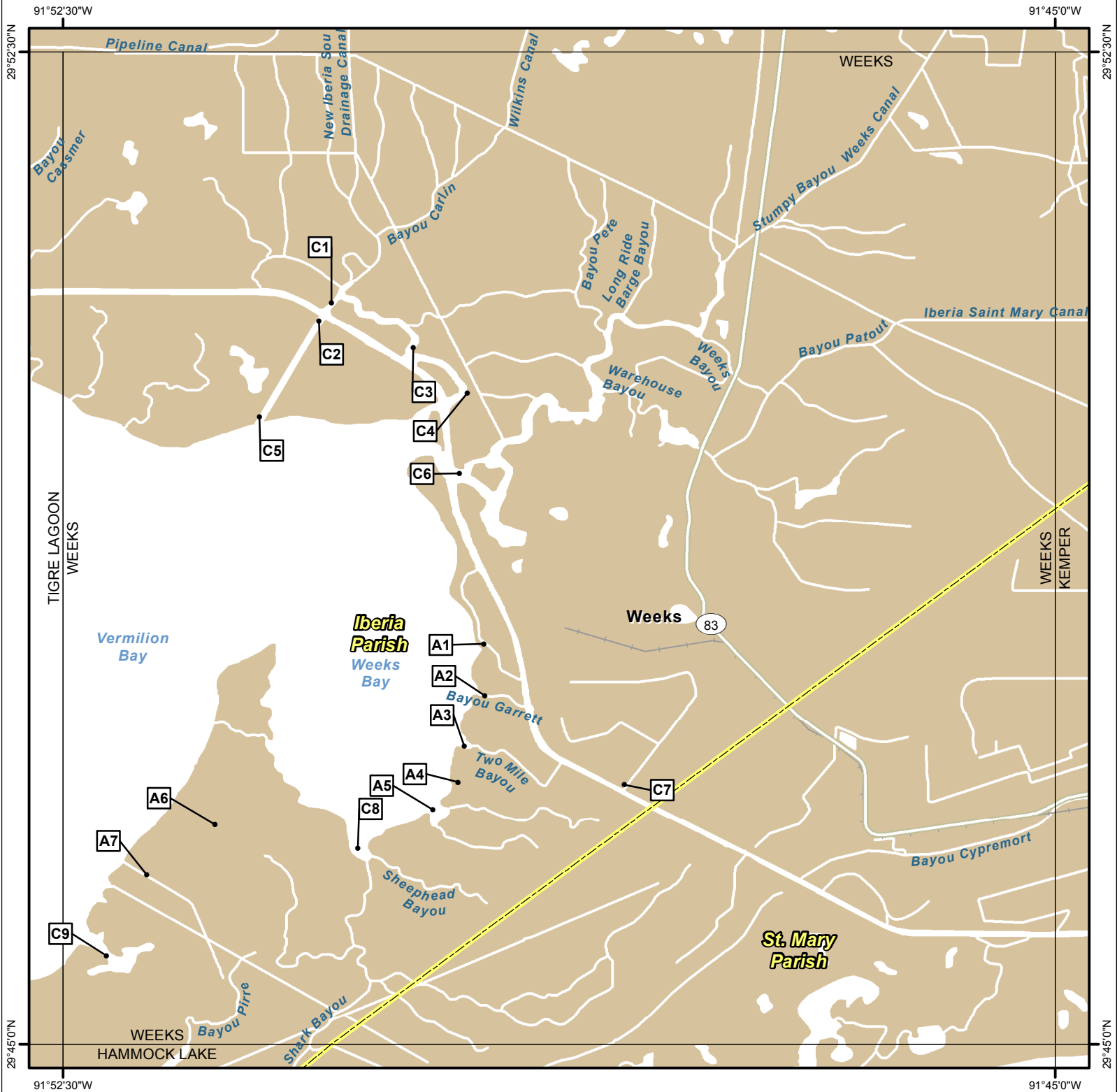
Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: A1		Location Information	
Name: Charenton Water Intake (need exact location)	Parish:	St. Mary	
	Quad Name:	Charenton	
Priority: A	Quad Number:	2909104	
Site Alias: Unnamed Bayou at ICW (Submitted by State)	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 54' 06.084" N	
Site Description: Public drinking water intake (Barr Pitt Intake)	Longitude:	91° 31' 12.000" W	
Response Considerations			
Site Strategy: Notification to Site Manager		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter: DEQ-Shane Miller and Steve Lorio/DNR/CPRA	
Submit Date: 2012.03.13		State Comments: Sensitive Habitat	

WEEKS QUAD

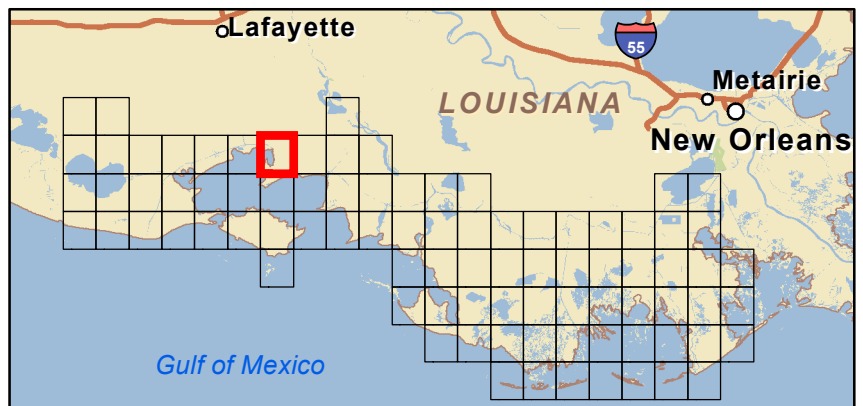


Legend

- GRP Sites
- Quad Boundaries
- ▭ Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Canal at Weeks Bay		Parish:	Iberia
		Quad Name:	Weeks
Priority:	A	Quad Number:	2909110
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 48' 01.622" N
		Longitude:	91° 49' 19.018" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments:	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Bayou Garrett at Weeks Bay	Parish:	Iberia	
	Quad Name:	Weeks	
Priority: A	Quad Number:	2909110	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 47' 37.960" N	
Site Description: Sensitive Habitat	Longitude:	91° 49' 18.767" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Two Mouth Bayou at Weeks Bay	Parish:	Iberia	
	Quad Name:	Weeks	
Priority: A	Quad Number:	2909110	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 47' 15.026" N	
Site Description: Sensitive Habitat	Longitude:	91° 49' 28.062" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A4		Location Information	
Name: Multiple Bayous (north) at Weeks Bay	Parish:	Iberia	
	Quad Name:	Weeks	
Priority: A	Quad Number:	2909110	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 46' 58.806" N	
Site Description: Sensitive Habitat	Longitude:	91° 49' 30.926" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A5		Location Information	
Name: Multiple Bayous (south) at Weeks Bay	Parish:	Iberia	
	Quad Name:	Weeks	
Priority: A	Quad Number:	2909110	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 46' 46.313" N	
Site Description: Sensitive Habitat	Longitude:	91° 49' 42.230" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A6		Location Information	
Name: Canal (north)	Parish: Iberia	Quad Name: Weeks	
	Priority: A	Quad Number: 2909110	
Site Alias: N/A	Mile Marker:	Managed (Y/N)?: N	
Site Description: Sensitive Habitat	Latitude: 29° 46' 39.606" N	Longitude: 91° 51' 21.062" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A7		Location Information	
Name: Canal (south)	Parish: Iberia	Quad Name: Weeks	
	Priority: A	Quad Number: 2909110	
Site Alias: N/A	Mile Marker:	Managed (Y/N)?: N	
Site Description: Sensitive Habitat	Latitude: 29° 46' 16.820" N	Longitude: 91° 51' 52.072" W	
Response Considerations			
Site Strategy: Exclusion Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments: Sensitive Habitat		
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio	State Submitter: DEQ-Shane Miller and Steve Lorio		
Submit Date: 2013.04.16	State Comments: Sensitive Habitat		

Site Information: C1		Location Information	
Name: Bayou Carlin at Intracoastal Waterway	Parish:	Iberia	
	Quad Name:	Weeks	
Priority: C	Quad Number:	2909110	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 50' 36.294" N	
Site Description: North side of ICW	Longitude:	91° 50' 28.215" W	
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments: Marshland and fisheries		
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By Prescott Marshall	State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA		
Submit Date: 2012.09.12	State Comments: Agencies concur with point		

Site Information: C2		Location Information	
Name: Weeks Island Channel at Intracoastal Waterway		Parish:	Iberia
		Quad Name:	Weeks
Priority: C		Quad Number:	2909110
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Marshland and fisheries		Latitude:	29° 50' 28.123" N
		Longitude:	91° 50' 33.906" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C3		Location Information	
Name: Bayou at Intracoastal Waterway (north)	Parish:	Iberia	
	Quad Name:	Weeks	
Priority: C	Quad Number:	2909110	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 50' 16.121" N	
Site Description: Within the vicinity of Weeks Island	Longitude:	91° 49' 51.200" W	
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments:		
ESI Description 10A: Salt- and brackish-water marshes			
Marshland and fisheries			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By Prescott Marshall	State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA		
Submit Date: 2012.09.12	State Comments: Agencies concur with point		

Site Information: C4		Location Information	
Name: Bayou at Intracoastal Waterway (central)	Parish:	Iberia	
	Quad Name:	Weeks	
Priority: C	Quad Number:	2909110	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 49' 55.370" N	
Site Description: Within the vicinity of Weeks Island	Longitude:	91° 49' 26.618" W	
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments:		
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By Prescott Marshall	State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA		
Submit Date: 2012.09.12	State Comments: Agencies concur with point		

Site Information: C5		Location Information	
Name: Weeks Bay Channel	Parish: Iberia	Quad Name: Weeks	
	Quad Number: 2909110		
Priority: C	Mile Marker:		
Site Alias: None	Managed (Y/N)?: N		
	Latitude: 29° 49' 44.438" N		
	Longitude: 91° 51' 01.003" W		
Site Description: Tidal inlet from the North side of Weeks Bay			
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Marshland and fisheries	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C6		Location Information	
Name: Bayou at Intracoastal Waterway (south)		Parish:	Iberia
		Quad Name:	Weeks
Priority: C		Quad Number:	2909110
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Southeast of Weeks Island		Latitude:	29° 49' 18.806" N
		Longitude:	91° 49' 30.210" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marshland and fisheries	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C7		Location Information	
Name: Entrance to old oil drilling channel from Intracoastal Waterway	Parish:	Iberia	
	Quad Name:	Weeks	
Priority: C	Quad Number:	2909110	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 46' 57.669" N	
Site Description: Marshland and fisheries	Longitude:	91° 48' 15.344" W	
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments: Marshland and fisheries		
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By Prescott Marshall	State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA		
Submit Date: 2012.09.12	State Comments: Agencies concur with point		

Site Information: C8		Location Information	
Name: Northern Entrance of Shark Bayou	Parish:	Iberia	
	Quad Name:	Weeks	
Priority: C	Quad Number:	2909110	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 46' 29.108" N	
Site Description: From Weeks Bay	Longitude:	91° 50' 16.253" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marshland and fisheries	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C9		Location Information	
Name: Western Side of Shark Island	Parish: Iberia	Quad Name: Weeks	
	Quad Number: 2909110		
Priority: C	Mile Marker:		
Site Alias: None	Managed (Y/N)?: N		
Site Description: From Vermillion Bay	Latitude: 29° 45' 40.085" N		
	Longitude: 91° 52' 10.366" W		
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Marshland and fisheries	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

KEMPER QUAD

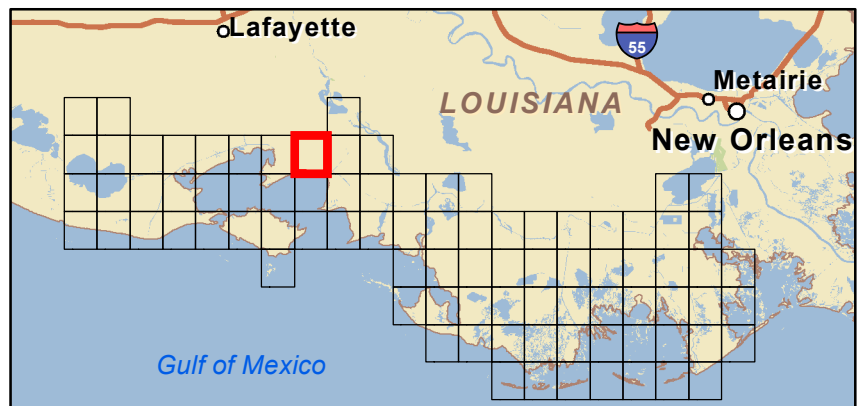


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Ivanhoe Canal at Intracoastal Waterway	Parish:	St. Mary	
	Quad Name:	Kemper	
Priority: A	Quad Number:	2909111	
Site Alias: N/A	Mile Marker:	131.2	
	Managed (Y/N)?:	N	
	Latitude:	29° 45' 46.477" N	
Site Description: Sensitive Habitat	Longitude:	91° 44' 24.531" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: N/A	

Site Information: A2		Location Information	
Name: Mouth of Ivanhoe Canal	Parish: St. Mary		
	Quad Name: Kemper		
Priority: A	Quad Number: 2909111		
Site Alias: Mouth/Ivanhoe Canal (Submitted by State)	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 45' 04.707" N		
Site Description: High Traffic Area/Crew boats	Longitude: 91° 44' 18.547" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Vessel Traffic	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.03.13		State Comments: State concurs with Parish	

FRANKLIN QUAD

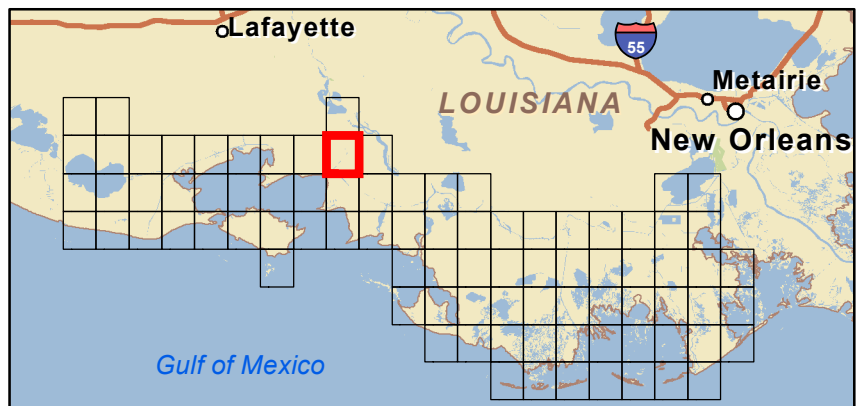


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Franklin Canal at Intracoastal Waterway	Parish: St. Mary		
	Quad Name: Franklin		
Priority: A	Quad Number: 2909112		
Site Alias: N/A	Mile Marker: 122.8		
	Managed (Y/N)?: N		
	Latitude: 29° 45' 40.552" N		
Site Description: Sensitive Habitat / Wildlife Preserve Bayou Teche NWR	Longitude: 91° 36' 11.084" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Wildlife Preserve Bayou Teche NWR / Sensitive Habitat	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: N/A	

Site Information: C1		Location Information	
Name: Intracoastal Inlet		Parish:	St. Mary
		Quad Name:	Franklin
Priority:	C	Quad Number:	2909112
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Inlet		Latitude:	29° 45' 39.106" N
		Longitude:	91° 37' 03.907" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DNR/CPRA		State Submitter: DNR/CPRA	
Submit Date: 2013.04.16		State Comments:	

CENTERVILLE QUAD



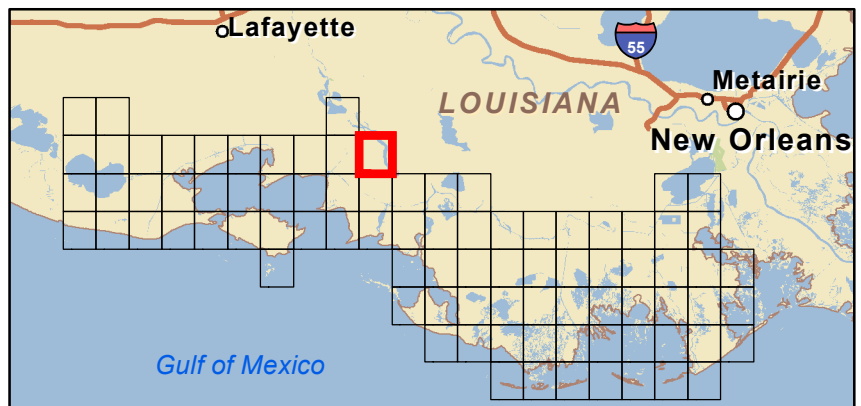
Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



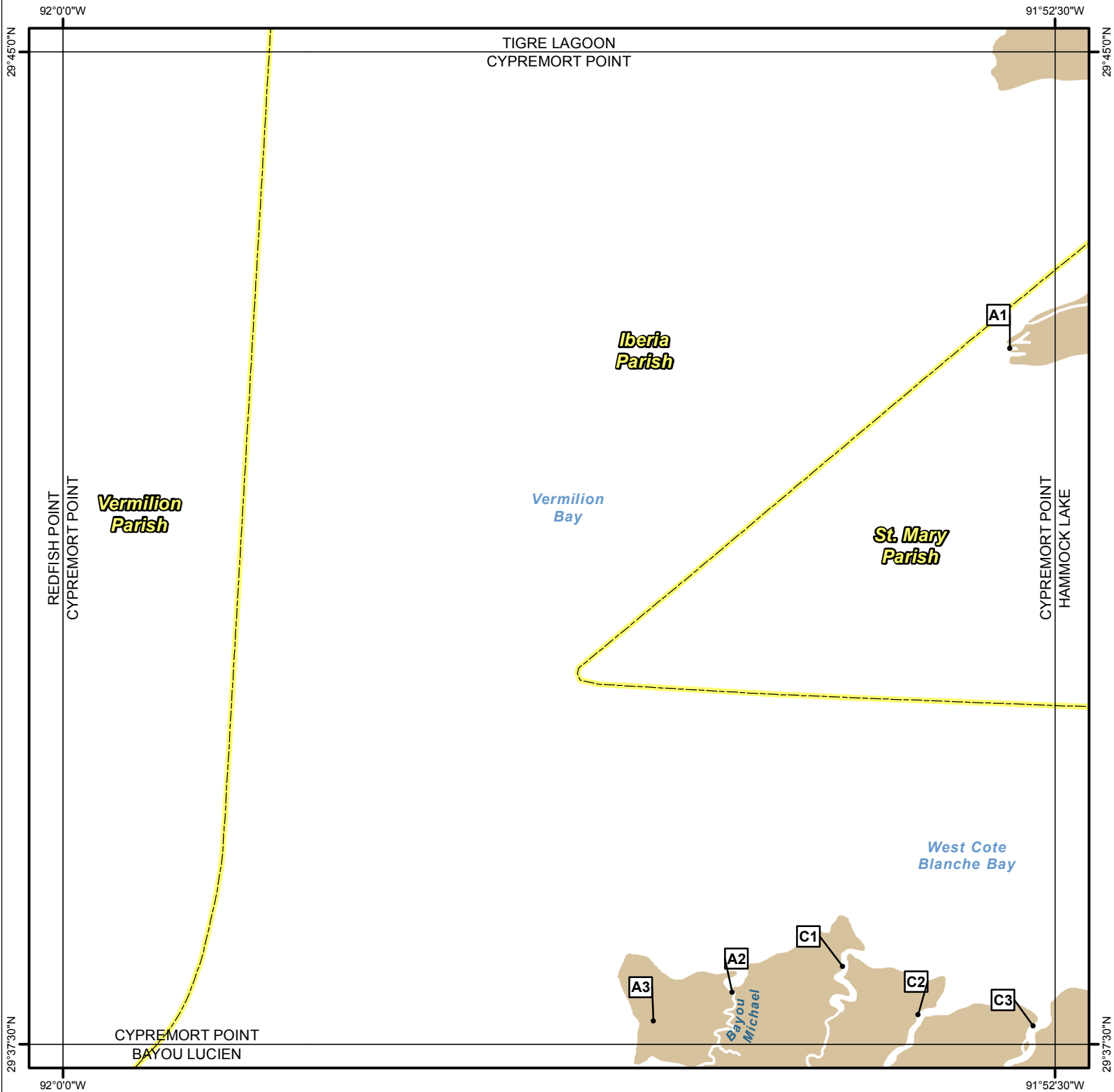
0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Franklin Water Intake		Parish:	St. Mary
		Quad Name:	Centerville
Priority: A		Quad Number:	2909113
Site Alias: Unnamed Bayou at ICW (Submitted by State)		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 47' 52.368" N
		Longitude:	91° 29' 48.408" W
Response Considerations			
Site Strategy: Notification to Site Manager		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter: DEQ-Shane Miller and Steve Lorio/DNR/CPRA	
Submit Date: 2012.03.13		State Comments: Sensitive Habitat	

CYPREMORT POINT QUAD

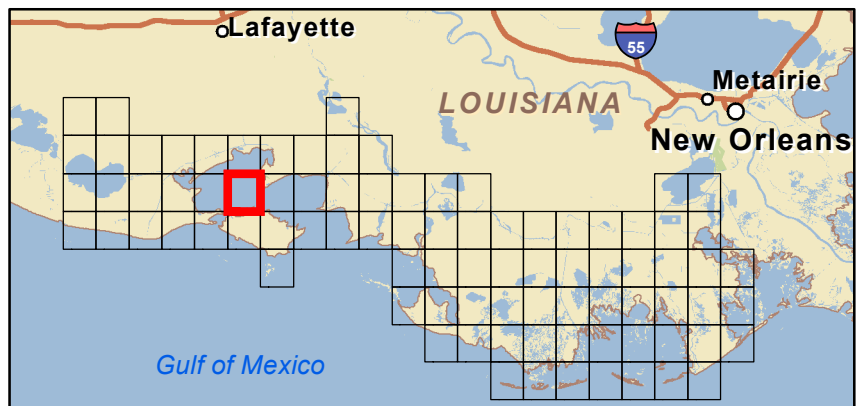


Legend

- GRP Sites
- Quad Boundaries
- ▭ Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Cypremort Point Business & Residences	Parish: St. Mary	Quad Name: Cypremort Point	
Priority: A	Quad Number: 2909117		
Site Alias: Cypremort Point Residential Recreation Area (Submitted by State)	Mile Marker:		
	Managed (Y/N)?: N		
Site Description: Residential/Rec Area	Latitude: 29° 42' 45.634" N		
	Longitude: 91° 52' 50.419" W		
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Two inlets to be considered	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

Site Information: A2		Location Information	
Name: Bayou Michel		Parish:	Iberia
		Quad Name:	Cypremort Point
Priority:	A	Quad Number:	2909117
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 37' 53.688" N
Site Description: State Refuge part of Marsh Island Refuge		Longitude:	91° 54' 56.372" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive habitat	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish/LDEQ	
Submit Date: 2013.04.16		State Comments:	

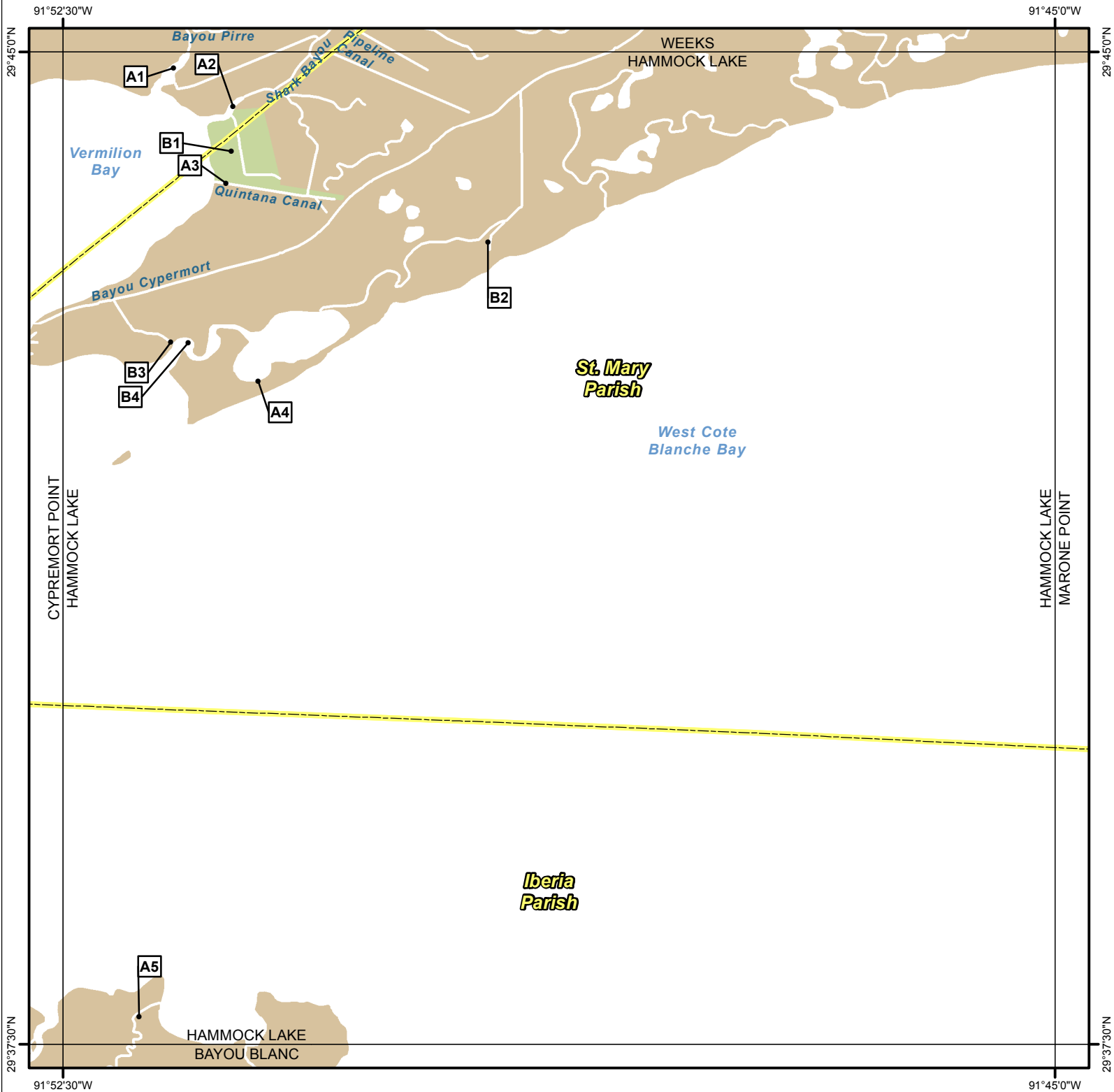
Site Information: A3		Location Information	
Name: Multiple Bayous	Parish: Iberia	Quad Name: Cypremort Point	
	Priority: A	Quad Number: 2909117	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?: Y - Wildlife Refuge		
	Latitude: 29° 37' 40.759" N		
Site Description: State Refuge part of Marsh Island Refuge	Longitude: 91° 55' 32.247" W		
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: C1		Location Information	
Name: Entrance to Lucien Bayou from Vermilion Bay	Parish:	Iberia	
	Quad Name:	Cypremort Point	
Priority: C	Quad Number:	2909117	
Site Alias: None Site Description: State Refuge part of Marsh Island Refuge	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 38' 05.334" N	
	Longitude:	91° 54' 06.247" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C2		Location Information	
Name: Entrance to Platte Bayou from Vermilion Bay	Parish:	Iberia	
	Quad Name:	Cypremort Point	
Priority: C	Quad Number:	2909117	
Site Alias: None Site Description: State Refuge part of Marsh Island Refuge	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 37' 43.236" N	
	Longitude:	91° 53' 32.074" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive habitat	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C3		Location Information	
Name: LDWF Marsh Island Station	Parish:	Iberia	
	Quad Name:	Cypremort Point	
Priority: C	Quad Number:	2909117	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 37' 38.264" N	
Site Description: State Refuge part of Marsh Island Refuge	Longitude:	91° 52' 39.850" W	
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive habitat	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

HAMMOCK LAKE QUAD

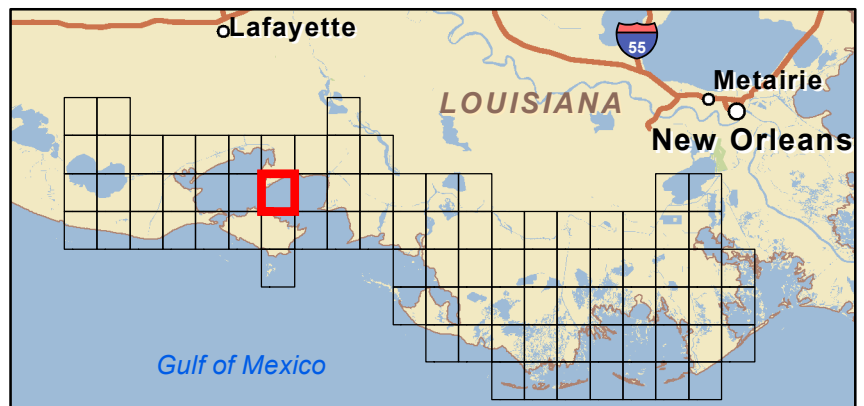


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Northwest Cypremort Point Inlet	Parish: Iberia		
	Quad Name: Hammock Lake		
Priority: A	Quad Number: 2909118		
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?: N		
Site Description: Inlet	Latitude: 29° 44' 52.785" N		
	Longitude: 91° 51' 40.031" W		
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D	Resources At Risk Comments:		
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By DNR/CPRA	State Submitter: DNR/CPRA		
Submit Date: 2013.04.16	State Comments:		

Site Information: A2		Location Information	
Name: Shark Bayou	Parish:	Iberia	
	Quad Name:	Hammock Lake	
Priority: A	Quad Number:	2909118	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
Site Description: Inlet	Latitude:	29° 44' 35.583" N	
	Longitude:	91° 51' 12.848" W	
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DNR/CPRA		State Submitter: DNR/CPRA	
Submit Date: 2013.04.16		State Comments:	

Site Information: A3		Location Information	
Name: Quintana Canal		Parish:	St. Mary
		Quad Name:	Hammock Lake
Priority:	A	Quad Number:	2909118
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: Cypremort Pt. State Park		Latitude:	29° 44' 00.545" N
		Longitude:	91° 51' 16.243" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		State Park	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

Site Information: A4		Location Information	
Name: Mouth of Hammock Lake (south)	Parish: St. Mary	Quad Name: Hammock Lake	
Priority: A	Quad Number: 2909118		
Site Alias: Franklin Canal at ICW (Submitted by State)	Mile Marker:		
	Managed (Y/N)?: N		
Site Description: Sensitive Habitat	Latitude: 29° 42' 30.928" N		
	Longitude: 91° 51' 01.618" W		
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

Site Information: A5		Location Information	
Name: West Joe Aucoin Bayou		Parish:	Iberia
		Quad Name:	Hammock Lake
Priority:	A	Quad Number:	2909118
Site Alias: N/A Site Description: State Refuge part of Marsh Island Refuge		Mile Marker:	
		Managed (Y/N)?:	Y - Wildlife Refuge
		Latitude:	29° 37' 42.548" N
		Longitude:	91° 51' 55.569" W
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

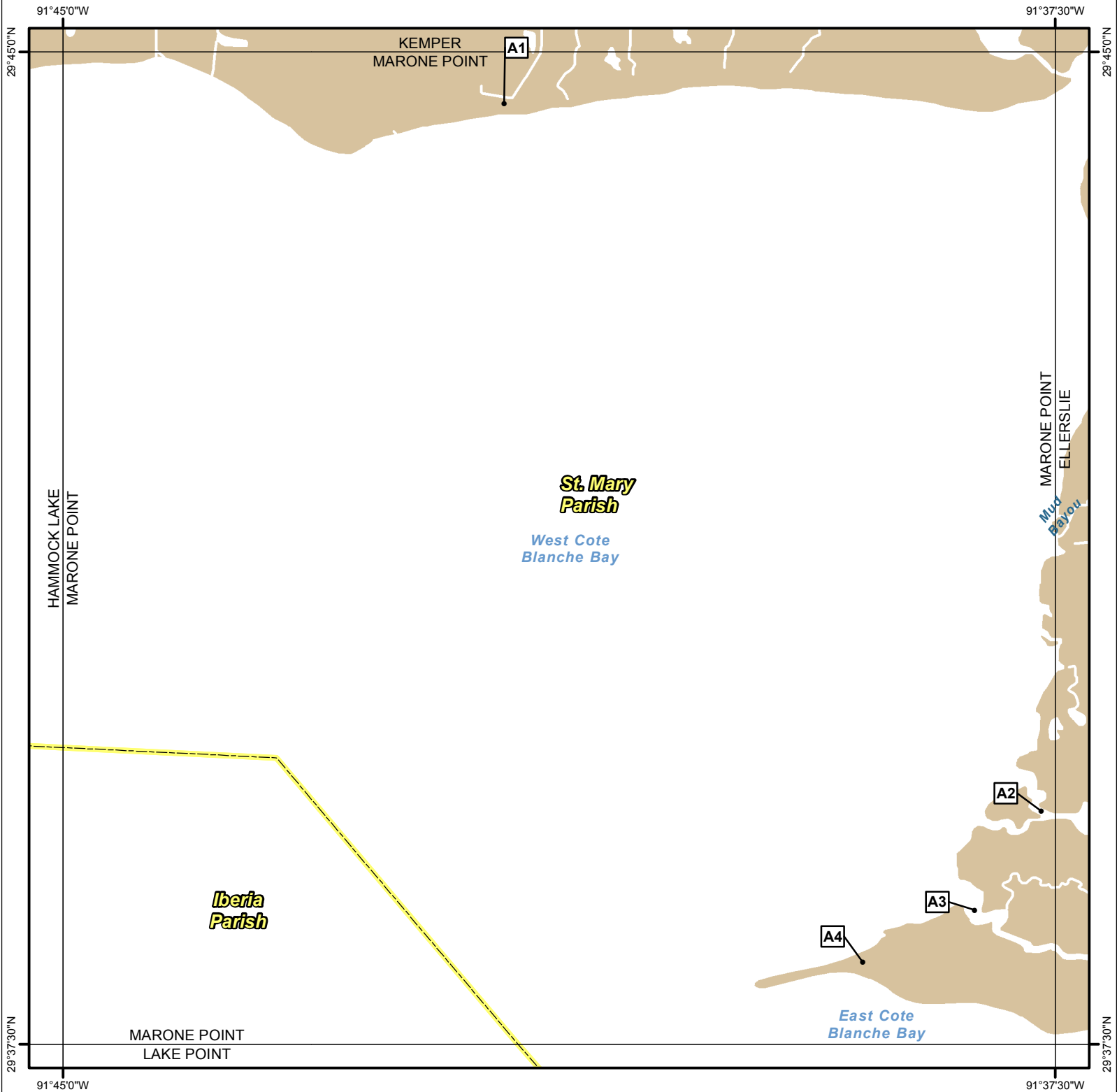
Site Information: B1		Location Information	
Name: Cypremort Point State Recreation Area		Parish:	St. Mary
		Quad Name:	Hammock Lake
Priority: B		Quad Number:	2909118
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: State park/recreation area		Latitude:	29° 44' 15.018" N
		Longitude:	91° 51' 13.732" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter: DEQ/St. Mary Parish/DNR/CPRA	
Submit Date: 2012.03.13		State Comments: Point is in question by State	

Site Information: B2		Location Information	
Name: Inlet near Prince Lake		Parish:	St. Mary
		Quad Name:	Hammock Lake
Priority: B		Quad Number:	2909118
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Marshland		Latitude:	29° 43' 33.878" N
		Longitude:	91° 49' 17.366" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marshland	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Duval Arthur St Mary OEP		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

Site Information: B3		Location Information	
Name: Mouth of Hammock Bayou (north)		Parish:	St. Mary
		Quad Name:	Hammock Lake
Priority: B		Quad Number:	2909118
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 42' 48.316" N
		Longitude:	91° 51' 41.177" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.03.13		State Comments: State Concurs with Parish	

Site Information: B4		Location Information	
Name: Mouth of Hammock Bayou (central)	Parish: St. Mary	Quad Name: Hammock Lake	
Priority: B	Quad Number: 2909118		
Site Alias: None	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 42' 48.082" N		
Site Description: Two inlets to be considered	Longitude: 91° 51' 33.307" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Two inlets to be considered	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

MARONE POINT QUAD



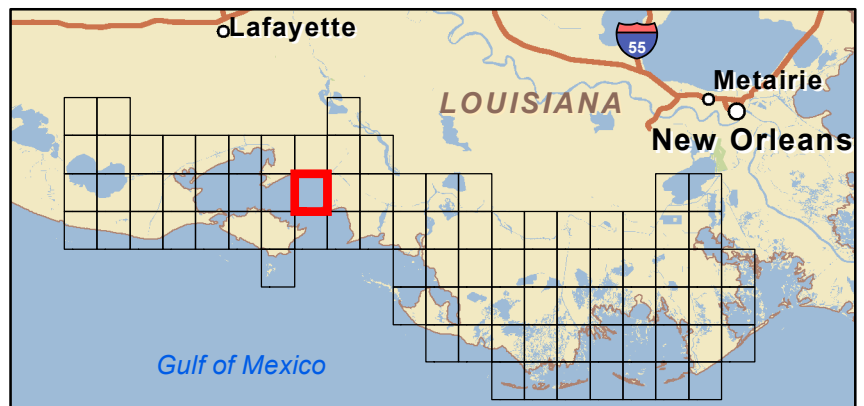
Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



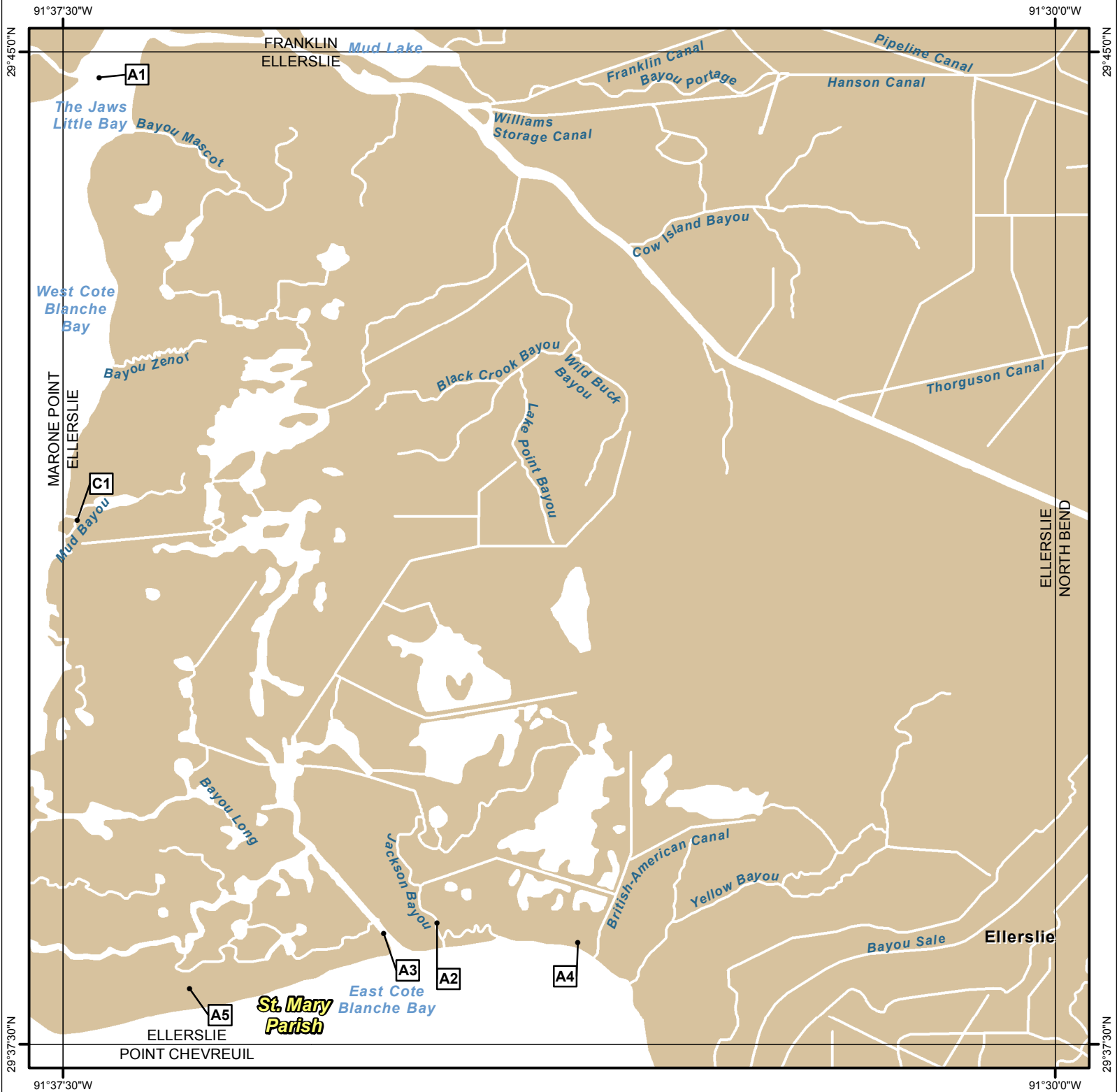
Site Information: A1		Location Information	
Name: Canal	Parish:	St. Mary	
	Quad Name:	Marone Point	
Priority: A	Quad Number:	2909119	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
Site Description: Sensitive Habitat	Latitude:	29° 44' 36.767" N	
	Longitude:	91° 41' 40.030" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Bayou Long	Parish: St. Mary	Quad Name: Marone Point	
Priority: A	Quad Number: 2909119		
Site Alias: None	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 39' 15.699" N		
Site Description: Inlet to marsh-Marone Point	Longitude: 91° 37' 36.132" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Ray Clement LA DEQ		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: A3		Location Information	
Name: Marone Point	Parish: St. Mary	Quad Name: Marone Point	
Priority: A	Quad Number: 2909119		
Site Alias: Ivanhoe Canal at ICW (Submitted by State)	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 38' 30.817" N		
Site Description: EDIT to #1- entrance to marsh	Longitude: 91° 38' 06.381" W		
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 1000-1500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Marshland-Pt Marone / Sensitive Habitat	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Duval Arthur St Mary OEP		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

Site Information: A4		Location Information	
Name: Point Marone		Parish:	St. Mary
		Quad Name:	Marone Point
Priority: A		Quad Number:	2909119
Site Alias: Point Marone		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 38' 07.077" N
		Longitude:	91° 38' 57.148" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10B/2A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10B: Freshwater marshes / 2A: Exposed Wave-cut Platform in clay			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.03.13		State Comments: State Concurs with Parish	

ELLERSLIE QUAD

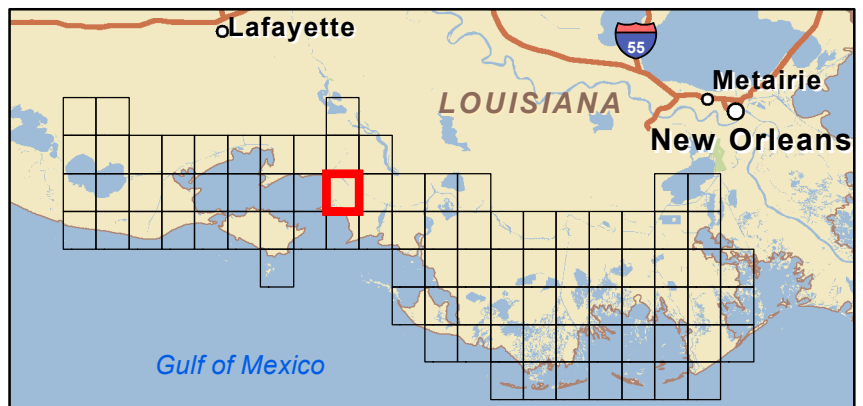


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: The Jaws		Parish:	St. Mary
		Quad Name:	Ellerslie
Priority: A		Quad Number:	2909120
Site Alias: Jaws Pass (Submitted by State)		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Charenton Canal		Latitude:	29° 44' 48.458" N
		Longitude:	91° 37' 13.530" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 1500-2000 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Drinking water/Bayou Mascot	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

Site Information: A2		Location Information	
Name: Bayou		Parish:	St. Mary
		Quad Name:	Ellerslie
Priority: A		Quad Number: 2909120	
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 38' 24.973" N
		Longitude:	91° 34' 40.373" W
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Gulf Inlet (north)	Parish:	St. Mary	
	Quad Name:	Ellerslie	
Priority: A	Quad Number:	2909120	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 38' 20.157" N	
Site Description: Inlet - E. Cote Blanche	Longitude:	91° 35' 04.633" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10B/6A/2A		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes / 6A: Gravel beaches / 2A: Exposed Wave-cut Platform in clay			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Ray Clement LA DEQ		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

Site Information: A4		Location Information	
Name: Multiple Inlets	Parish:	St. Mary	
	Quad Name:	Ellerslie	
Priority: A	Quad Number:	2909120	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
Site Description: Inlets- E. Cote Blanche	Latitude:	29° 38' 16.005" N	
	Longitude:	91° 33' 36.566" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
		Boom multiple inlets	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Ray Clement LA DEQ		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

Site Information: A5		Location Information	
Name: Gulf Inlet (south)	Parish: St. Mary	Quad Name: Ellerslie	
	Priority: A	Quad Number: 2909120	
Site Alias: None	Mile Marker:	Managed (Y/N)?: N	
Site Description: Inlet - E. Cote Blanche	Latitude: 29° 37' 55.049" N	Longitude: 91° 36' 32.554" W	
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B/2A	Resources At Risk Comments:		
ESI Description 10B: Freshwater marshes / 2A: Exposed Wave-cut Platform in clay			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By Ray Clement LA DEQ	State Submitter: DEQ/ St Mary Parish/DNR/CPRA		
Submit Date: 2012.10.01	State Comments: State Concurs with Parish		

Site Information: C1		Location Information	
Name: Mud Bayou and Canal	Parish: St. Mary	Quad Name: Ellerslie	
Priority: C	Quad Number: 2909120		
Site Alias: None	Mile Marker:		
	Managed (Y/N)?: N		
Site Description: Two canals	Latitude: 29° 41' 27.690" N		
	Longitude: 91° 37' 23.663" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

NORTH BEND QUAD

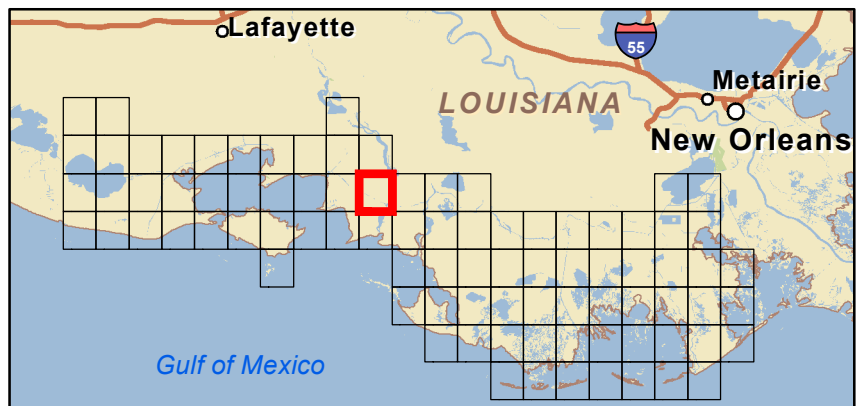


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Bayou at Intracoastal Waterway		Parish:	St. Mary
		Quad Name:	North Bend
Priority:	A	Quad Number:	2909121
Site Alias: N/A		Mile Marker:	110.9
		Managed (Y/N)?:	N
Site Description: Sensitive Habitat		Latitude:	29° 39' 57.211" N
		Longitude:	91° 26' 32.195" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Calumet Cut / Wax Lake Outlet	Parish:	St. Mary	
	Quad Name:	North Bend	
Priority: A	Quad Number:	2909121	
Site Alias: N/A	Mile Marker:	110.9	
	Managed (Y/N)?:	N	
Site Description: Sensitive Habitat	Latitude:	29° 38' 35.792" N	
	Longitude:	91° 23' 49.835" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

PATTERSON QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

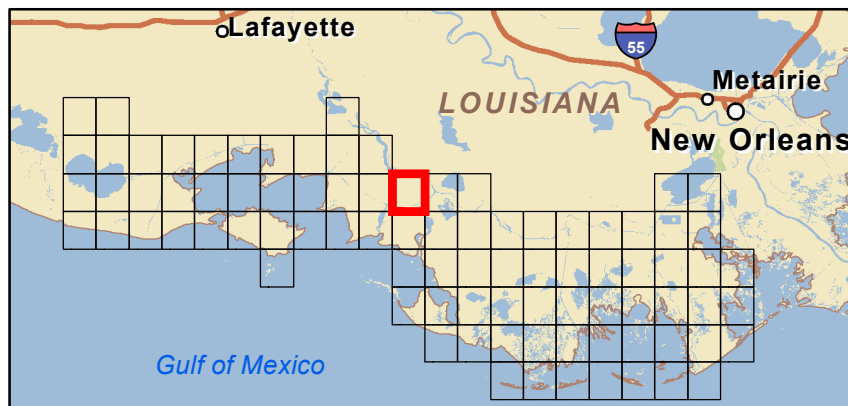


Kilometers

0 0.5 1 2 3

Miles

0 0.5 1 2 3



Site Information: A1		Location Information	
Name: Canal at Intracoastal Waterway	Parish: St. Mary		
	Quad Name: Patterson		
Priority: A	Quad Number: 2909122		
Site Alias: N/A	Mile Marker: 99.1		
	Managed (Y/N)?: N		
Site Description: Sensitive Habitat	Latitude: 29° 39' 13.214" N		
	Longitude: 91° 15' 19.786" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Steve Miller and Steve Lorio		State Submitter: DEQ-Steve Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Bayou at Intracoastal Waterway (west)	Parish:	St. Mary	
	Quad Name:	Patterson	
Priority: A	Quad Number:	2909122	
Site Alias: N/A	Mile Marker:	106.7	
	Managed (Y/N)?:	N	
	Latitude:	29° 38' 36.068" N	
Site Description: Sensitive Habitat	Longitude:	91° 22' 19.660" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

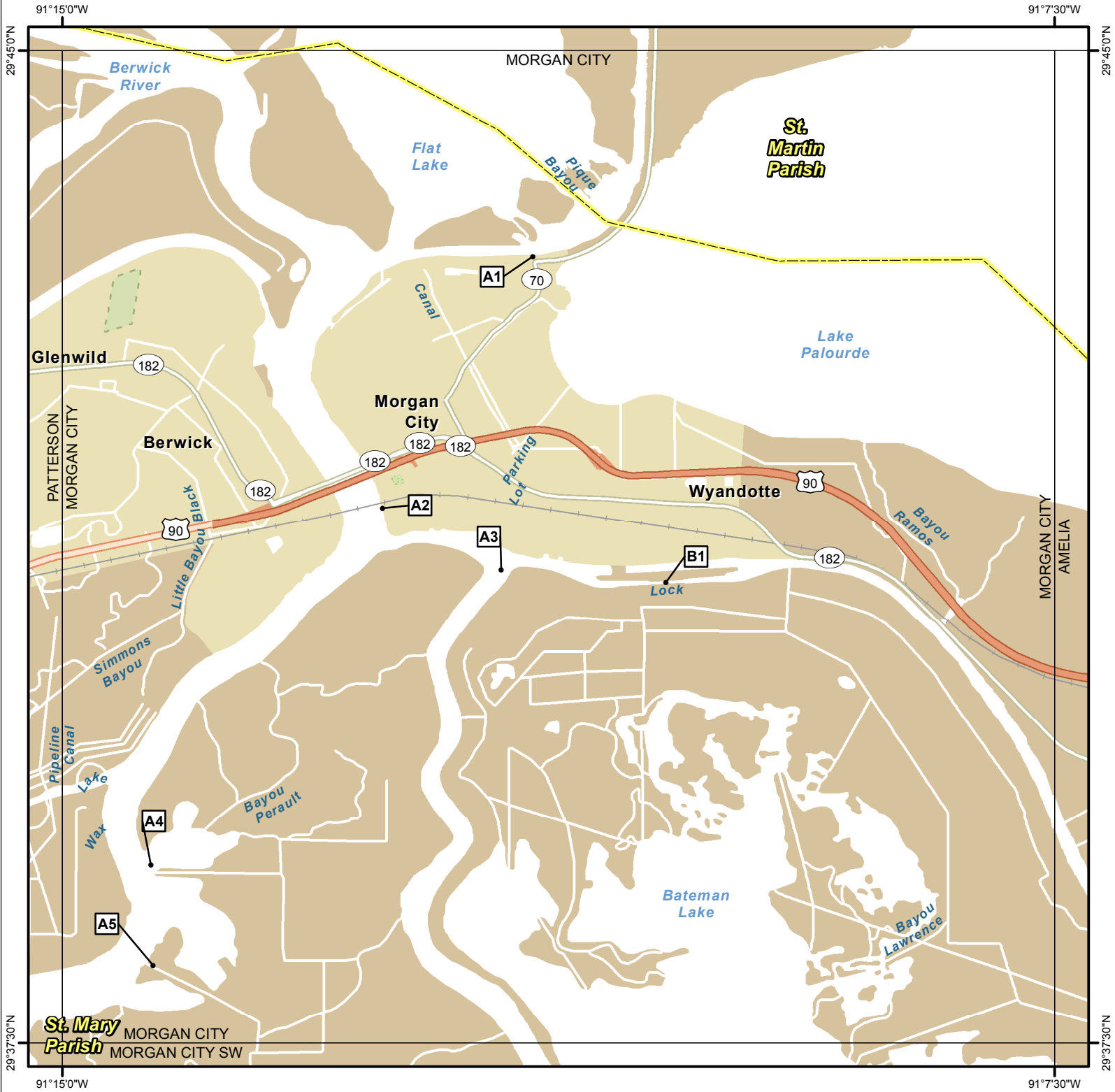
Site Information: A3		Location Information	
Name: Bayou at Intracoastal Waterway (east)	Parish:	St. Mary	
	Quad Name:	Patterson	
Priority: A	Quad Number:	2909122	
Site Alias: N/A	Mile Marker:	102.0	
	Managed (Y/N)?:	N	
Site Description: Sensitive Habitat	Latitude:	29° 38' 31.629" N	
	Longitude:	91° 18' 05.544" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Steve Miller and Steve Lorio		State Submitter: DEQ-Steve Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A4		Location Information	
Name: Bayou at Intracoastal Waterway (central west)	Parish:	St. Mary	
	Quad Name:	Patterson	
Priority: A	Quad Number:	2909122	
Site Alias: N/A	Mile Marker:	105.9	
	Managed (Y/N)?:	N	
	Latitude:	29° 38' 30.720" N	
Site Description: Sensitive Habitat	Longitude:	91° 21' 53.077" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A5		Location Information	
Name: Bayou at Intracoastal Waterway (central)	Parish: St. Mary		
	Quad Name: Patterson		
Priority: A	Quad Number: 2909122		
Site Alias: N/A	Mile Marker: 104.8		
	Managed (Y/N)?: N		
Site Description: Sensitive Habitat	Latitude: 29° 38' 28.608" N		
	Longitude: 91° 21' 17.806" W		
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A6		Location Information	
Name: Bayou at Intracoastal Waterway (Central east)	Parish: St. Mary		
	Quad Name: Patterson		
Priority: A	Quad Number: 2909122		
Site Alias: N/A	Mile Marker: 103.2		
	Managed (Y/N)?: N		
Site Description: Sensitive Habitat	Latitude: 29° 38' 19.632" N		
	Longitude: 91° 19' 04.422" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

MORGAN CITY QUAD

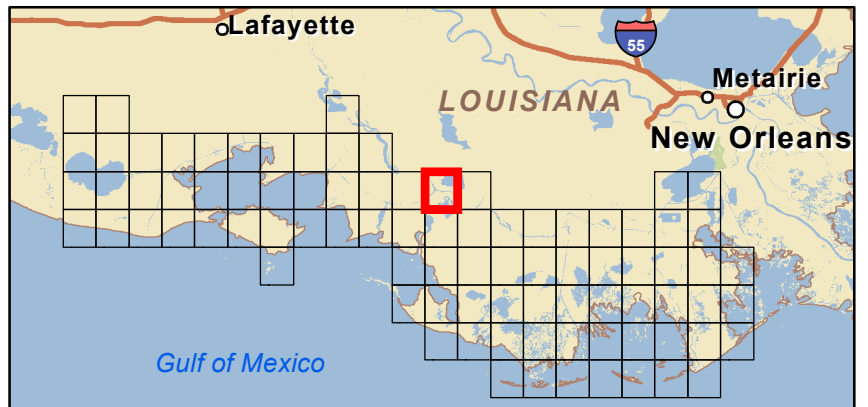
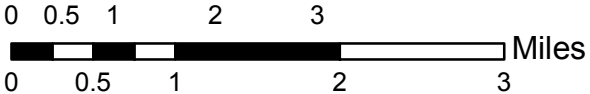


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



A horizontal scale bar with a black background. It features three white rectangular segments. The first segment is labeled '0' at its left end. The second segment is labeled '10' at its right end. The third segment is labeled '20' at its right end. To the right of the bar, the word 'Kilometers' is written in a black serif font.



Site Information: A1		Location Information	
Name: LA 70 / Morgan City Water Intake		Parish:	St. Mary
		Quad Name:	Morgan City
Priority:	A	Quad Number:	2909123
Site Alias: Unnamed Canal at ICQ (Submitted by State)		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Water Intake		Latitude:	29° 43' 26.680" N
		Longitude:	91° 11' 26.535" W
Response Considerations			
Site Strategy: Notification to Site Manager		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Water Intake / Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

Site Information: A2		Location Information	
Name: 1st Street Water Intake		Parish:	St. Mary
		Quad Name:	Morgan City
Priority:	A	Quad Number:	2909123
Site Alias: None		Mile Marker:	
		Managed (Y/N)?:	N
Site Description: Water Intake		Latitude:	29° 41' 32.412" N
		Longitude:	91° 12' 34.837" W
Response Considerations			
Site Strategy: Notification to Site Manager		Site Strategy Comments:	
Site Waterbody Type: Rivers or Large Streams			
Current Wave Action: Currents >2 kts			
Waterbody Opening: 1500-2000 ft			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Water Intake	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

Site Information: A3		Location Information	
Name: Bayou Shaffer	Parish:	St. Mary	
	Quad Name:	Morgan City	
Priority: A	Quad Number:	2909123	
Site Alias: N/A	Mile Marker:	94.3	
	Managed (Y/N)?:	N	
Site Description: Sensitive Habitat	Latitude:	29° 41' 04.500" N	
	Longitude:	91° 11' 40.882" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Steve Miller and Steve Lorio		State Submitter: DEQ-Steve Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A4		Location Information	
Name: Canal at Bateman Lake (north)		Parish:	St. Mary
		Quad Name:	Morgan City
Priority: A		Quad Number:	2909123
Site Alias: N/A		Mile Marker:	120.4
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 38' 50.451" N
		Longitude:	91° 14' 19.921" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Steve Miller and Steve Lorio		State Submitter: DEQ-Steve Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A5		Location Information	
Name: Canal at Bateman Lake (south)		Parish:	St. Mary
		Quad Name:	Morgan City
Priority:	A	Quad Number:	2909123
Site Alias: N/A		Mile Marker:	121.0
		Managed (Y/N)?:	N
Site Description: Sensitive Habitat		Latitude:	29° 38' 05.006" N
		Longitude:	91° 14' 18.953" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Steve Miller and Steve Lorio		State Submitter: DEQ-Steve Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: B1		Location Information	
Name: Bayou Boeuf Locks		Parish:	St. Mary
		Quad Name:	Morgan City
Priority: B		Quad Number:	2909123
Site Alias: N/A		Mile Marker:	93.0
		Managed (Y/N)?:	N
Site Description: Locks		Latitude:	29° 40' 58.799" N
		Longitude:	91° 10' 26.303" W
Response Considerations			
Site Strategy: Notification to Site Manager		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
		Locks	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Steve Miller and Steve Lorio		State Submitter: DEQ-Steve Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Locks	

AMELIA QUAD



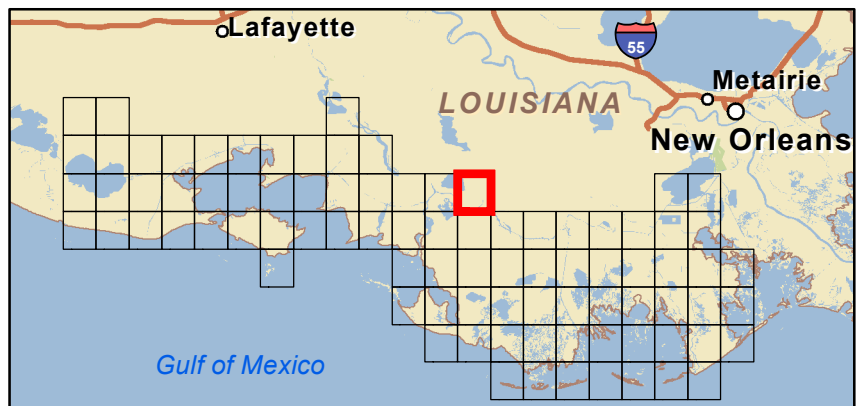
Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles

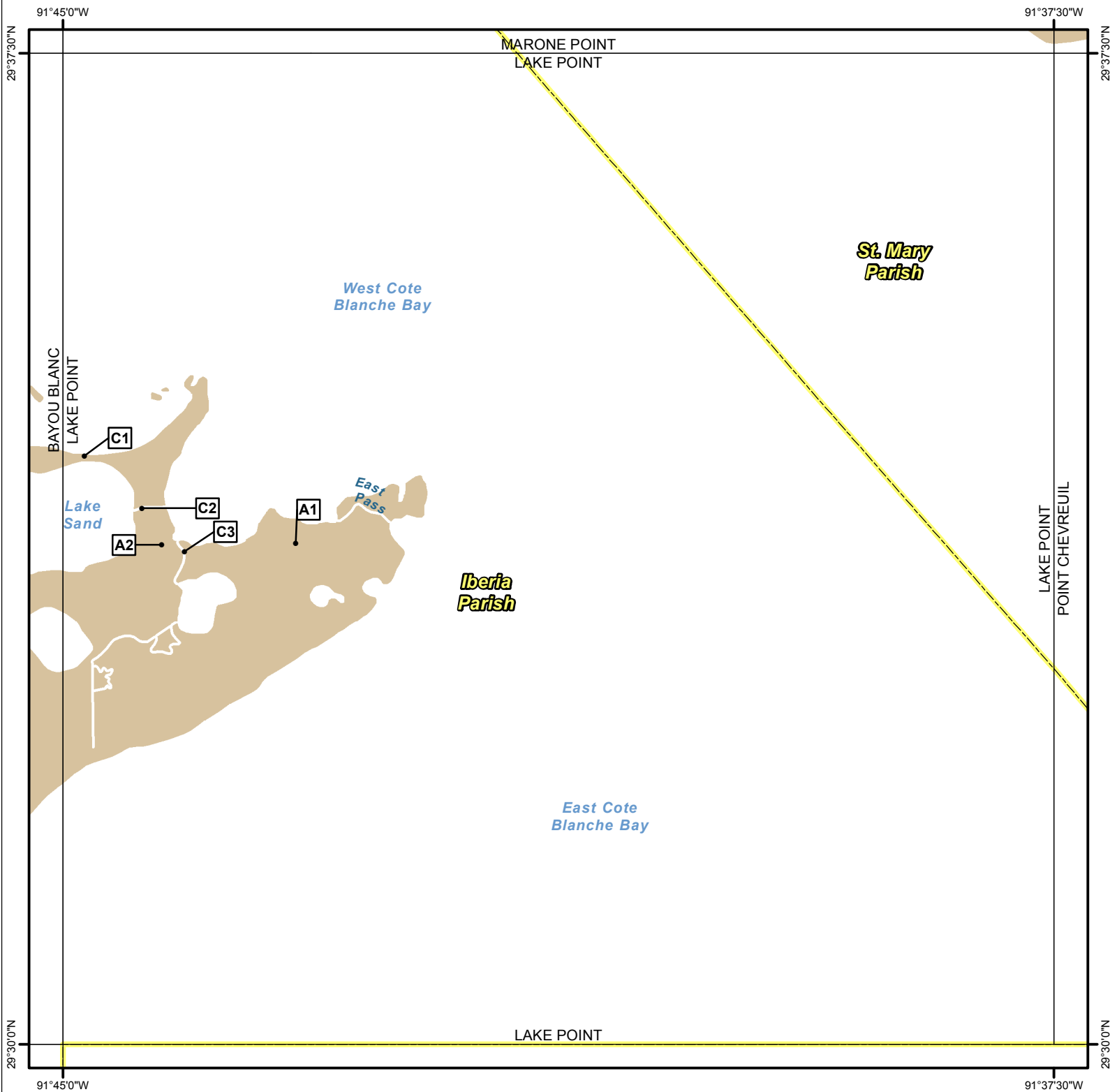


Site Information: A1		Location Information	
Name: Water Intake - Amelia Waterworks Road	Parish: St. Mary		
	Quad Name: Amelia		
Priority: A	Quad Number: 2909124		
Site Alias: Unnamed Canal at Bateman Lake (Submitted by State)	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 41' 02.239" N		
Site Description: Water Intake	Longitude: 91° 05' 59.510" W		
Response Considerations			
Site Strategy: Notification to Site Manager		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Water Intake / Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

Site Information: A2		Location Information	
Name: Bayou Chene		Parish:	St. Mary
		Quad Name:	Amelia
Priority: A		Quad Number:	2909124
Site Alias: Bayou Boeuf at ICW (Submitted by State)		Mile Marker:	87
		Managed (Y/N)?:	N
Site Description: Booming point		Latitude:	29° 38' 42.255" N
		Longitude:	91° 06' 19.223" W
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

Site Information: A3		Location Information	
Name: Intersection of Bayou Boeuf and Intracoastal Waterway	Parish:	Terrebonne	
	Quad Name:	Amelia	
Priority: A	Quad Number:	2909124	
Site Alias: N/A	Mile Marker:	85.5	
	Managed (Y/N)?:	N	
Site Description: Sensitive Habitat	Latitude:	29° 37' 39.330" N	
	Longitude:	91° 04' 56.918" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments:	

LAKE POINT QUAD



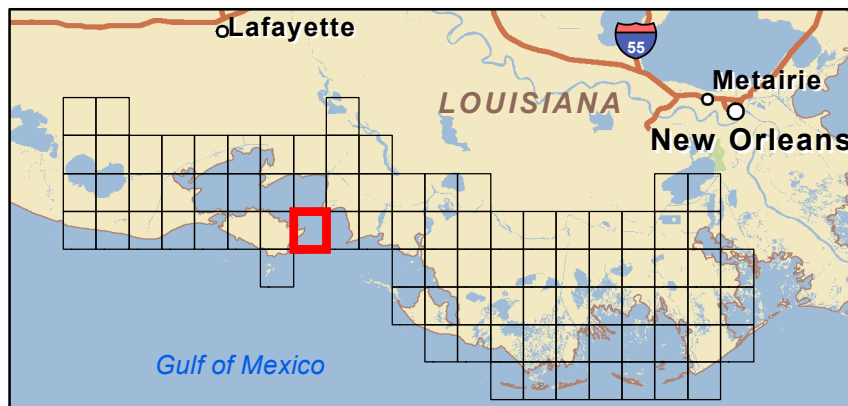
Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: East Location Canal	Parish: Iberia	Quad Name: Lake Point	
Priority: A	Quad Number: 2909127		
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?: Y - Wildlife Refuge		
	Latitude: 29° 33' 47.673" N		
Site Description: State Refuge part of Marsh Island Refuge	Longitude: 91° 43' 14.270" W		
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive habitat	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish/LDEQ	
Submit Date: 2013.04.16		State Comments:	

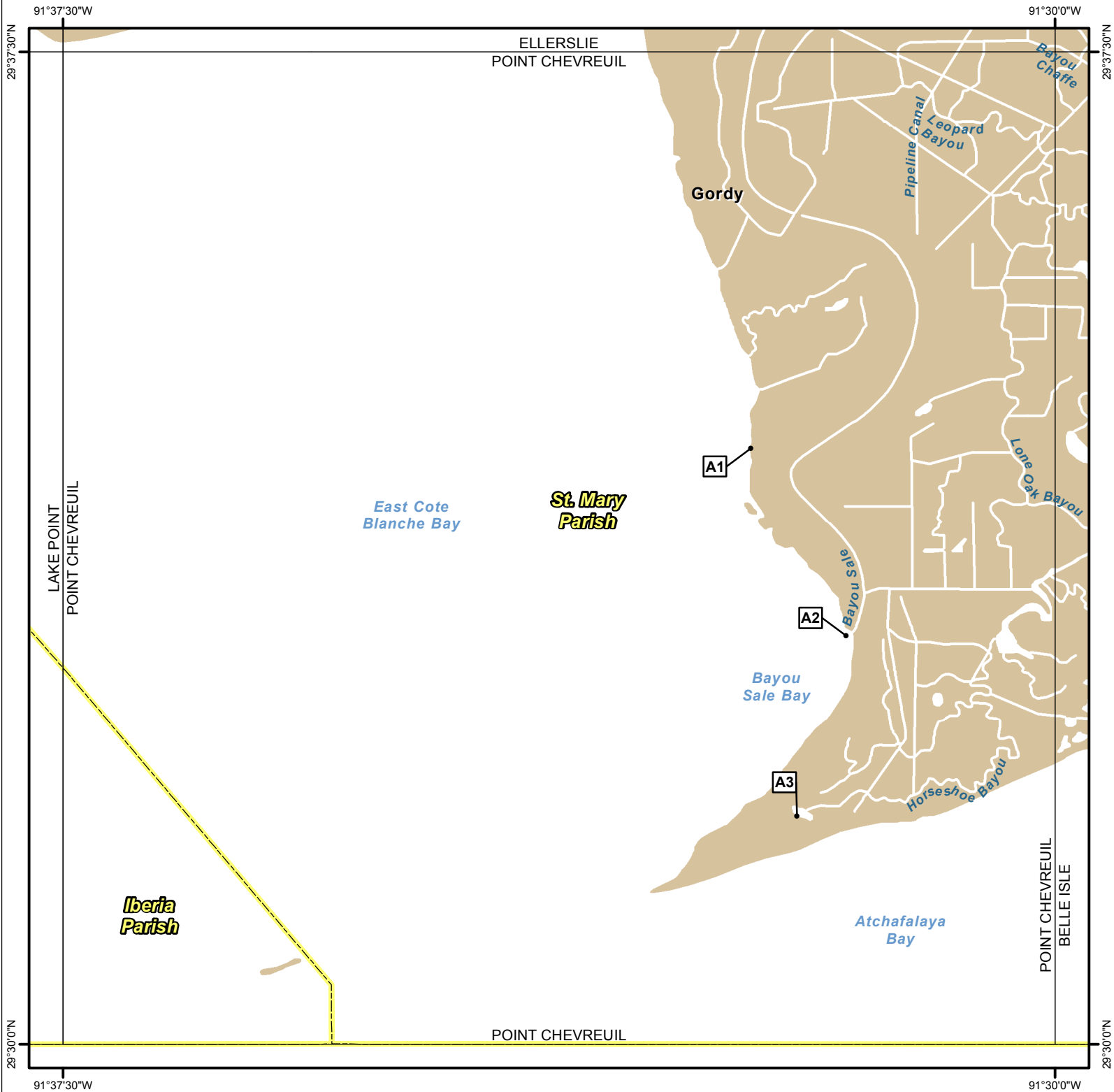
Site Information: A2		Location Information	
Name: Canal		Parish:	Iberia
		Quad Name:	Lake Point
Priority:	A	Quad Number:	2909127
Site Alias: N/A Site Description: State Refuge part of Marsh Island Refuge		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 33' 46.820" N
		Longitude:	91° 44' 15.257" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: C1		Location Information	
Name: Lake Sand Terraces		Parish:	Iberia
		Quad Name:	Lake Point
Priority:	C	Quad Number:	2909127
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 34' 27.266" N
Site Description: State Refuge part of Marsh Island Refuge		Longitude:	91° 44' 50.312" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: 1000-1500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Tern, gull, and skimmer nesting area / Marshland and fisheries	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C2		Location Information	
Name: East Entrance to Lake Sand from East Cote Blanche Bay	Parish:	Iberia	
	Quad Name:	Lake Point	
Priority: C	Quad Number:	2909127	
Site Alias: None Site Description: State Refuge part of Marsh Island Refuge	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 34' 03.465" N	
	Longitude:	91° 44' 24.156" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat / Marshland and fisheries	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C3		Location Information	
Name: Entrance to Hawkins Bayou from East Cote Blanche Bay		Parish:	Iberia
		Quad Name:	Lake Point
Priority: C		Quad Number:	2909127
Site Alias: None Site Description: State Refuge part of Marsh Island Refuge		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 33' 43.722" N
		Longitude:	91° 44' 04.766" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat / Marshland and fisheries	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

POINT CHEVREUIL QUAD

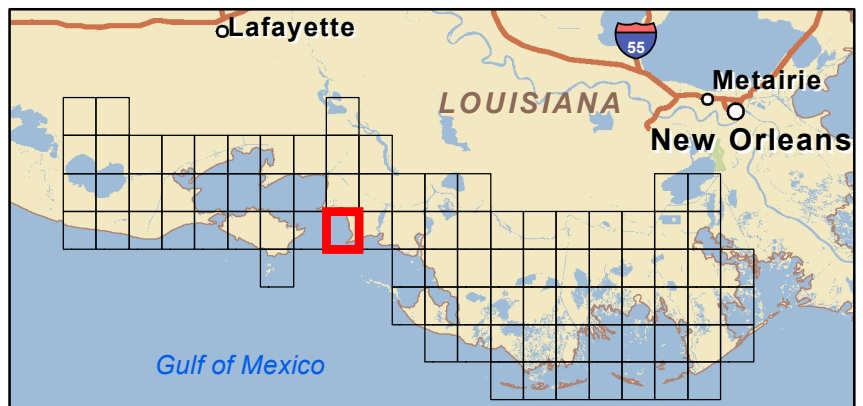


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles

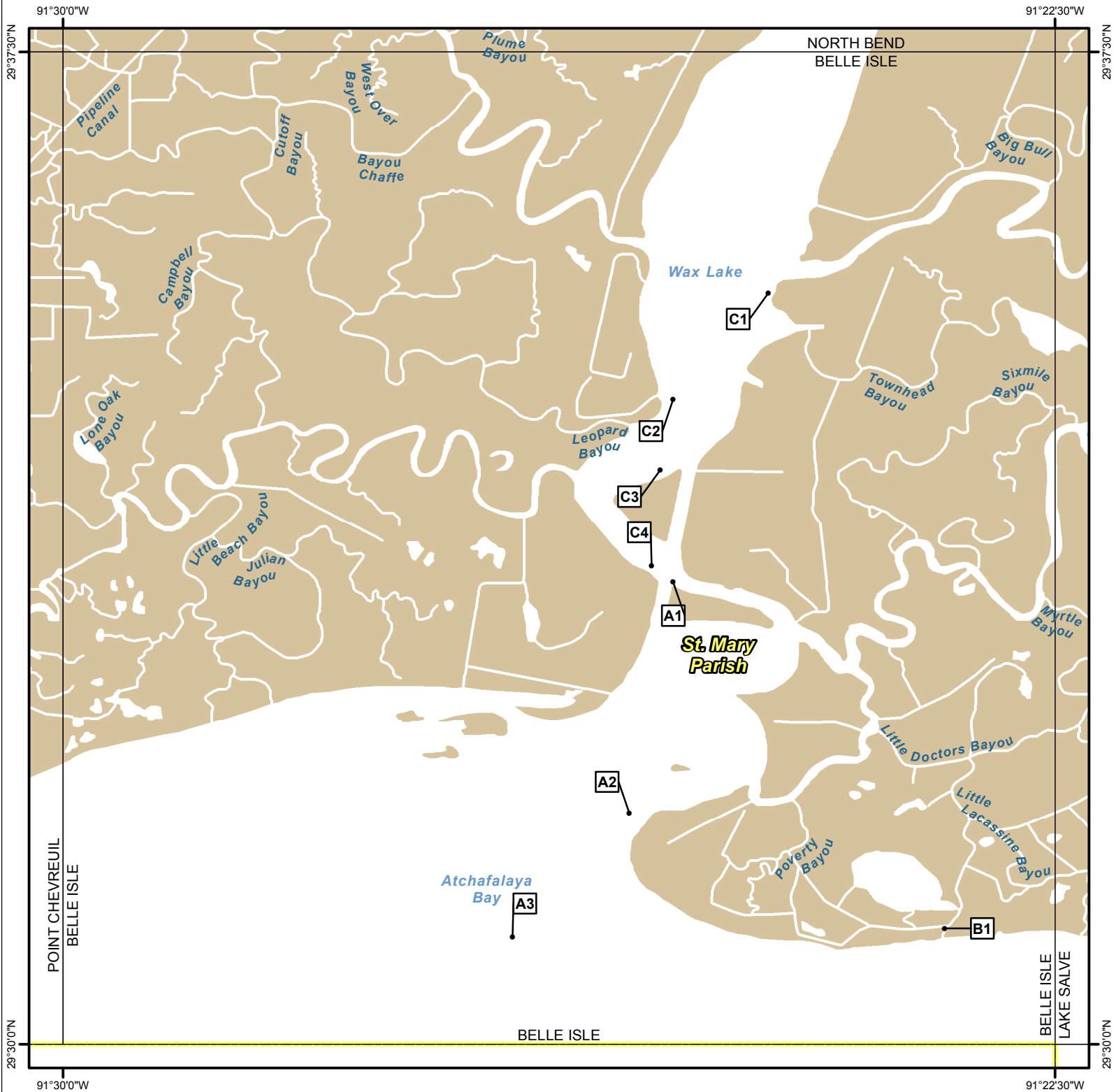


Site Information: A1		Location Information	
Name: Burns Point Rec Area		Parish:	St. Mary
		Quad Name:	Point Chevreuil
Priority: A		Quad Number:	2909128
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Recreation Area		Latitude:	29° 34' 30.235" N
		Longitude:	91° 32' 18.023" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 1B		Resources At Risk Comments: Recreation area / Sensitive Habitat	
ESI Description 1B: Exposed, solid man-made structures			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

Site Information: A2		Location Information	
Name: Horseshoe Bayou		Parish:	St. Mary
		Quad Name:	Point Chevreuil
Priority: A		Quad Number:	2909128
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Near Burns Point		Latitude:	29° 33' 05.313" N
		Longitude:	91° 31' 34.670" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C/7		Resources At Risk Comments: Recreation area	
ESI Description 10C: Freshwater swamps / 7: Exposed tidal flats			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Duval Arthur St Mary OEP		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: A3		Location Information	
Name: Multiple Bayous	Parish: St. Mary	Quad Name: Point Chevreuil	
Priority: A	Quad Number: 2909128		
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?: N		
Site Description: Sensitive Habitat	Latitude: 29° 31' 43.687" N		
	Longitude: 91° 31' 57.032" W		
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B/7		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10B: Freshwater marshes / 7: Exposed tidal flats			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

BELLE ISLE QUAD



Legend

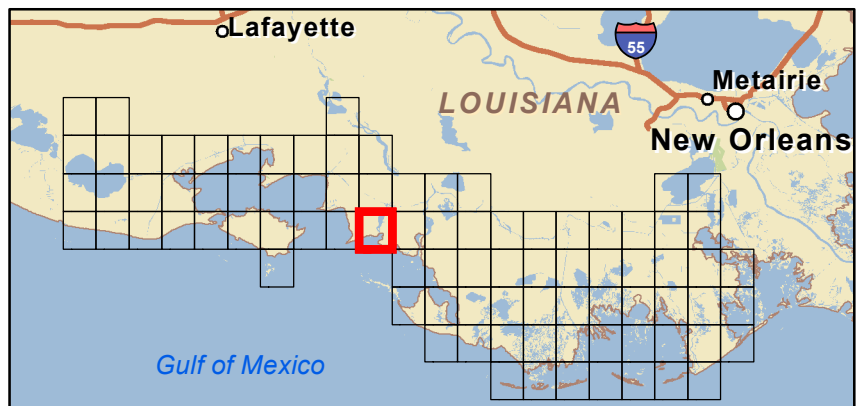
- GRP Sites
- Quad Boundaries
- Parish Boundaries

Kilometers

0 0.5 1 2 3

Miles

0 0.5 1 2 3



Site Information: A1		Location Information	
Name: Bayou off Wax Lake Outlet		Parish:	St. Mary
		Quad Name:	Belle Isle
Priority: A		Quad Number:	2909129
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 33' 29.616" N
		Longitude:	91° 25' 23.209" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Wax Delta		Parish:	St. Mary
		Quad Name:	Belle Isle
Priority: A		Quad Number: 2909129	
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 31' 44.793" N
Site Description: State Refuge part of Atchafalaya Delta WMA		Longitude:	
		91° 25' 43.130" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
		Sensitive Habitat	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Mike Island		Parish:	St. Mary
		Quad Name:	Belle Isle
Priority: A		Quad Number:	2909129
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: Wading Bird Rookery		Latitude:	29° 30' 48.701" N
		Longitude:	91° 26' 36.196" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
		Wading Bird Rookery	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: B1		Location Information	
Name: Big Lacassine Bayou		Parish:	St. Mary
		Quad Name:	Belle Isle
Priority: B		Quad Number:	2909129
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Belle Isle Lake		Latitude:	29° 30' 52.579" N
		Longitude:	91° 23' 20.048" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C/10B		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps / 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Ray Clement LA DEQ		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

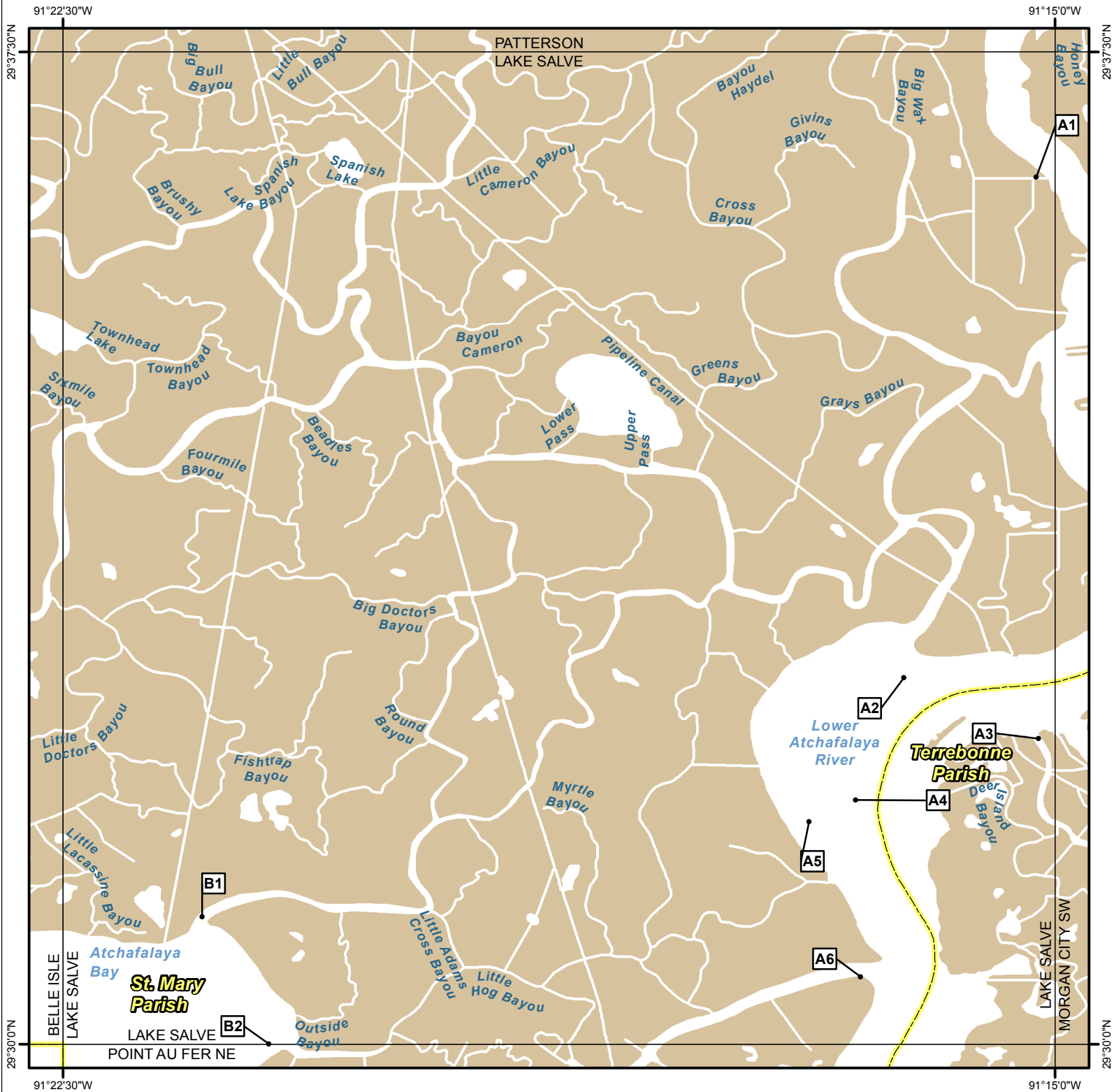
Site Information: C1		Location Information	
Name: East of Wax Lake Inlet		Parish:	St. Mary
		Quad Name:	Belle Isle
Priority:	C	Quad Number:	2909129
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 35' 40.757" N
		Longitude:	91° 24' 39.996" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 1000-1500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DNR/CPRA		State Submitter: DNR/CPRA	
Submit Date: 2013.04.16		State Comments:	

Site Information: C2		Location Information	
Name: Wax Lake Inlet	Parish:	St. Mary	
	Quad Name:	Belle Isle	
Priority: C	Quad Number:	2909129	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
Site Description: Inlet	Latitude:	29° 34' 52.393" N	
	Longitude:	91° 25' 23.344" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DNR/CPRA		State Submitter: DNR/CPRA	
Submit Date: 2013.04.16		State Comments:	

Site Information: C3		Location Information	
Name: Belle Isle Inlet (north)		Parish:	St. Mary
		Quad Name:	Belle Isle
Priority: C		Quad Number:	2909129
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Inlet		Latitude:	29° 34' 20.227" N
		Longitude:	91° 25' 29.217" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DNR/CPRA		State Submitter: DNR/CPRA	
Submit Date: 2013.04.16		State Comments:	

Site Information: C4		Location Information	
Name: Belle Isle Inlet (south)		Parish:	St. Mary
		Quad Name:	Belle Isle
Priority:	C	Quad Number:	2909129
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Inlet		Latitude:	29° 33' 37.091" N
		Longitude:	91° 25' 32.954" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DNR/CPRA		State Submitter: DNR/CPRA	
Submit Date: 2013.04.16		State Comments:	

LAKE SALVE QUAD



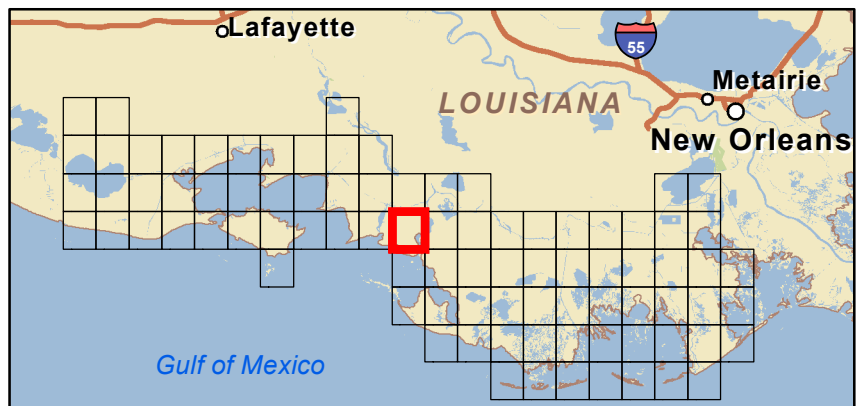
Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



Kilometers

Miles



Site Information: A1		Location Information	
Name: Canal at Atchafalaya River		Parish:	St. Mary
		Quad Name:	Lake Salve
Priority: A		Quad Number:	2909130
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 36' 33.234" N
		Longitude:	91° 15' 08.426" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Bayou at Atchafalaya River (north)	Parish:	St. Mary	
	Quad Name:	Lake Salve	
Priority: A	Quad Number:	2909130	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 32' 46.077" N	
Site Description: Sensitive Habitat	Longitude:	91° 16' 08.456" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 1500-2000 ft			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Sword Bayou at Atchafalaya River	Parish:	Terrebonne	
	Quad Name:	Lake Salve	
Priority: A	Quad Number:	2909130	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 32' 18.634" N	
Site Description: Sensitive Habitat	Longitude:	91° 15' 07.494" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments:	

Site Information: A4		Location Information	
Name: Horse Shoe Island		Parish:	St. Mary
		Quad Name:	Lake Salve
Priority: A		Quad Number: 2909130	
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Loafing Bird/Nesting		Latitude:	29° 31' 50.695" N
		Longitude:	91° 16' 30.418" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description		Loafing Bird/Nesting	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A5		Location Information	
Name: Bayou at Atchafalaya River (south)		Parish:	St. Mary
		Quad Name:	Lake Salve
Priority:	A	Quad Number:	2909130
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 31' 40.740" N
		Longitude:	91° 16' 51.545" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By: DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A6		Location Information	
Name: Atchafalaya River at Shell Island Pass		Parish:	St. Mary
		Quad Name:	Lake Salve
Priority: A		Quad Number:	2909130
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 30' 30.658" N
		Longitude:	91° 16' 28.260" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: B1		Location Information	
Name: Lake Salve Outlet (north)		Parish:	St. Mary
		Quad Name:	Lake Salve
Priority: B		Quad Number:	2909130
Site Alias: None		Mile Marker:	
Site Description: Lake Salve area		Managed (Y/N)?:	Y - Wildlife Area
		Latitude:	29° 30' 57.789" N
		Longitude:	91° 21' 27.026" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
		Marshland/wildlife management	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Duval Arthur St Mary OEP		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B2		Location Information	
Name: Lake Salve Outlet (south)		Parish:	St. Mary
		Quad Name:	Lake Salve
Priority: B		Quad Number:	2909130
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: Lake Salve area		Latitude:	29° 30' 00.081" N
		Longitude:	91° 20' 56.807" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Marshland/wildlife mgmt.			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Ray Clement LA DEQ		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

MORGAN CITY SW QUAD



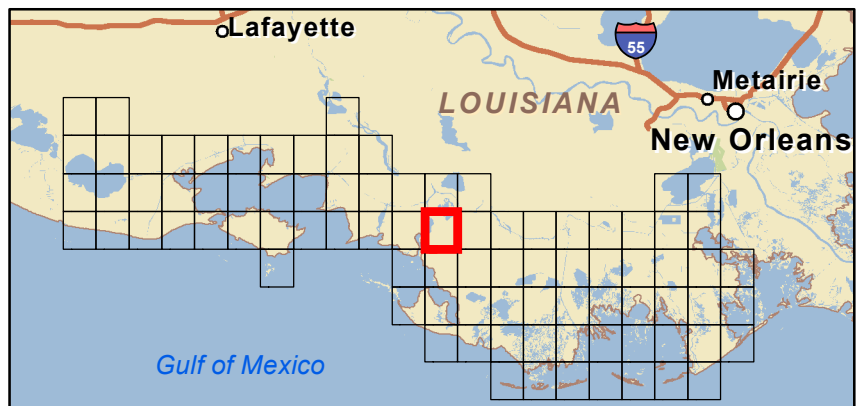
Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Canal at Atchafalaya River (north)	Parish:	St. Mary	
	Quad Name:	Morgan City SW	
Priority: A	Quad Number:	2909131	
Site Alias: N/A	Mile Marker:	123.7	
	Managed (Y/N)?:	N	
Site Description: Sensitive Habitat	Latitude:	29° 36' 26.716" N	
	Longitude:	91° 14' 40.548" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Bayou at Atchafalaya River		Parish:	St. Mary
		Quad Name:	Morgan City SW
Priority:	A	Quad Number:	2909131
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 36' 08.639" N
		Longitude:	91° 13' 20.037" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Canal at Atchafalaya River (central)	Parish: St. Mary		
	Quad Name: Morgan City SW		
Priority: A	Quad Number: 2909131		
Site Alias: N/A	Mile Marker: 125.1		
	Managed (Y/N)?: N		
Site Description: Sensitive Habitat	Latitude: 29° 35' 18.089" N		
	Longitude: 91° 14' 21.233" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A4		Location Information	
Name: Canal at Atchafalaya River (south)	Parish: St. Mary	Quad Name: Morgan City SW	
Priority: A	Quad Number: 2909131		
Site Alias: N/A	Mile Marker: 126.5	Managed (Y/N)?: N	
Site Description: Sensitive Habitat	Latitude: 29° 34' 09.910" N	Longitude: 91° 14' 12.252" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: C1		Location Information	
Name: Turtle Bayou at Bayou Chene		Parish:	Terrebonne
		Quad Name:	Morgan City SW
Priority:	C	Quad Number:	2909131
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 35' 24.564" N
		Longitude:	91° 09' 29.422" W
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: LDWF/DEQ/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: Agencies concur with point	

Site Information: C2		Location Information	
Name: Kent Bayou at Turtle Bayou		Parish:	Terrebonne
		Quad Name:	Morgan City SW
Priority: C		Quad Number:	2909131
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 33' 11.788" N
		Longitude:	91° 08' 28.561" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: LDWF/DEQ/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: Agencies concur with point	

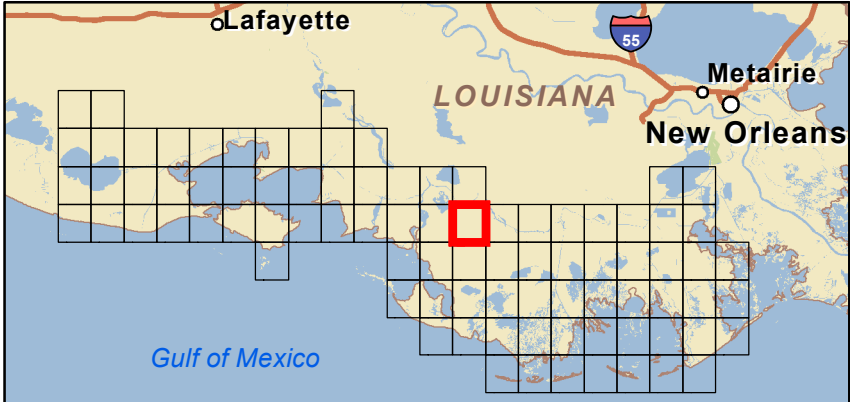
Site Information: C3		Location Information	
Name: Little Horn Bayou at Bayou Chene	Parish:	Terrebonne	
	Quad Name:	Morgan City SW	
Priority: C	Quad Number:	2909131	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 32' 55.104" N	
Site Description: Sensitive Wetlands	Longitude:	91° 12' 18.992" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ		State Submitter: LDWF/DEQ/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: Agencies concur with point	

MORGAN CITY SE QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: A1		Location Information	
Name: Bayou at Bayou Boeuf		Parish:	Terrebonne
		Quad Name:	Morgan City Se
Priority: A		Quad Number:	2909132
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 37' 15.912" N
		Longitude:	91° 05' 21.884" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: C1		Location Information	
Name: Bayou Chene		Parish:	St. Mary
		Quad Name:	Morgan City Se
Priority:	C	Quad Number:	2909132
Site Alias: N/A		Mile Marker:	86.2
		Managed (Y/N)?:	N
Site Description: Sensitive Habitat		Latitude:	29° 37' 27.863" N
		Longitude:	91° 05' 34.606" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: C2		Location Information	
Name: Cocodrie Bayou at Intracoastal Waterway	Parish:	Terrebonne	
	Quad Name:	Morgan City SE	
Priority: C	Quad Number:	2909132	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 37' 22.159" N	
Site Description: Sensitive Wetlands	Longitude:	91° 02' 17.599" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: C3		Location Information	
Name: Turtle Bayou at Canal (north)		Parish:	Terrebonne
		Quad Name:	Morgan City SE
Priority: C		Quad Number:	2909132
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 32' 34.292" N
		Longitude:	91° 06' 43.547" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: C4		Location Information	
Name: Turtle Bayou at 70 Mile Canal		Parish:	Terrebonne
		Quad Name:	Morgan City SE
Priority:	C	Quad Number:	2909132
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 32' 08.878" N
		Longitude:	91° 05' 01.244" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

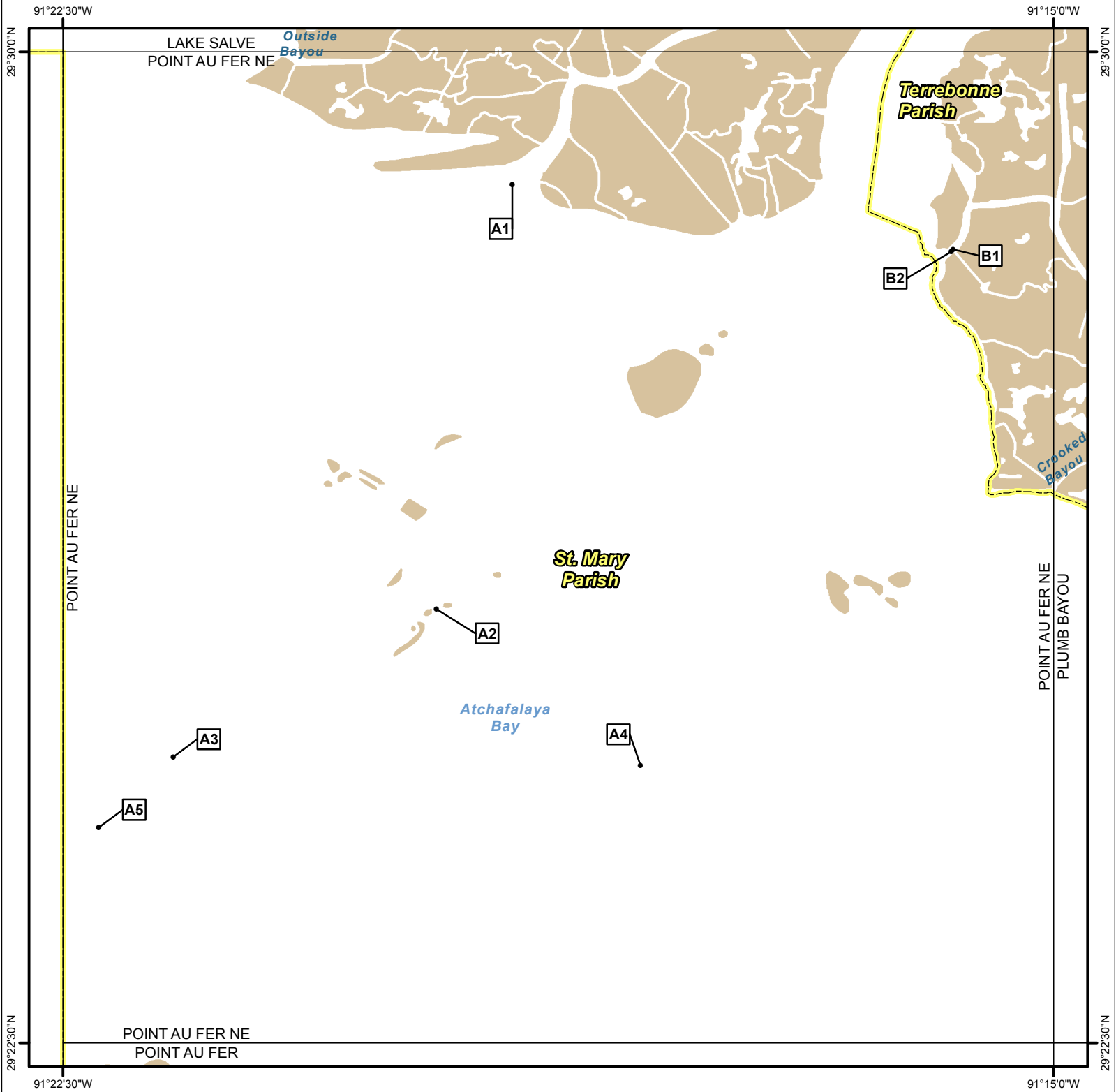
Site Information: C5		Location Information	
Name: Bayou Penchant at Canal (north)		Parish:	Terrebonne
		Quad Name:	Morgan City SE
Priority:	C	Quad Number:	2909132
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 31' 13.308" N
		Longitude:	91° 00' 02.769" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: C6		Location Information	
Name: Turtle Bayou at Canal (south)	Parish:	Terrebonne	
	Quad Name:	Morgan City SE	
Priority: C	Quad Number:	2909132	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 31' 07.078" N	
Site Description: Sensitive Wetlands	Longitude:	91° 04' 15.889" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: C7		Location Information	
Name: Bayou Penchant at Piquant Bayou	Parish:	Terrebonne	
	Quad Name:	Morgan City SE	
Priority: C	Quad Number:	2909132	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 30' 53.725" N	
Site Description: Sensitive Wetlands	Longitude:	91° 00' 33.060" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

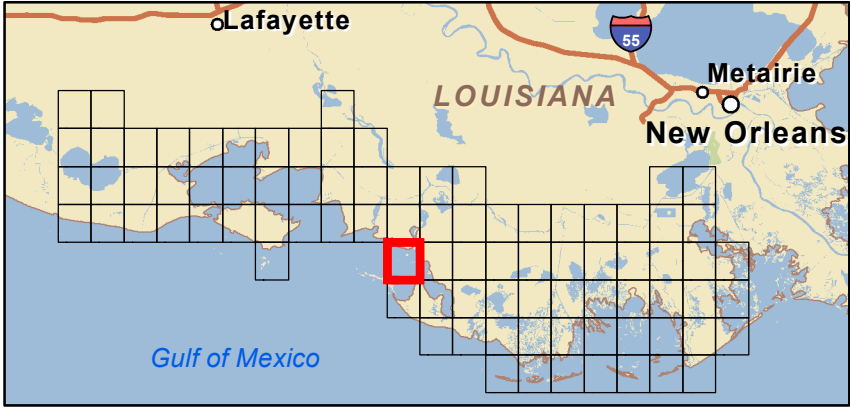
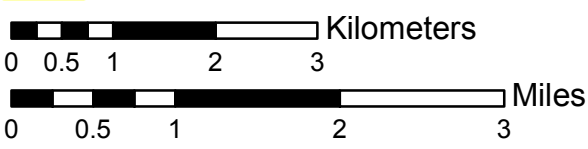
Site Information: C8		Location Information	
Name: Bayou Penchant at Canal (south)	Parish:	Terrebonne	
	Quad Name:	Morgan City SE	
Priority: C	Quad Number:	2909132	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 30' 11.956" N	
Site Description: Sensitive Wetlands	Longitude:	91° 02' 55.177" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

POINT AU FER NE QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: A1		Location Information	
Name: Shell Island Pass		Parish:	St. Mary
		Quad Name:	Point Au Fer Ne
Priority: A		Quad Number:	2909138
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive habitat		Latitude:	29° 29' 00.000" N
		Longitude:	91° 19' 05.882" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A2		Location Information	
Name: God Island		Parish:	St. Mary
		Quad Name:	Point Au Fer Ne
Priority: A		Quad Number:	2909138
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: Wading Birds		Latitude:	29° 25' 47.055" N
		Longitude:	91° 19' 40.494" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10B/9A		Resources At Risk Comments: Wading Birds	
ESI Description 10B: Freshwater marshes / 9A: Sheltered tidal flats			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A3		Location Information	
Name: Avocet Island		Parish:	St. Mary
		Quad Name:	Point Au Fer Ne
Priority:	A	Quad Number:	2909138
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: Bird Nesting		Latitude:	29° 24' 39.806" N
		Longitude:	91° 21' 39.904" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description		Bird Nesting	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

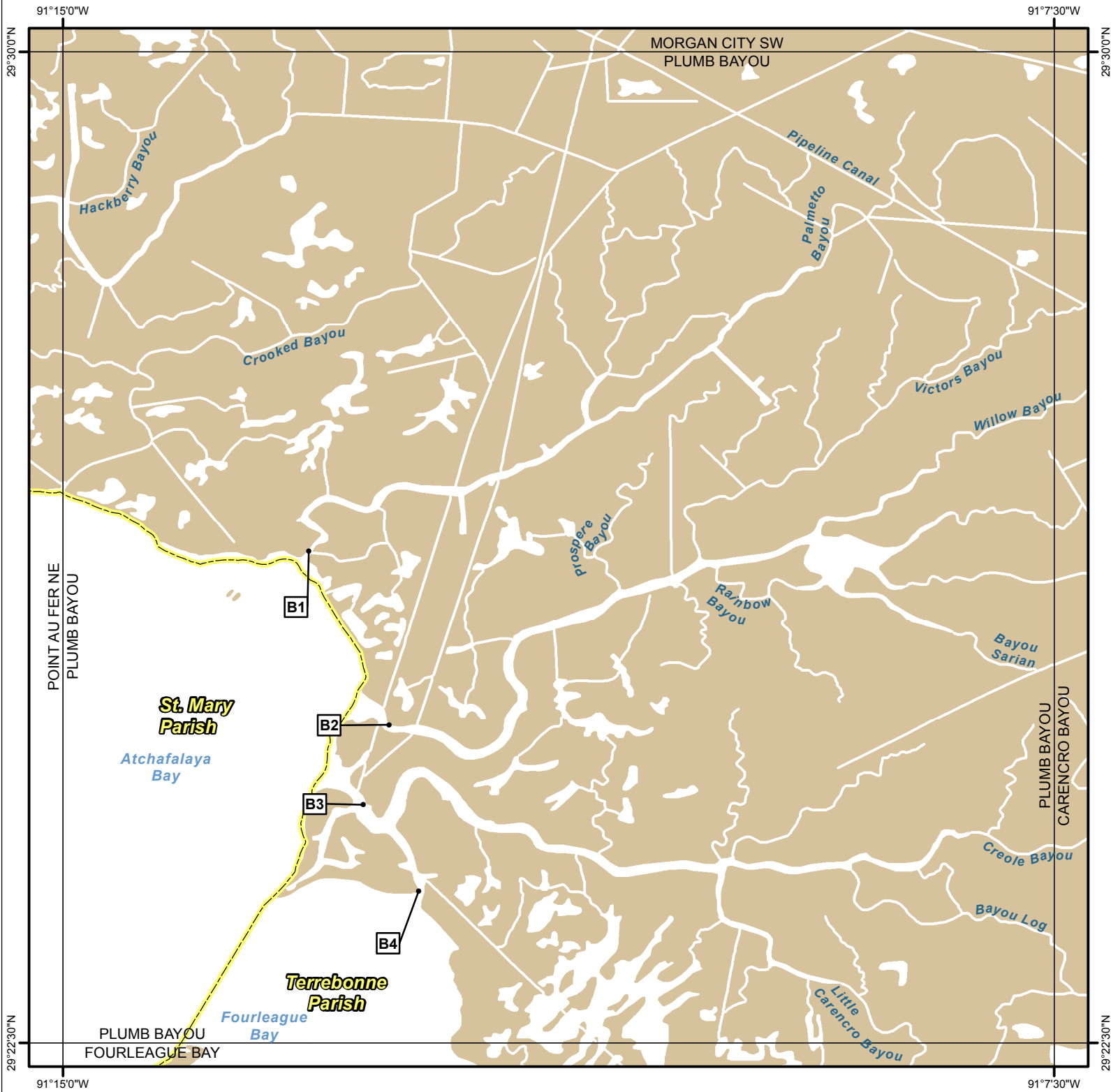
Site Information: A4		Location Information	
Name: Bennett Island		Parish:	St. Mary
		Quad Name:	Point Au Fer Ne
Priority: A		Quad Number: 2909138	
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: Sea Birds		Latitude:	29° 24' 35.881" N
		Longitude:	91° 18' 07.585" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sea Birds	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A5		Location Information	
Name: Donna island		Parish:	St. Mary
		Quad Name:	Point Au Fer Ne
Priority: A		Quad Number:	2909138
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: Rookeries		Latitude:	29° 24' 07.771" N
		Longitude:	91° 22' 13.901" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Wildlife Mgmt. / Includes All 5 Bird Islands	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Ray Clement LA DEQ		State Submitter: DEQ/St. Mary Parish	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B1		Location Information	
Name: Deer Island Bayou at Atchafalaya River		Parish:	Terrebonne
		Quad Name:	Point Au Fer Ne
Priority: B		Quad Number:	2909138
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands/Fishing		Latitude:	29° 28' 30.385" N
		Longitude:	91° 15' 45.653" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Wetlands/Fishing	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B2		Location Information	
Name: Deer Island Bayou		Parish:	Terrebonne
		Quad Name:	Point Au Fer Ne
Priority: B		Quad Number:	2909138
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Inlet		Latitude:	29° 28' 29.264" N
		Longitude:	91° 15' 46.378" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DNR/CPRA		State Submitter: DNR/CPRA	
Submit Date: 2013.04.16		State Comments:	

PLUMB BAYOU QUAD

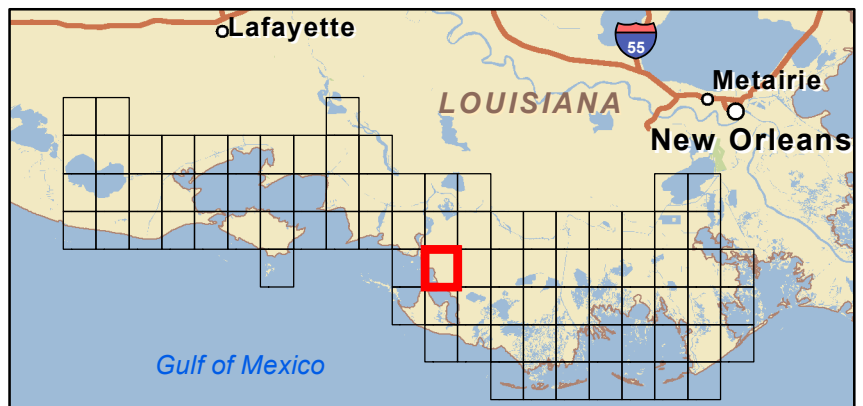


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



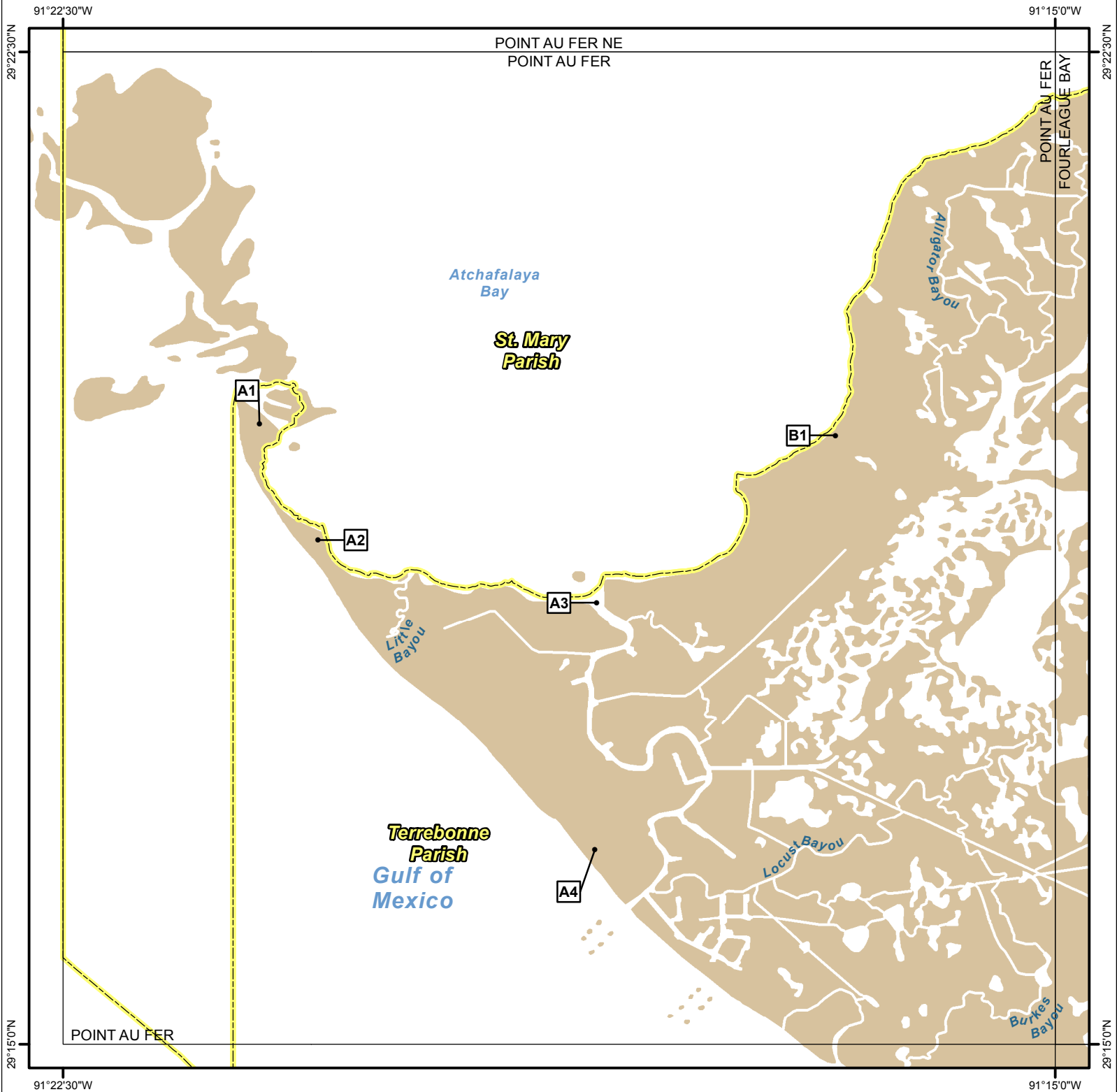
Site Information: B1		Location Information	
Name: Palmetto Bayou at Sweet Bay Lake		Parish:	Terrebonne
		Quad Name:	Plumb Bayou
Priority: B		Quad Number:	2909139
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands/Fishing		Latitude:	29° 26' 13.298" N
		Longitude:	91° 13' 08.466" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands/Fishing	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B2		Location Information	
Name: Plumb Bayou at Sweet Bay Lake		Parish:	Terrebonne
		Quad Name:	Plumb Bayou
Priority:	B	Quad Number:	2909139
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands/Fishing		Latitude:	29° 24' 54.358" N
		Longitude:	91° 12' 31.956" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10B/10C		Resources At Risk Comments: Sensitive Wetlands/Fishing	
ESI Description 10B: Freshwater marshes / 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B3		Location Information	
Name: Creole Bayou at Sweet Bay Lake		Parish:	Terrebonne
		Quad Name:	Plumb Bayou
Priority:	B	Quad Number:	2909139
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands/Fishing		Latitude:	29° 24' 18.017" N
		Longitude:	91° 12' 43.606" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands/Fishing	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B4		Location Information	
Name: Oyster Bayou at Sweet Bay Lake		Parish:	Terrebonne
		Quad Name:	Plumb Bayou
Priority:	B	Quad Number:	2909139
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands/Fishing		Latitude:	29° 23' 38.929" N
		Longitude:	91° 12' 18.575" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B/6A		Resources At Risk Comments: Sensitive Wetlands/Fishing	
ESI Description 10B: Freshwater marshes / 6A: Gravel beaches			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

POINT AU FER QUAD

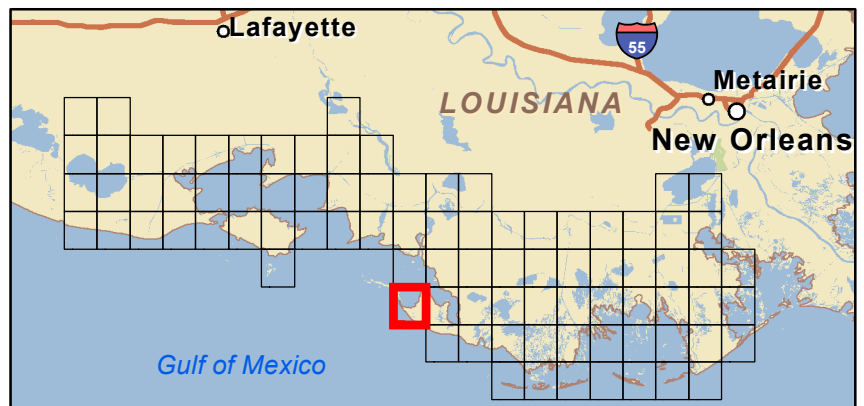


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Shell Island Pass (entrance to Atchafalaya Delta WMA)	Parish:	Terrebonne	
	Quad Name:	Point Au Fer	
Priority: A	Quad Number:	2909146	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 19' 41.384" N	
Site Description: State Refuge part of Atchafalaya Delta WMA	Longitude:	91° 21' 00.938" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A/6A/2A		Resources At Risk Comments: Gull & Tern nesting area and critical Piping Plover habitat	
ESI Description 10A: Salt- and brackish-water marshes / 6A: Gravel beaches / 2A: Exposed Wave-cut Platform in clay			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

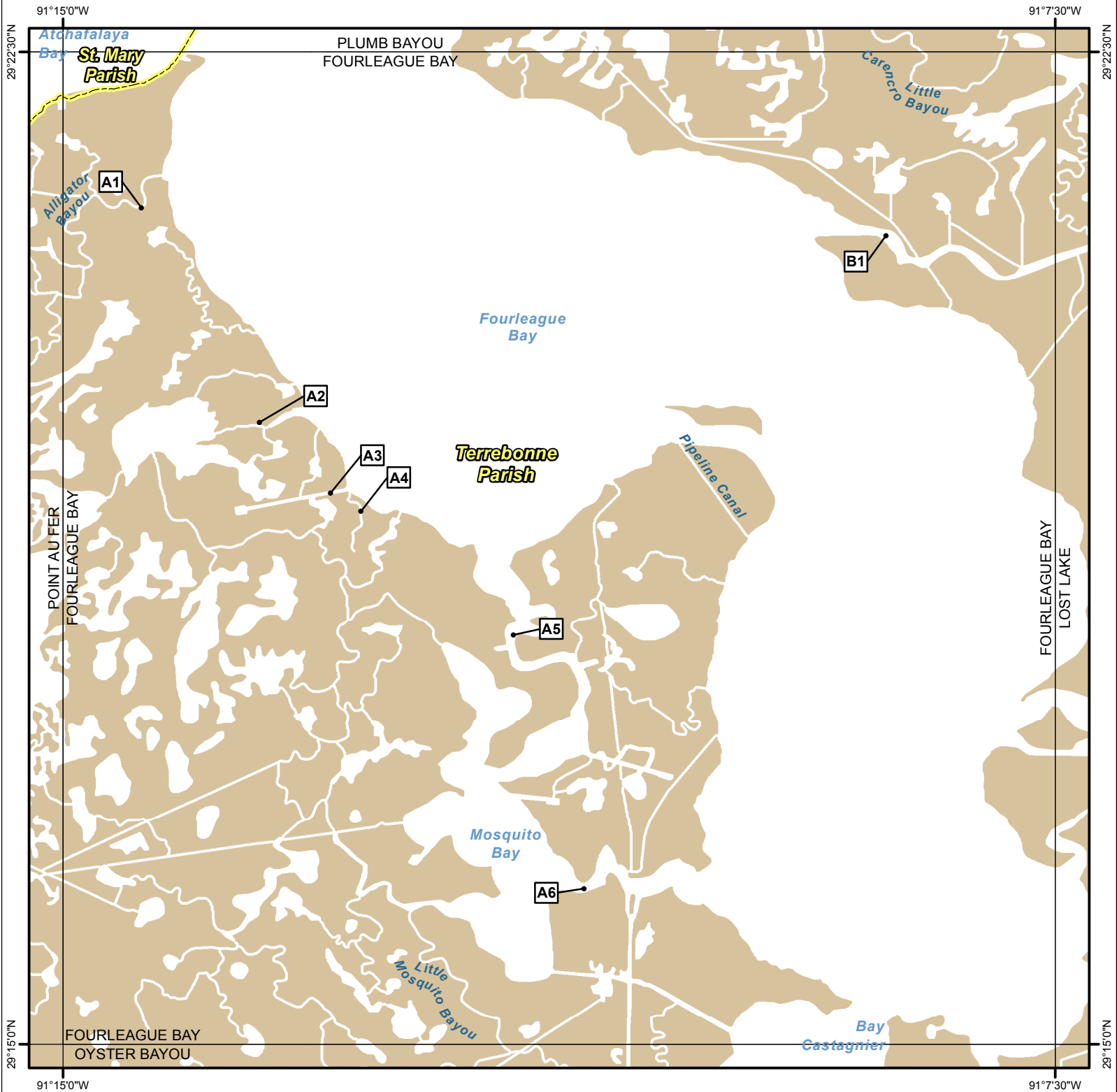
Site Information: A2		Location Information	
Name: All islands of lower Atchafalaya Delta WMA	Parish:	Terrebonne	
	Quad Name:	Point Au Fer	
Priority: A	Quad Number:	2909146	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 18' 48.681" N	
Site Description: State Refuge part of Atchafalaya Delta WMA	Longitude:	91° 20' 34.311" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A/6A/2A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes / 6A: Gravel beaches / 2A: Exposed Wave-cut Platform in clay			
		Bird nesting colonies - gulls, terns, skimmers, wading birds, mottled ducks, etc.	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A3		Location Information	
Name: Burkes Bayou	Parish:	Terrebonne	
	Quad Name:	Point Au Fer	
Priority: A	Quad Number:	2909146	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 18' 20.250" N	
Site Description: Sensitive Habitat	Longitude:	91° 18' 27.974" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A4		Location Information	
Name: Oyster Bayou	Parish:	Terrebonne	
	Quad Name:	Point Au Fer	
Priority: A	Quad Number:	2909146	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 16' 28.204" N	
Site Description: Sandy Shore For Shoal Bird Nesting Area	Longitude:	91° 18' 28.731" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A/6A		Resources At Risk Comments: Sandy Shore For Shoal Bird Nesting Area	
ESI Description 10A: Salt- and brackish-water marshes / 6A: Gravel beaches			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: B1		Location Information	
Name: Point Au Fer Island		Parish:	Terrebonne
		Quad Name:	Point Au Fer
Priority: B		Quad Number:	2909146
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands/Wildlife		Latitude:	29° 19' 36.135" N
		Longitude:	91° 16' 39.519" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A/6A/2A		Resources At Risk Comments: Sensitive Wetlands/Wildlife	
ESI Description 10A: Salt- and brackish-water marshes / 6A: Gravel beaches / 2A: Exposed Wave-cut Platform in clay			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

FOURLEAGUE BAY QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

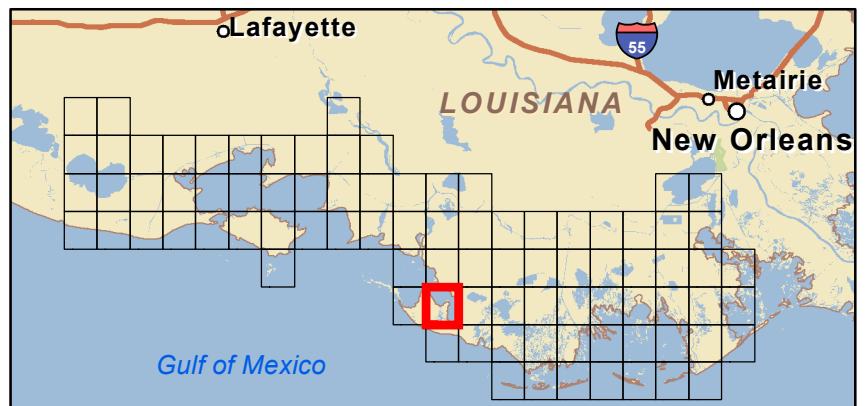


Kilometers

0 0.5 1 2 3

Miles

0 0.5 1 2 3



Site Information: A1		Location Information	
Name: Alligator Bayou	Parish:	Terrebonne	
	Quad Name:	Fourleague Bay	
Priority: A	Quad Number:	2909147	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 21' 19.442" N	
Site Description: Sensitive Habitat	Longitude:	91° 14' 24.628" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Canal (north)	Parish: Terrebonne	Quad Name: Fourleague Bay	
Priority: A	Quad Number: 2909147		
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?: N		
Site Description: Sensitive Habitat	Latitude: 29° 19' 42.024" N		
	Longitude: 91° 13' 31.023" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Canal (central)	Parish: Terrebonne	Quad Name: Fourleague Bay	
	Priority: A	Quad Number: 2909147	
Site Alias: N/A	Mile Marker:	Managed (Y/N)?: N	
Site Description: Sensitive Habitat	Latitude: 29° 19' 09.946" N	Longitude: 91° 12' 58.773" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A4		Location Information	
Name: Wildcat Bayou		Parish:	Terrebonne
		Quad Name:	Fourleague Bay
Priority: A		Quad Number: 2909147	
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 19' 01.697" N
		Longitude:	91° 12' 44.971" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A5		Location Information	
Name: Canal (south)	Parish: Terrebonne	Quad Name: Fourleague Bay	
	Quad Number: 2909147	Mile Marker:	
Priority: A	Managed (Y/N)?: N	Latitude: 29° 18' 05.580" N	
Site Alias: N/A	Longitude: 91° 11' 35.678" W	Site Description: Sensitive Habitat	
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments: Sensitive Habitat		
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio	State Submitter: DEQ-Shane Miller and Steve Lorio		
Submit Date: 2013.04.16	State Comments: Sensitive Habitat		

Site Information: A6		Location Information	
Name: Mosquito Bayou	Parish: Terrebonne	Quad Name: Fourleague Bay	
Priority: A	Quad Number: 2909147		
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?: N		
Site Description: Sensitive Habitat	Latitude: 29° 16' 10.634" N		
	Longitude: 91° 11' 03.701" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: B1		Location Information	
Name: Big Carencro Bayou at Fourleague Bay		Parish:	Terrebonne
		Quad Name:	Fourleague Bay
Priority: B		Quad Number:	2909147
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive wetlands		Latitude:	29° 21' 06.906" N
		Longitude:	91° 08' 46.703" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Appendix A: GRP Content Contributors

Captain Peter Gautier	Federal On-Scene Coordinator
Captain David McClellan	Federal On-Scene Coordinator
Captain Jonathan Burton	Federal On-Scene Coordinator
Brian Wynn	Louisiana Oil Spill Coordinators Office
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David Gisclair	Louisiana Oil Spill Coordinators Office
Rebecca Broussard	Vermilion Parish OEP
Chris Boudreaux	Lafourche Parish OEP
Duval Arthur	Saint Mary Parish OEP
Earl Eues	Terrebonne Parish OEP
Prescott Marshall	Iberia Parish OEP
Todd Folse	Coastal Protection and Restoration Authority
Ann Howard	Coastal Protection and Restoration Authority
Chip McGimsey	State Historic Preservation Officer
Kyle Jellison	National Oceanic and Atmospheric Administration
Jeff Dauzat	Louisiana Department of Environmental Quality
Laura Carver	Louisiana Department of Wildlife and Fisheries
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LCDR Keith Smith	U.S. Coast Guard
LCDR Chance Greene	U.S. Coast Guard
LCDR Lushan Hannah	U.S. Coast Guard
Brian Black	U.S. Coast Guard
Tanner Kneese	The Response Group
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Terry Posey	Oil Mop Environmental Services
Ronald Johnson	Oil Mop Environmental Services
Cliff Collins	Oil Mop Environmental Services

Appendix B: GRP Comments/Corrections/Suggestions

If you have any questions regarding this document or find any errors, please notify the following agency:

U.S. Coast Guard

MSU Morgan City

Phone number: (985) 380-5330

Internet/E-mail Address: brian.k.black@uscg.mil

Address: Commander
U.S. Coast Guard
800 David Drive
Morgan City, LA 70380
Attn: Brian Black

Comments/Corrections/Suggestions Form

Directions: Fill in your name, address, agency, and phone number. Fill in the blanks regarding the location of information in the plan being commented on. Make Comments in space provided. Add extra sheets as necessary.

Name:	_____	Title:	_____	Agency:	_____
Address:	_____				
City:	_____	State/Province:	___	Zip/Postal Code:	_____
Phone:	(____)	E-Mail:	_____		

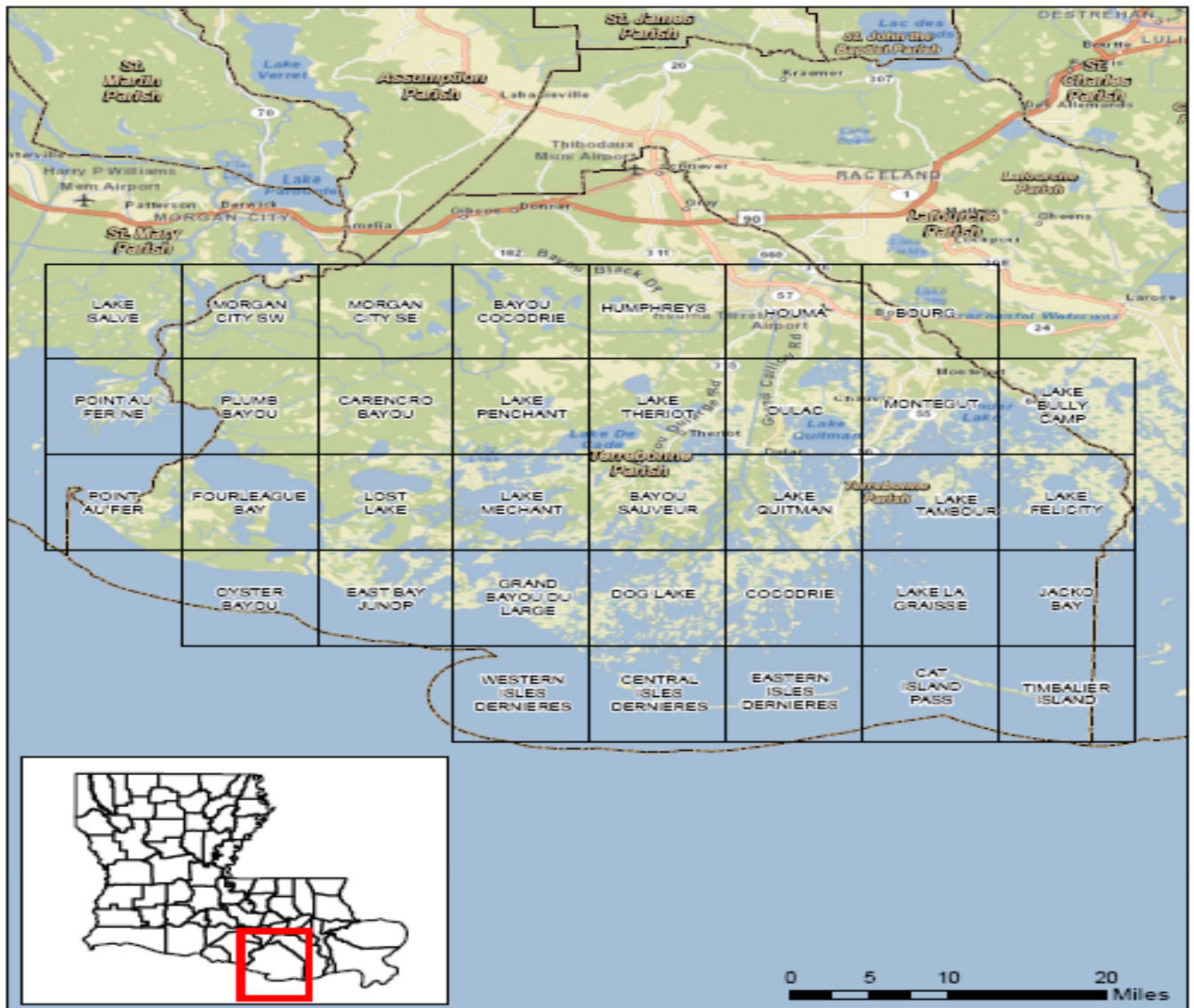
Site:	_____	Page:	_____
Location on page (Chapter, section, paragraph) (e.g. 2.1, paragraph 3):			

Comments:	_____

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2013

Geographic Response Plan Terrebonne Parish



Area Contingency Plan

U. S. Coast Guard

MSU Morgan City

800 David Drive

Morgan City, LA 70380



Terrebonne Parish GRP Signature Page

A blue ink signature of David McClellan, written in a cursive style.

David McClellan
Captain, US Coast Guard
Commander, MSU Morgan City
Federal On-Scene Coordinator, Morgan City

A blue ink signature of Brian Wynne, written in a cursive style.

Brian Wynne Acting Louisiana Oil Spill Coordinator

A black ink signature of Michel Claudet, written in a cursive style.

Michel Claudet
Terrebonne Parish President

Record of Changes

Date	Change Number	Summary of Changes	Initials of person making changes

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Terrebonne Parish Geographic Response Plan

Introduction

This Geographic Response Plan (GRP) is an annex to the Southeast Louisiana Area Contingency Plan (SOUTHEAST LOUISIANA ACP) and a key element of both facility and vessel contingency plans. This GRP has two main functions:

From a planning perspective, the GRP provides a description of sensitive biological, cultural, and economic resources that must be addressed to be in compliance with:

- The National Oil and Hazardous Substance Pollution Contingency Plan (NCP, 40 CFR Part 300.210(3)(i)). Area Contingency Plans are required to describe areas of special economic and environmental importance that could be impacted during an oil spill.
- The National Historic Preservation Act of 1966 contains applicable, relevant and appropriate requirements. The GRPs also address sensitive historic and prehistoric resources.

From an operational perspective, the GRP guides responders in the first 24-48 hours of an oil spill by:

- Providing a prioritized list of tactical response strategies to be implemented during the early hours of an oil spill (usually before the formation of the Unified Command);
- Providing detailed information for booming strategies that could be utilized to minimize impacts to predetermined sensitive resources.

Once the Unified Command is formed, additional operational strategies and tactics will be relayed to the field in the form of the ICS-204 work assignment sheets.

Because the GRP is the primary tool used during an initial phase of the response and fairly broad in their scope, they are not intended to minimize impacts to all possible sensitive areas that could be affected by an oil spill. Likewise, the GRPs are not intended to be an exhaustive list of all the tactical strategies that could, or should, be implemented during a spill.

Scope

This Geographic Response Plan (GRP) is intended to help the first responders of an oil discharge or hazardous substance release avoiding the initial confusion that generally accompanies any incident. This document serves as the federal and state on-scene-coordinators “guidance” during an incident in the area covered by this GRP (see Section 2 for area covered). As such it has been approved by the U.S. Coast Guard MSU Morgan City, the Louisiana Oil Spill Coordinator’s Office, and Terrebonne Parish. Changes to this document are expected as testing is conducted through drills, site visits, and actual use in an incident. To submit comments, corrections, or suggestions please refer to Appendix B.

The scope of this GRP is to identify sensitive sites to be considered for protection in the first 24 to 48 hours of an incident and the generic response strategy for this site considering unique characteristics, noted hydrology and climatic considerations. This index is not all encompassing as sites not identified in this index may need to be evaluated for protection as an incident progresses.

GRPs only address protection of sensitive public resources. It is the responsibility of private resource owners and/or potentially liable parties to address protection of private resources (such as commercial marina and private water intakes).

Development

This Index has been developed for the Coastal Zone, as defined in the National Contingency Plan (40 CFR Part 300) for Terrebonne Parish. It is prepared through the efforts and cooperation of Louisiana State Trustee Agencies, Parish Representatives, and Federal Trustee Agencies, other federal and state agencies, response organizations, and local emergency responders. This Index was developed through workshops involving federal, state, and local stakeholders. Workshop participants identified resources which require protection and developed operational strategies.

Following the workshops, the data gathered was processed and reproduced in the form of maps and matrices which appear in Chapter 3. The maps were generated using ArcGIS, and the tables were created using Microsoft Access.

The first goal of a GRP is to identify resources needing protection; response resources needed; tribal and local response community contacts; and local conditions that may affect response strategies.

Secondly, response strategies were developed based on the sensitive resources noted hydrology and climatic considerations. Individual response strategies identify the appropriate boom implementation.

Draft maps and matrices were sent out for review and consideration of strategy viability.

Verification at local, state, and federal levels was conducted and changes proposed by the participants were included in a semi-final draft, which was offered for final review.

Finally, the final GRP was compiled along with site description, reference maps, and information to support logistical needs.

Guiding Principles of the GRP

Safety and health of the responders always takes precedence over the protection of sensitive environmental resources.

Source control and containment are always a **HIGER** priority over GRP strategy deployments.

The protection strategies in the GRPs have been designed for the use with persistent oils and may not be suitable for other petroleum or hazardous substances.

Environmental conditions (winds, currents, and tides), together with the physical limitations of existing spill response technology, may preclude the effective protection of some areas.

Once a coordinated response has been established during an oil spill incident, booming strategy selection and prioritization are refined and supplemented based on real-time assessments. The UC has the authority to supersede the strategies proposed in the GRPs.

Response personnel may find it necessary to deviate from the exact details provided for deploying a particular strategy. An onsite evaluation of actual conditions is often needed to determine whether a strategy is safe to deploy, whether it will be effective under existing environmental conditions, or effective for the particular type of oil involved. Therefore, field personnel should use their best judgment to modify existing strategies based on real-time conditions and notify command accordingly. Field personnel are also encouraged to notify the command post regarding opportunities for deployment additional strategies that might be used to take advantage of incident-specific conditions.

The GRPs Include the Following Types of Response Strategies:

Collection Booming with On-Water Recovery: Deploying various types of boom to collect oil for mechanical removal using sorbent materials, vacuum trucks, or near shore skimming devices;

Exclusion Booming: Deploying various types of boom to reduce oiling in sensitive areas;

Deflection Booming: Deploying various types of boom to divert oil away from a sensitive area and/or divert oil toward a collection point.

GRPs Do Not Include:

In-Situ Burning: Burning oil on the water; usually requires containment by fire-resistant boom. Chapter 9000, Appendix C for additional policy on in-situ burning use;

Dispersants: Applying chemical agents, usually by aircraft, to aid in breaking up surface slicks and dispersing oil within the water column. See Chapter 9000, Appendix D for policy on dispersant use;

Shoreline Cleanup: Physical removal or chemical treatment of stranded oil. See Chapter 9000, Appendix G for the NOAA Shoreline Countermeasure Manual for Tropical Coastal Environments and Appendix F Oil Spill Best Management Practices for guidance on shoreline cleanup;

Open-Water Mechanical Recovery: Physical removal of oil using boats and/or vessels specifically outfitted with collection and separation equipment.

No Action: Appropriate when weather, sea, or other conditions make deployments unsafe and/or infeasible and when response actions or site access will cause further environmental damage (e.g., wetlands)

Sensitive Resources Addressed by GRPs

The NCP, 40 CFR Part 300.120(3)(i) requires that Area Committees identify and prioritize sensitive areas requiring protection. In the SOUTHEAST LOUISIANA ACP, sensitive areas are broken into three main categories described below.

Environmentally Sensitive Resources

Key natural resource areas are identified using a wide range of data provided by resource trustees, tribes, plan holders, spill response organizations, contingency plan holders, and other interested stakeholders during the process of GRP development and review. The Environmental Sensitivity Index (ESI) maps developed by NOAA are one example of the type of natural resource information available (<http://response.restoration.noaa.gov>). When appropriate, tactical response strategies are designed for implementation during the early hours of an oil spill to reduce impacts to those areas, and trajectory models or other assessment techniques are used to establish initial response priorities.

Historically or Culturally Sensitive Resources

Information on sensitive historic and cultural sites is coordinated through contact with the various tribal governments, State Historic Preservation Office (SHPO), and the United

States Department of the Interior may assist as needed. Due to the sensitive nature of this information, the specifics regarding the location and nature of such sites are not included in the GRP documents. However, in order to ensure that tactical response strategies do not inadvertently harm historical and culturally sensitive sites, historic preservation specialists are consulted to review the GRP documents prior to finalization. The Louisiana SHPO can be contacted at:

Physical Address:
State Historic Preservation Office
Division of Archaeology
Capital Annex Building
1051 North Third Street

Mailing Address:
P.O. Box 44247
Baton Rouge LA, 70804
Phone: (225) 342-8160 (general office)
(225) 219-4598 (Division of Archaeology office)
Fax: (225) 342-4480

Socio-Economically Sensitive Resources

Economically sensitive areas are facilities or locations that rely on a body of water to be economically viable and that could be severely impacted by an oil spill. Economically sensitive areas are broken down into three separate categories: Critical infrastructure, water dependent commercial and recreational areas. Information on economic resources will be gathered for inclusion as an appendix to the GRPs.

Evaluation Criteria for GRPs

Specific strategies for response to spills in the sensitive areas are detailed in the GRPs. Below is a list of some of the biological, cultural, and booming criteria used to determine whether it is appropriate to develop and maintain GRP strategies at specific locations. These criteria are not intended to be exhaustive, or ranked in order of priority, they are meant to help frame the evaluation of GRP strategies.

Key Criteria for Biological Sites, Species, and Habitats of Concern

What is the expected recovery time for habitats of fish and wildlife resources?
What is the residence time of the oil?

Substrate-

- What is the exposure risk?
- What is the likelihood that a habitat or species will be exposed to direct contact with surface oil or to dispersed/dissolved oil in the water column?
- Given the substrate, is clean-up feasible?

Habitat quantity, quality, and pattern-

- Is the impacted habitat considered scarce at local, regional, or statewide scales?
- Is the size of the impacted habitat significant compared to other sites in the region?
- Is the species diversity or endemism high? Is this true year-round or is it seasonal?
- Is abundance of fish and/or wildlife high? Is this true year-round or is it seasonal?
- What life stages of organisms are present?
- Is the habitat important to threatened or endangered species?
- What is the status of the habitat's integrity (i.e., is the area undeveloped or highly altered?)
- Does the habitat have a special designation or status (i.e., Marine Protected Area, biological research area, restoration site, etc.)?
- Are the habitat and/or its associated fish and wildlife resources especially susceptible to injury by oil?

Key Criteria for Archeological and Cultural Sites of Concern

Deployment- Does the act of deploying the GRP strategy threaten the archeological site (anchoring the boom, parking vehicles, etc.)

Purpose- Will implementing the GRP strategy type (collection, diversion, deflection) negatively impact the site?

Review- If either of the above is possible, then a review of the site records is necessary to determine the exact location and sensitivity of the site. If the site records are old or insufficient, then a field visit is necessary.

Significant developments- Are there significant developments that may make any concern about the impacts irrelevant (housing developments etc.)?

Additional criteria for archaeological sites without existing GRP strategies

- Impacts- Does the site extend below the high tide line?
- Vulnerability- Will it be damaged or destroyed if oil were to hit the area (or by the placement of response equipment in the area, e.g., vacuum trucks, etc.)?
- Integrity- Has the site been disturbed yet, or is it still intact?
- Historic Importance- Is the site nominated for, or already on, the National Register of Historic Places or the State equivalent?
- Tribal Importance- Does the site hold special tribal importance?
- Parish Importance- Does the site hold special Parish importance?
- Feasibility- Is booming the site feasible?

Key Criteria for Socio-Economic Sites of Concern

Strictly economic resources are designated as the third priority for dedication of oil spill response resources, following human health and safety and environmental resources. The designation of economic resources is highly dependent upon the priorities of the local government. Each GRP contains detailed information of economic sites in each Parish or Geographical Response Area. This information includes geographic locations of resources, a brief description of the resource at risk, contact names and numbers, and the priority response ranking.

Key Criteria for the Use of Boom

Effectiveness- Is booming the most effective strategy for reducing oil spill impacts? Would other alternatives such as a phone call to an operator, shutting off a water intake, or closing a tidal gate be as effective?

Safety- Determine if safety of human responder will be put at risk for limited likelihood of strategy success.

Strategy- Determine what type of booming strategy would be the most effective at reducing oil impacts to the resource under prevailing conditions (collection, deflection, or exclusion).

Evaluation- Evaluate the site for advantageous characteristics based on:

- Anchoring substrate. Does the substrate allow responders to easily anchor the boom?
- Accessibility. Can the site be easily accessed by vessel or vehicles?
- Time to arrive on scene. How long will it take to get to the site?
- Potential for oiling. Is the site located near shipping activity or fueling operations?
- Beach substrate. Used Environmental Sensitivity Index (ESI) or Shore-Zone classification to determine vulnerability to oiling and likely oil longevity based on the shoreline type.
- Type and quantity of boom. How many sections of boom and what size anchors will be required for deployment? What is the anchoring depth? What type of boom tending will be required? Will this tending be complicated by the amount of time it takes to arrive at the site or the difficulty of access? Is the amount of boom required reasonable (< 1000 ft)?
- Prevailing weather- especially wind and waves. Is a booming strategy realistic for prevailing conditions?
- Tidal influence. At extreme lows will there be nothing but mud flats (very difficult to tend boom when it is stuck in the mud) or at extreme highs will the entire face of a coastal marsh be underwater (thus exposing the entire perimeter to oil)?
- Influence of currents. What velocities can be expected?
- Feasibility. Depends on: Boom size, boom length, the number and size of anchors, the capability of the recruited workboats (to tow boom, set and recover anchors, shelter boat crews, carry boom and associated equipment), the experience of the boat crew, and the effectiveness of the anchoring system (both on shore and in water).

Prioritization

Through the priority evaluation process, an area is broken down by type (human health and safety, environmental, economic and cultural) and sensitivity (high, medium, low). This evaluation process focuses on the sensitivities of areas and not jurisdictional boundaries. Once all areas have been evaluated and broken down, three levels of priority are generally all that is needed for pre-spill planning:

A – Protect First

B – Protect After A Areas

C – Protect After B Areas

The following prioritizations were determined by the Geographic Response Plan subcommittee:

Priority A

- Public drinking water intakes
- Industrial water intakes with public health and safety impacts (e.g. public utility intake, supported by state managed early warning network on MISS RIVER)
- Tidal Inlets – Primary Tidal Inlets that are protectable
- Secondary inlets inside bays that connect to extensive sensitive areas
- Breaches, wash-overs and other low areas where oil can enter sensitive habitats
- Exceptional/Highly sensitive wetlands with high biodiversity site (e.g. NWR, State refuges)
 - Important Bird Areas
 - Bird nesting islands (e.g. Raccoon Island, Queen Bess Island, Brush Island)
 - Other bird nesting concentrations including T&E species
 - Seasonal bird concentration areas onshore (e.g. South Pass)
 - Freshwater Diversion (Manmade and Natural)

Priority B

- Exceptional Oyster beds in the intertidal
- Seagrass Beds in less than 1 meter of water
- High use recreational sites
- Important Industrial Areas (e.g. fishing ports, marinas, industrial corridors)
- Other water intakes not specified in Priority A
- Cultural/Historical sites of concern (e.g. contact SHPO/Tribes)

Priority C

- Small tidal channels and canal openings
- Sheltered tidal flats
- Seagrass beds in greater than 1 meter of water
- Aquaculture sites and oyster lease areas
- Wetland restoration areas
- Other industrial areas
- Areas identified by local authorities not previously noted in Priority A or B

The following areas were not included due to the initial protection difficulty:

- Open gulf beaches
- Exposed wetland shorelines (exposed to waves and currents) (as described in Appendix G)
- Exposed rip-rap

Strategy Selection

Booming strategy recommendations were developed using local knowledge, scientific data, and known operational uses and limitation of common oil spill response equipment. Utilizing publications, such as the Exxon Mobil Oil Spill Response Manual and the National Oceanic Atmospheric Administration's Characteristic Coastal Habitats Choosing Spill Response Alternatives) a quick reference job-aid was developed to assist with the selection of an appropriate site given the noted hydrology and climatic considerations. This process applies a consistent and standard analysis of each site. All water body openings, cuts, and lengths between two points of land greater than one thousand feet (1,000 ft) received a strategy of Deferred Action due to limited resources available during initial response. All sites related to infrastructure or private resources received a strategy of Notification to Site Manager. However, these sites are considered sensitive and should be given due consideration for more defensive response actions by the Incident Command.

GRP Strategy Selection Job-Aid

Water Body Type	Current/Wave Action	Shoreline	Strategy
Lake or Pond		ESI 1-6	Containment booming/collection point
		ESI 7-10	Exclusion booming
Rivers or Large Streams 1.6 feet (0.5) deep	Currents <1 knot	ESI 1-6	Containment booming/collection point
		ESI 7-10	Exclusion booming
	Currents 1-2 knots	ESI 1-6	Diversion booming to collection point
		ESI 7-10	Deflection booming
	Currents >2 knots	ESI 1-6	Multi-layer diversion booming to collection point
		ESI 7-10	Multi-layer deflection booming
Small streams <33 ft wide (10m) and 1.6 ft (0.5 m) deep	Currents <1 knot	ESI 1-6	Containment booming/collection point
		ESI 7-10	Exclusion booming
	Currents 1-2 knots	ESI 1-6	Diversion booming to collection point
		ESI 7-10	Deflection booming
	Currents >2 knots	ESI 1-6	Multi-layer diversion booming to collection point
		ESI 7-10	Multi-layer deflection booming
Shallow Rivers or streams	Currents 0-2 knots	ESI 1-6	Containment booming/collection point
		ESI 7-10	Diversion booming to collection point
Straight Coastline with Sensitive Areas	Breaking waves <1.5 ft (0.5m)	ESI 1-10	Diversion boom up current of sensitive area
	Breaking waves > 1.5 ft		Deferred Action
Entrance to Bays, Harbors, Lagoons, and Estuaries	Breaking waves <1.5 ft (0.5m) and currents < 1 kt (0.5 m/s)	ESI 1-10	Exclusion booming
	Breaking waves <1.5 ft (0.5m) and currents >1 kt (0.5 m/s)	ESI 1-6	Diversion booming to collection point
		ESI 7-10	Deflection booming
	Breaking waves >1.5 ft (0.5m)	ESI 1-10	Deferred Action
Narrow Channel/ Narrow Tidal Channel	Current <1 kt (0.5 m/s)	ESI 1-10	Exclusion Booming
	Current >1 kt (0.5 m/s)	ESI 1-6	Diversion booming with collection point
		ESI 7-10	Deflection booming
Open Water	Breaking Waves < 1.5 ft	N/A	Exclusion Booming
	Breaking waves >1.5 ft		Deferred Action

NOTE: All openings, cuts, and lengths between two points of land greater than one thousand feet (1,000 ft) will receive a strategy of **Deferred Action** due to limited resources for initial response.

All sites related to infrastructure or private resources will receive a strategy of **Notification to Site Manager**.

Southeast Louisiana Area Contingency Plan

Sensitive Site Index

The following compilation of sensitive sites is a result of the hard work of Morgan City Area Stakeholders. The sites contained within this report will play a significant role in the development of the Geographic Response Plans, a geographic based response plan to oil and hazardous material releases.

Any modifications or additions to this set of data is welcomed and encouraged. Please contact the USCG MSU Morgan City Contingency Planning Specialist to make any submissions.



Southeast Louisiana ACP

Terrebonne Parish Index Map



AMELIA QUAD



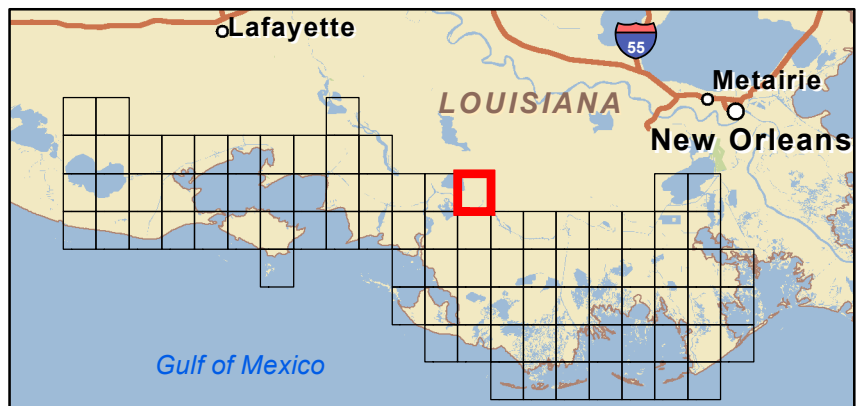
Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles

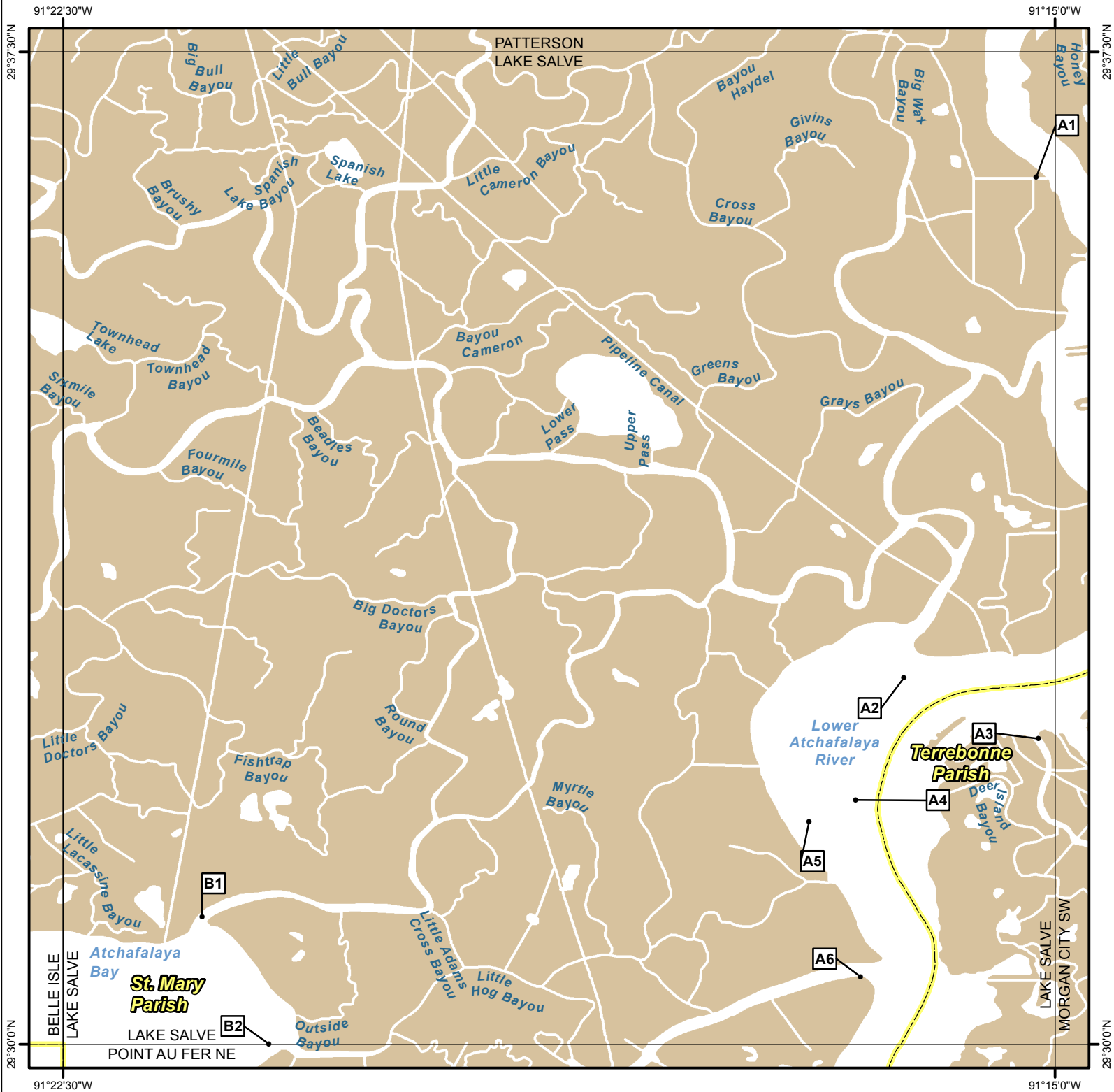


Site Information: A1		Location Information	
Name: Water Intake - Amelia Waterworks Road	Parish: St. Mary	Quad Name: Amelia	
Priority: A	Quad Number: 2909124		
Site Alias: Unnamed Canal at Bateman Lake (Submitted by State)	Mile Marker:		
	Managed (Y/N)?: N		
Site Description: Water Intake	Latitude: 29° 41' 02.239" N		
	Longitude: 91° 05' 59.510" W		
Response Considerations			
Site Strategy: Notification to Site Manager		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

Site Information: A2		Location Information	
Name: Bayou Chene		Parish:	St. Mary
		Quad Name:	Amelia
Priority: A		Quad Number:	2909124
Site Alias: Bayou Boeuf at ICW (Submitted by State)		Mile Marker:	87
		Managed (Y/N)?:	N
Site Description: Booming point		Latitude:	29° 38' 42.255" N
		Longitude:	91° 06' 19.223" W
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	


Site Information: A3		Location Information	
Name: Intersection of Bayou Boeuf and Intracoastal Waterway	Parish:	Terrebonne	
	Quad Name:	Amelia	
Priority: A	Quad Number:	2909124	
Site Alias: N/A	Mile Marker:	85.5	
	Managed (Y/N)?:	N	
Site Description: Sensitive Habitat	Latitude:	29° 37' 39.330" N	
	Longitude:	91° 04' 56.918" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments:	


LAKE SALVE QUAD

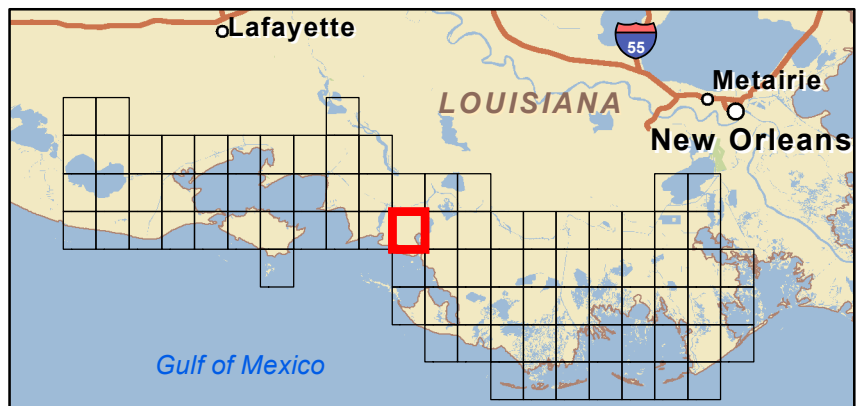


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

 Kilometers

 Miles



Site Information: A1		Location Information	
Name: Canal at Atchafalaya River		Parish:	St. Mary
		Quad Name:	Lake Salve
Priority: A		Quad Number:	2909130
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 36' 33.234" N
		Longitude:	91° 15' 08.426" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Bayou at Atchafalaya River (north)	Parish: St. Mary		
	Quad Name: Lake Salve		
Priority: A	Quad Number: 2909130		
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?: N		
Site Description: Sensitive Habitat	Latitude: 29° 32' 46.077" N		
	Longitude: 91° 16' 08.456" W		
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 1500-2000 ft			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Sword Bayou at Atchafalaya River	Parish:	Terrebonne	
	Quad Name:	Lake Salve	
Priority: A	Quad Number:	2909130	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 32' 18.634" N	
Site Description: Sensitive Habitat	Longitude:	91° 15' 07.494" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments:	

Site Information: A4		Location Information	
Name: Horse Shoe Island	Parish: St. Mary		
	Quad Name: Lake Salve		
Priority: A	Quad Number: 2909130		
Site Alias: None	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 31' 50.695" N		
Site Description: Loafing Bird/Nesting	Longitude: 91° 16' 30.418" W		
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Loafing Bird/Nesting	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

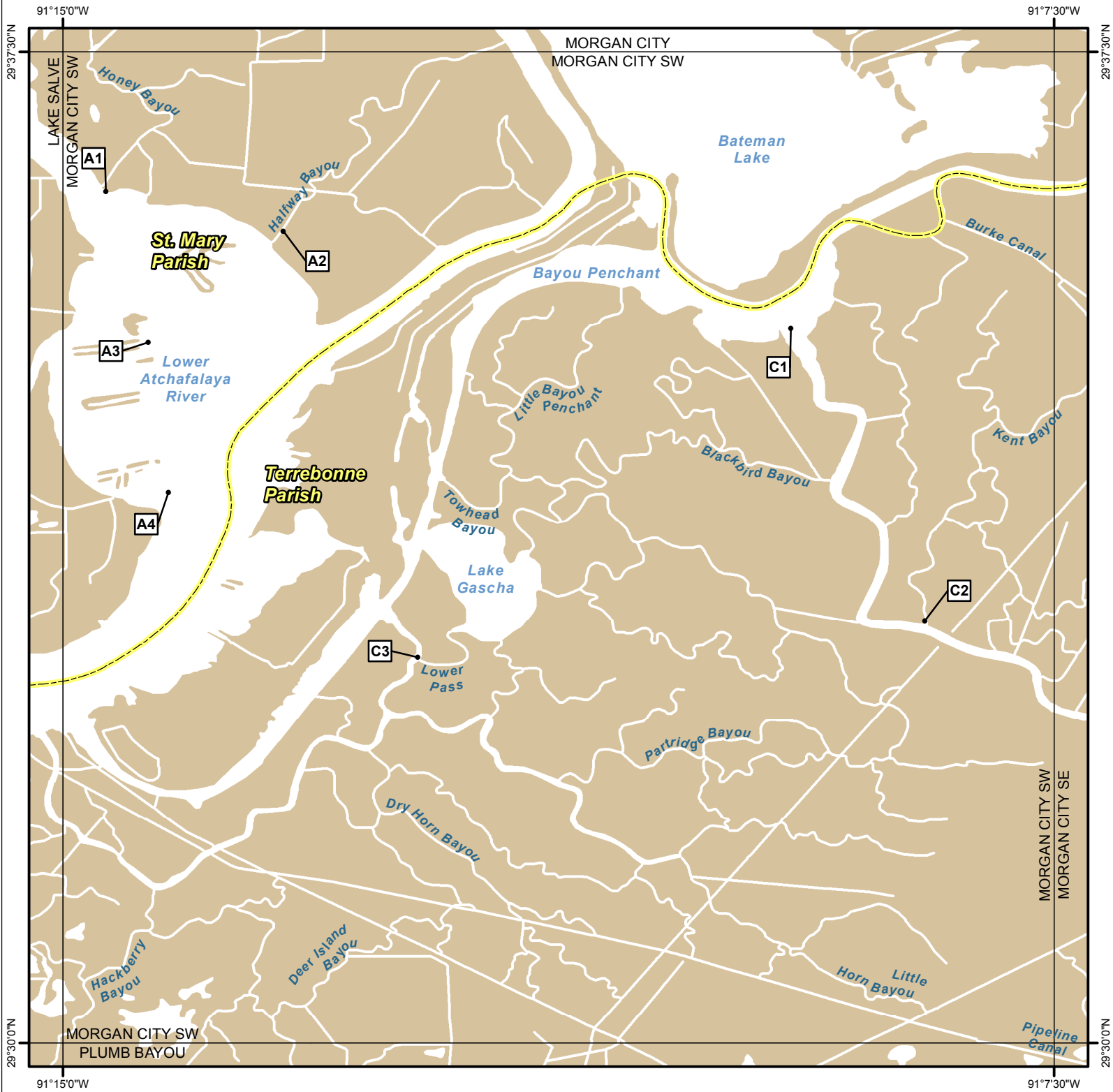
Site Information: A5		Location Information	
Name: Bayou at Atchafalaya River (south)		Parish:	St. Mary
		Quad Name:	Lake Salve
Priority:	A	Quad Number:	2909130
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 31' 40.740" N
		Longitude:	91° 16' 51.545" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A6		Location Information	
Name: Atchafalaya River at Shell Island Pass		Parish:	St. Mary
		Quad Name:	Lake Salve
Priority: A		Quad Number:	2909130
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 30' 30.658" N
		Longitude:	91° 16' 28.260" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: B1		Location Information	
Name: Lake Salve Outlet (north)		Parish:	St. Mary
		Quad Name:	Lake Salve
Priority: B		Quad Number:	2909130
Site Alias: None		Mile Marker:	
Site Description: Lake Salve area		Managed (Y/N)?:	Y - Wildlife Area
		Latitude:	29° 30' 57.789" N
		Longitude:	91° 21' 27.026" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
		Marshland/wildlife management	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Duval Arthur St Mary OEP		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B2		Location Information	
Name: Lake Salve Outlet (south)		Parish:	St. Mary
		Quad Name:	Lake Salve
Priority: B		Quad Number:	2909130
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: Lake Salve area		Latitude:	29° 30' 00.081" N
		Longitude:	91° 20' 56.807" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Ray Clement LA DEQ		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

MORGAN CITY SW QUAD

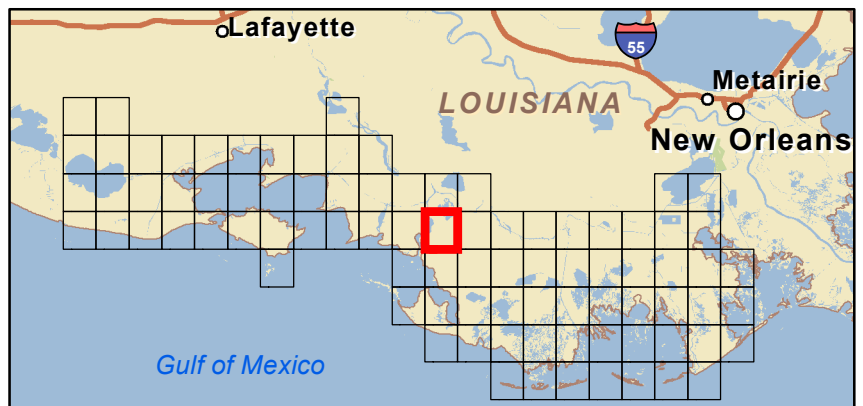


Legend

- GRP Sites
- Quad Boundaries
- ▬ Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Canal at Atchafalaya River (north)	Parish:	St. Mary	
	Quad Name:	Morgan City SW	
Priority: A	Quad Number:	2909131	
Site Alias: N/A	Mile Marker:	123.7	
	Managed (Y/N)?:	N	
Site Description: Sensitive Habitat	Latitude:	29° 36' 26.716" N	
	Longitude:	91° 14' 40.548" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Bayou at Atchafalaya River	Parish: St. Mary	Quad Name: Morgan City SW	
Priority: A	Quad Number: 2909131		
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 36' 08.639" N		
	Longitude: 91° 13' 20.037" W		
Site Description: Sensitive Habitat			
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Canal at Atchafalaya River (central)	Parish: St. Mary		
	Quad Name: Morgan City SW		
Priority: A	Quad Number: 2909131		
Site Alias: N/A	Mile Marker: 125.1		
	Managed (Y/N)?: N		
Site Description: Sensitive Habitat	Latitude: 29° 35' 18.089" N		
	Longitude: 91° 14' 21.233" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A4		Location Information	
Name: Canal at Atchafalaya River (south)	Parish: St. Mary	Quad Name: Morgan City SW	
	Quad Number: 2909131		
Priority: A	Mile Marker: 126.5	Managed (Y/N)?: N	
Site Alias: N/A	Latitude: 29° 34' 09.910" N		
Site Description: Sensitive Habitat	Longitude: 91° 14' 12.252" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: C1		Location Information	
Name: Turtle Bayou at Bayou Chene		Parish:	Terrebonne
		Quad Name:	Morgan City SW
Priority: C		Quad Number:	2909131
Site Alias: None		Mile Marker:	
		Managed (Y/N)?:	N
Site Description: Sensitive Wetlands		Latitude:	29° 35' 24.564" N
		Longitude:	91° 09' 29.422" W
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: LDWF/DEQ/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: Agencies concur with point	

Site Information: C2		Location Information	
Name: Kent Bayou at Turtle Bayou		Parish:	Terrebonne
		Quad Name:	Morgan City SW
Priority: C		Quad Number:	2909131
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 33' 11.788" N
		Longitude:	91° 08' 28.561" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: LDWF/DEQ/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: Agencies concur with point	

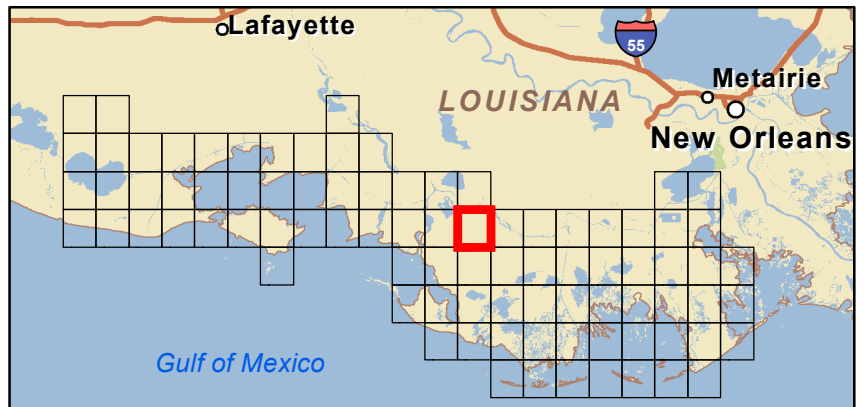
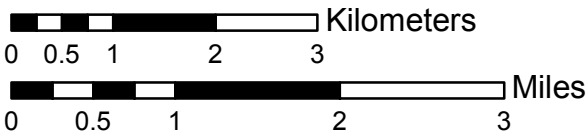
Site Information: C3		Location Information	
Name: Little Horn Bayou at Bayou Chene	Parish:	Terrebonne	
	Quad Name:	Morgan City SW	
Priority: C	Quad Number:	2909131	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 32' 55.104" N	
Site Description: Sensitive Wetlands	Longitude:	91° 12' 18.992" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ		State Submitter: LDWF/DEQ/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: Agencies concur with point	

MORGAN CITY SE QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: A1		Location Information	
Name: Bayou at Bayou Boeuf		Parish:	Terrebonne
		Quad Name:	Morgan City Se
Priority: A		Quad Number:	2909132
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 37' 15.912" N
		Longitude:	91° 05' 21.884" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: C1		Location Information	
Name: Bayou Chene		Parish:	St. Mary
		Quad Name:	Morgan City Se
Priority: C		Quad Number:	2909132
Site Alias: N/A		Mile Marker:	86.2
		Managed (Y/N)?:	N
Site Description: Sensitive Habitat		Latitude:	29° 37' 27.863" N
		Longitude:	91° 05' 34.606" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: C2		Location Information	
Name: Cocodrie Bayou at Intracoastal Waterway	Parish:	Terrebonne	
	Quad Name:	Morgan City SE	
Priority: C	Quad Number:	2909132	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 37' 22.159" N	
Site Description: Sensitive Wetlands	Longitude:	91° 02' 17.599" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: C3		Location Information	
Name: Turtle Bayou at Canal (north)	Parish:	Terrebonne	
	Quad Name:	Morgan City SE	
Priority: C	Quad Number:	2909132	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 32' 34.292" N	
Site Description: Sensitive Wetlands	Longitude:	91° 06' 43.547" W	
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C	Resources At Risk Comments: Sensitive Wetlands		
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By EOC	State Submitter: DEQ/Terrebonne Parish/DNR/CPRA		
Submit Date: 2012.10.01	State Comments: State concurs with Parish		

Site Information: C4		Location Information	
Name: Turtle Bayou at 70 Mile Canal		Parish:	Terrebonne
		Quad Name:	Morgan City SE
Priority:	C	Quad Number:	2909132
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 32' 08.878" N
		Longitude:	91° 05' 01.244" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

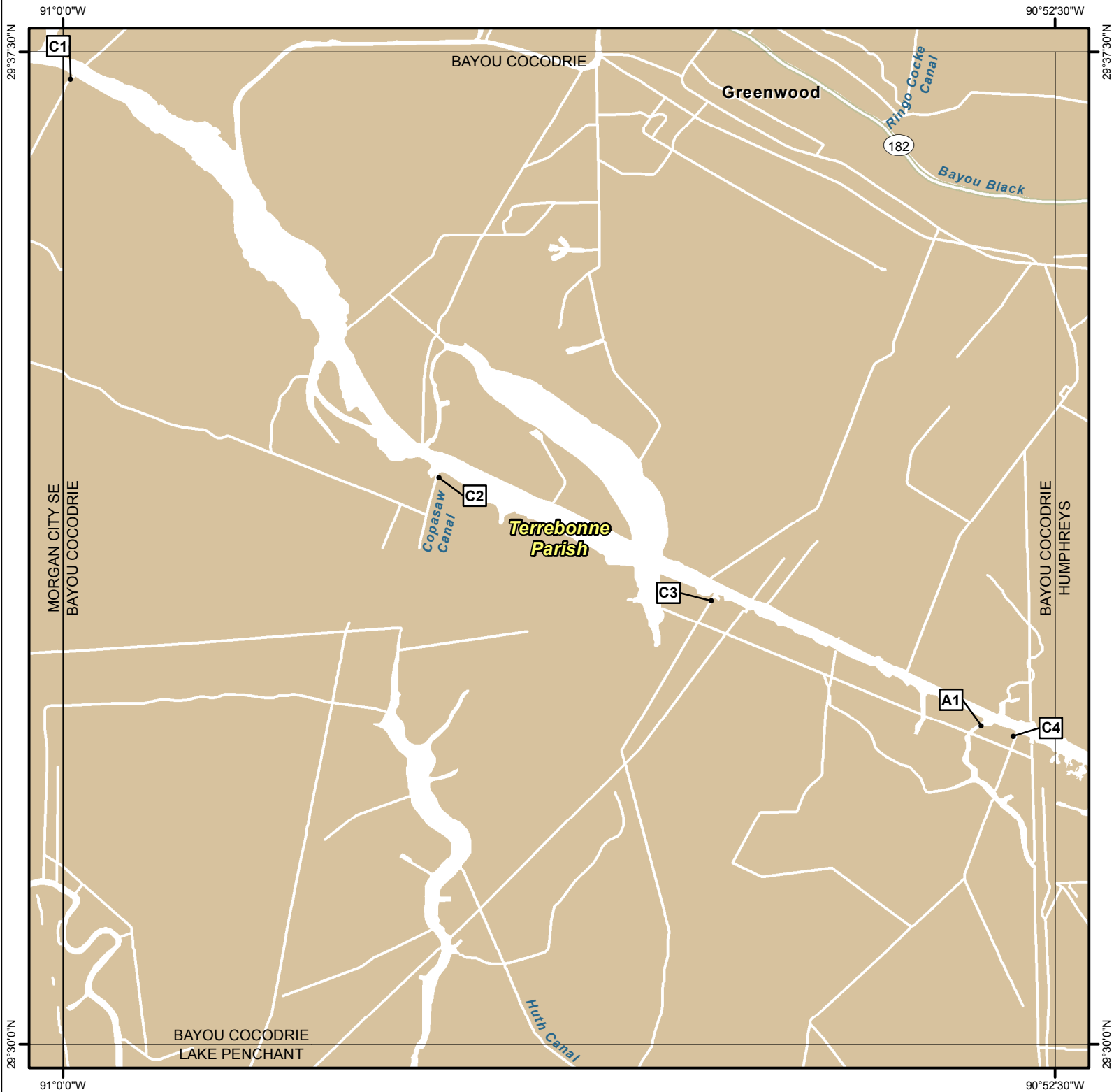
Site Information: C5		Location Information	
Name: Bayou Penchant at Canal (north)		Parish:	Terrebonne
		Quad Name:	Morgan City SE
Priority:	C	Quad Number:	2909132
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 31' 13.308" N
		Longitude:	91° 00' 02.769" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: C6		Location Information	
Name: Turtle Bayou at Canal (south)	Parish:	Terrebonne	
	Quad Name:	Morgan City SE	
Priority: C	Quad Number:	2909132	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 31' 07.078" N	
Site Description: Sensitive Wetlands	Longitude:	91° 04' 15.889" W	
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B	Resources At Risk Comments: Sensitive Wetlands		
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By EOC	State Submitter: DEQ/Terrebonne Parish/DNR/CPRA		
Submit Date: 2012.10.01	State Comments: State concurs with Parish		

Site Information: C7		Location Information	
Name: Bayou Penchant at Piquant Bayou		Parish:	Terrebonne
		Quad Name:	Morgan City SE
Priority:	C	Quad Number:	2909132
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 30' 53.725" N
		Longitude:	91° 00' 33.060" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: C8		Location Information	
Name: Bayou Penchant at Canal (south)	Parish:	Terrebonne	
	Quad Name:	Morgan City SE	
Priority: C	Quad Number:	2909132	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 30' 11.956" N	
Site Description: Sensitive Wetlands	Longitude:	91° 02' 55.177" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

BAYOU COCODRIE QUAD

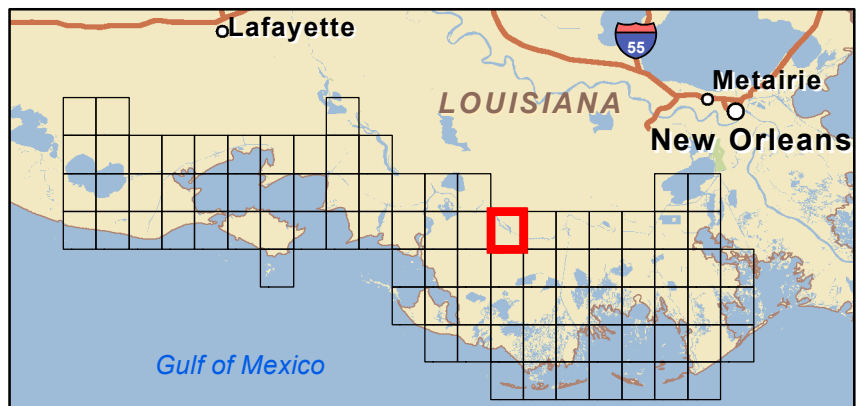


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: St. Paul Bayou (west)	Parish:	Terrebonne	
	Quad Name:	Bayou Cocodrie	
Priority: A	Quad Number:	2909025	
Site Alias: N/A	Mile Marker:	71.3	
	Managed (Y/N)?:	N	
Site Description: Sensitive Habitat	Latitude:	29° 32' 24.442" N	
	Longitude:	90° 53' 03.450" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: C1		Location Information	
Name: 70 Mile Canal at Intracoastal Waterway	Parish:	Terrebonne	
	Quad Name:	Bayou Cocodrie	
Priority: C	Quad Number:	2909025	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 37' 17.612" N	
Site Description: Sensitive Wetlands	Longitude:	90° 59' 56.582" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Negligable			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: C2		Location Information	
Name: Copasaw Canal at Intracoastal Waterway	Parish:	Terrebonne	
	Quad Name:	Bayou Cocodrie	
Priority: C	Quad Number:	2909025	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 34' 16.947" N	
Site Description: Sensitive Wetlands	Longitude:	90° 57' 09.473" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ		State Submitter: DEQ/ Terrebonne Parish	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: C3		Location Information	
Name: Canal at Intracoastal Waterway	Parish:	Terrebonne	
	Quad Name:	Bayou Cocodrie	
Priority: C	Quad Number:	2909025	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 33' 21.014" N	
Site Description: Sensitive Wetlands	Longitude:	90° 55' 05.832" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: C4		Location Information	
Name: St. Paul Bayou		Parish:	Terrebonne
		Quad Name:	Bayou Cocodrie
Priority: C		Quad Number:	2909025
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 32' 19.721" N
		Longitude:	90° 52' 48.869" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

HUMPHREYS QUAD



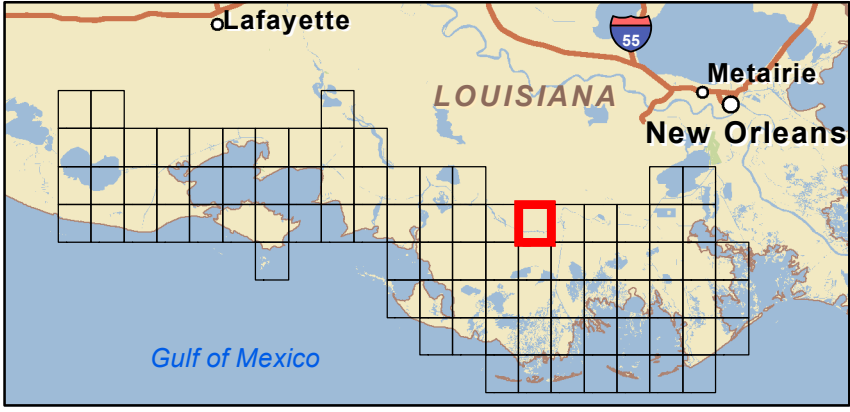
Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

Kilometers
0 0.5 1 2 3

Miles
0 0.5 1 2 3

N



Site Information: A1		Location Information	
Name: Minors Canal	Parish:	Terrebonne	
	Quad Name:	Humphreys	
Priority: A	Quad Number:	2909026	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 33' 05.622" N	
Site Description: Drinking Water Control Structure	Longitude:	90° 47' 51.431" W	
Response Considerations			
Site Strategy: Notification to Site Manager		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments:	
ESI Description 10D: Scrub-shrub wetlands			
		Drinking Water Control Structure	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: A2		Location Information	
Name: Bayou at Intracoastal Waterway	Parish:	Terrebonne	
	Quad Name:	Humphreys	
Priority: A	Quad Number:	2909026	
Site Alias: N/A	Mile Marker:	66.3	
	Managed (Y/N)?:	N	
	Latitude:	29° 32' 04.488" N	
Site Description: Sensitive Habitat	Longitude:	90° 48' 49.834" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Minors Canal at Intracoastal Waterway	Parish:	Terrebonne	
	Quad Name:	Humphreys	
Priority: A	Quad Number:	2909026	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 32' 02.786" N	
Site Description: Mandalay National Wildlife Refuge (NWR)	Longitude:	90° 47' 45.418" W	
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D	Resources At Risk Comments: Mandalay National Wildlife Refuge (NWR)		
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: USFWS	Special Contact:		
Site Statistics			
Submitted By EOC	State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA		
Submit Date: 2012.10.01	State Comments: State concurs with Parish		

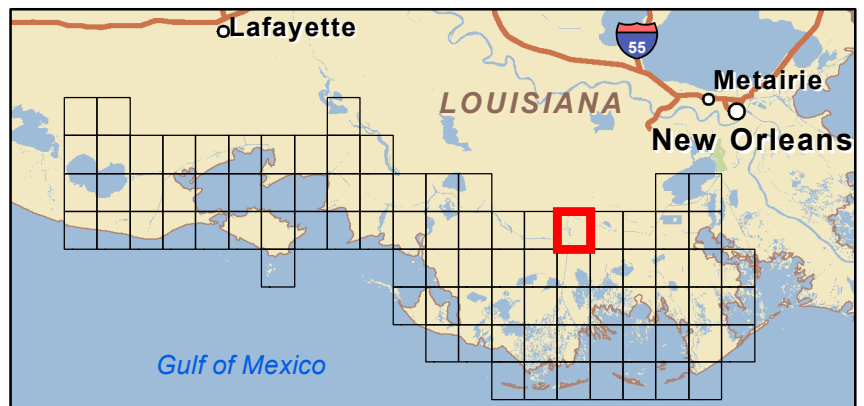
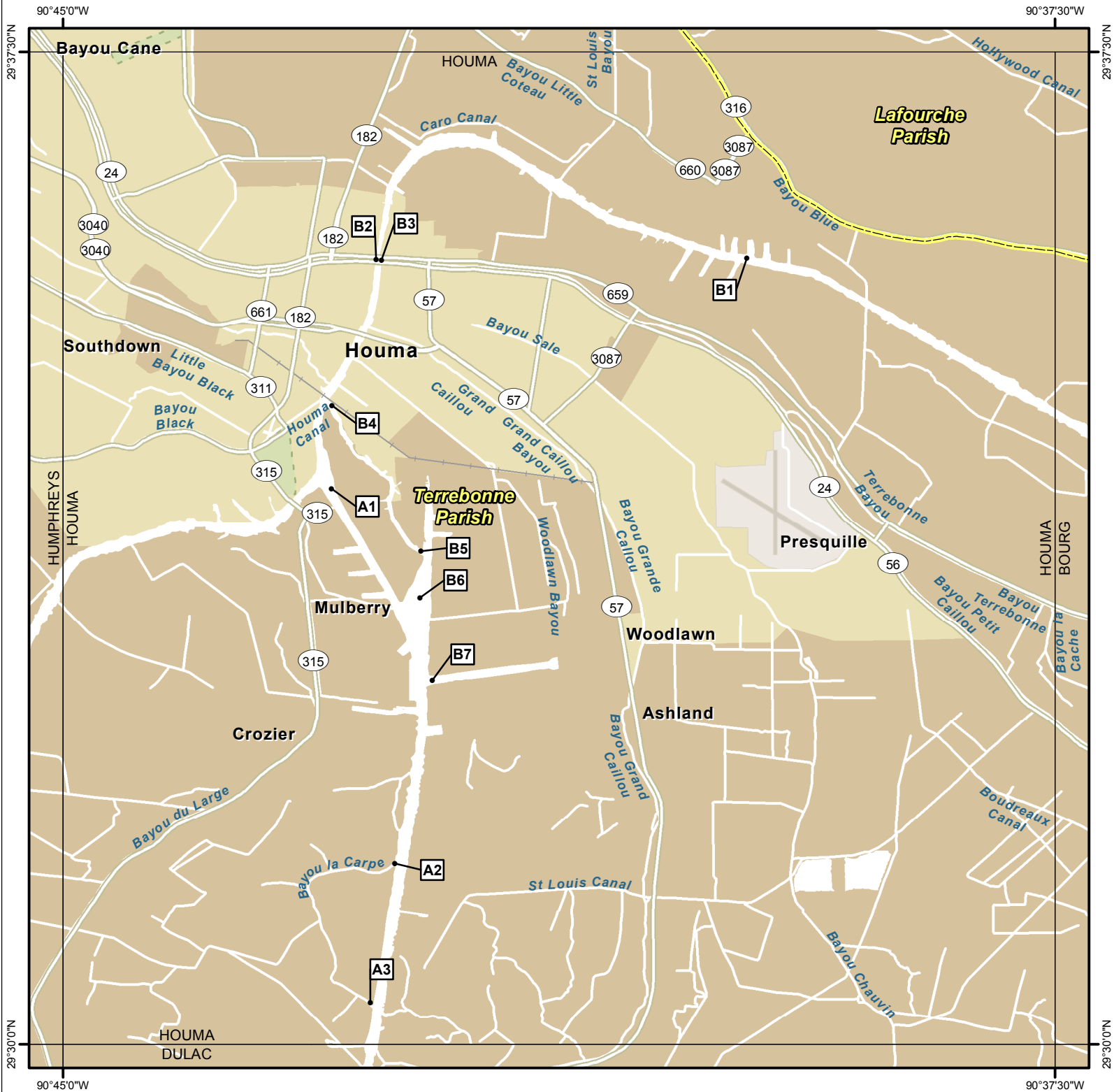
Site Information: A4		Location Information	
Name: Canal at Intracoastal Waterway (central east)	Parish:	Terrebonne	
	Quad Name:	Humphreys	
Priority: A	Quad Number:	2909026	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 32' 01.379" N	
Site Description: Mandalay National Wildlife Refuge (NWR)	Longitude:	90° 47' 06.702" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Mandalay National Wildlife Refuge (NWR)	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: USFWS		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: C1		Location Information	
Name: Canal at Intracoastal Waterway (east)	Parish:	Terrebonne	
	Quad Name:	Humphreys	
Priority: C	Quad Number:	2909026	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 33' 20.908" N	
Site Description: Sensitive Wetlands	Longitude:	90° 45' 02.404" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: C2		Location Information	
Name: Canal at Intracoastal Waterway (central west)	Parish:	Terrebonne	
	Quad Name:	Humphreys	
Priority: C	Quad Number:	2909026	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Area	
	Latitude:	29° 32' 00.230" N	
Site Description: Mandalay Bay Wildlife	Longitude:	90° 49' 46.803" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments: Mandalay Bay Wildlife	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: C3		Location Information	
Name: Canal at Intracoastal Waterway (west)	Parish:	Terrebonne	
	Quad Name:	Humphreys	
Priority: C	Quad Number:	2909026	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 31' 59.766" N	
Site Description: Sensitive Wetlands	Longitude:	90° 51' 34.808" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

HOUMA QUAD



Site Information: A1		Location Information	
Name: Houma Navigation Canal at Intracoastal Waterway		Parish:	Terrebonne
		Quad Name:	Houma
Priority: A		Quad Number:	2909027
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Drinking Water Control Structure		Latitude:	29° 34' 12.065" N
		Longitude:	90° 42' 58.222" W
Response Considerations			
Site Strategy: Multi-Layer Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Rivers or Large Streams			
Current Wave Action: Currents >2 kts			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments:	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: A2		Location Information	
Name: Bayou Lacarpe North at Houma Navigational Canal	Parish:	Terrebonne	
	Quad Name:	Houma	
Priority: A	Quad Number:	2909027	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 31' 21.943" N	
Site Description: Sensitive Habitat	Longitude:	90° 42' 29.532" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Bayou Lacarpe South at Houma Navigational Canal	Parish:	Terrebonne	
	Quad Name:	Houma	
Priority: A	Quad Number:	2909027	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 30' 18.890" N	
Site Description: Sensitive Habitat	Longitude:	90° 42' 40.708" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: B1		Location Information	
Name: Intracoastal Waterway at Multiple Industrial Slips		Parish:	Terrebonne
		Quad Name:	Houma
Priority: B		Quad Number:	2909027
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Industrial Area		Latitude:	29° 35' 56.443" N
		Longitude:	90° 39' 49.733" W
Response Considerations			
Site Strategy: Notification to Site Manager		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B2		Location Information	
Name: Bayou Terrebonne at Intracoastal Waterway (north)		Parish:	Terrebonne
		Quad Name:	Houma
Priority: B		Quad Number:	2909027
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Marina/Hospital		Latitude:	29° 35' 55.860" N
		Longitude:	90° 42' 38.099" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Marina/Hospital	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B3		Location Information	
Name: Bayou Terrebonne at Intracoastal Waterway (south)		Parish:	Terrebonne
		Quad Name:	Houma
Priority: B		Quad Number:	2909027
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
		Latitude:	29° 35' 55.705" N
Site Description: Marina/Hospital		Longitude:	90° 42' 35.505" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Marina/Hospital	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

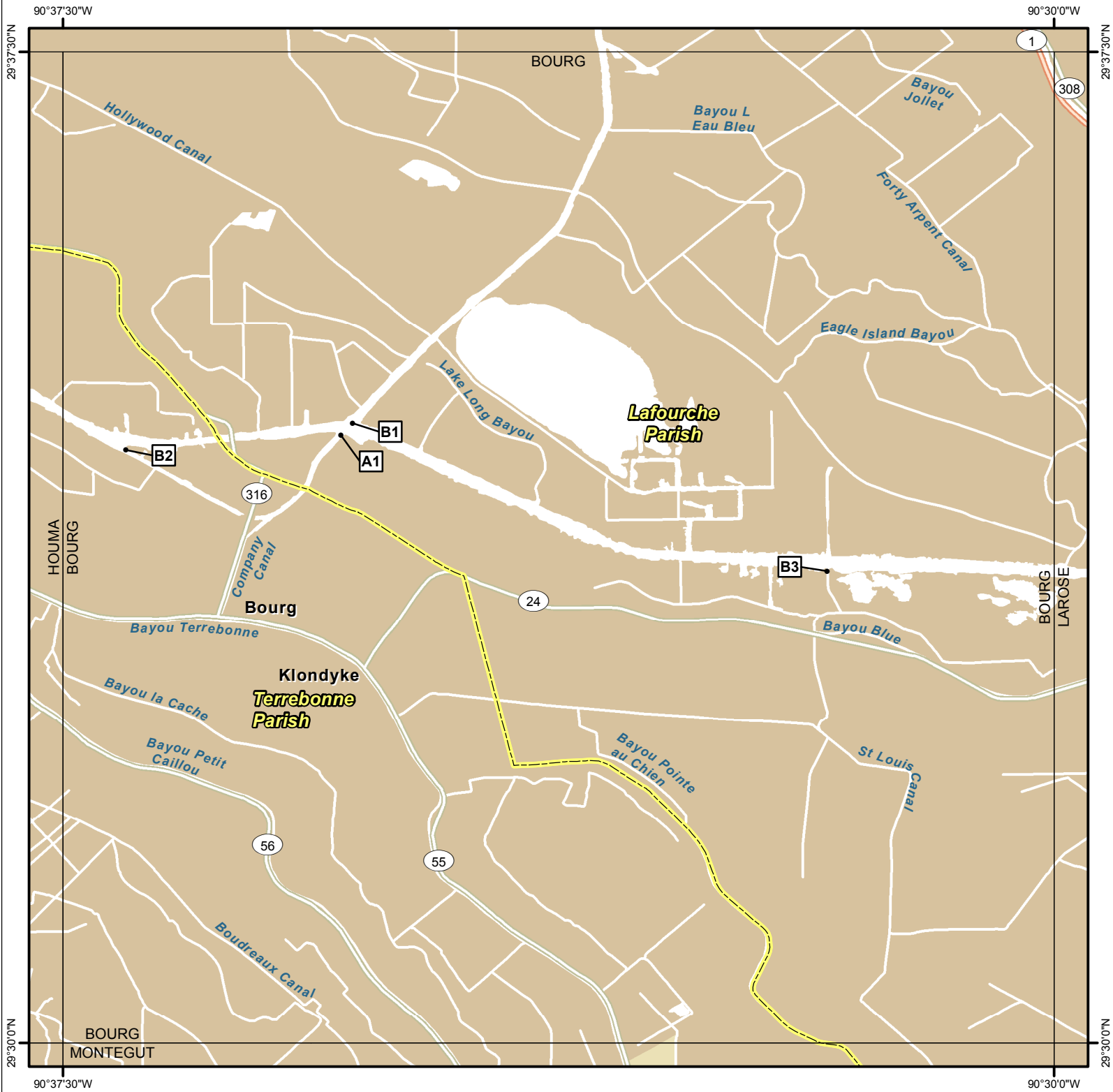
Site Information: B4		Location Information	
Name: Bayou LaCarpe at Intracoastal Waterway	Parish:	Terrebonne	
	Quad Name:	Houma	
Priority: B	Quad Number:	2909027	
Site Alias: None	Mile Marker:		
Site Description: Industrial Area	Managed (Y/N)?:	N	
	Latitude:	29° 34' 49.802" N	
	Longitude:	90° 42' 58.152" W	
Response Considerations			
Site Strategy: Exclusion Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C	Resources At Risk Comments: Industrial Area		
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By EOC	State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA		
Submit Date: 2012.10.01	State Comments: State concurs with Parish		

Site Information: B5		Location Information	
Name: Bayou LaCarpe at Houma Navigation Canal	Parish:	Terrebonne	
	Quad Name:	Houma	
Priority: B	Quad Number:	2909027	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 33' 43.614" N	
Site Description: Industrial Area	Longitude:	90° 42' 17.730" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
		Industrial Area	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B6		Location Information	
Name: Houma Navigation Canal at Port of Terrebonne		Parish:	Terrebonne
		Quad Name:	Houma
Priority: B		Quad Number:	2909027
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Industrial Area		Latitude:	29° 33' 22.373" N
		Longitude:	90° 42' 18.175" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments:	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B7		Location Information	
Name: Houma Navigation Canal at Munson Slip	Parish:	Terrebonne	
	Quad Name:	Houma	
Priority: B	Quad Number:	2909027	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 32' 45.032" N	
Site Description: Industrial Area	Longitude:	90° 42' 12.511" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Industrial Area	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

BOURG QUAD

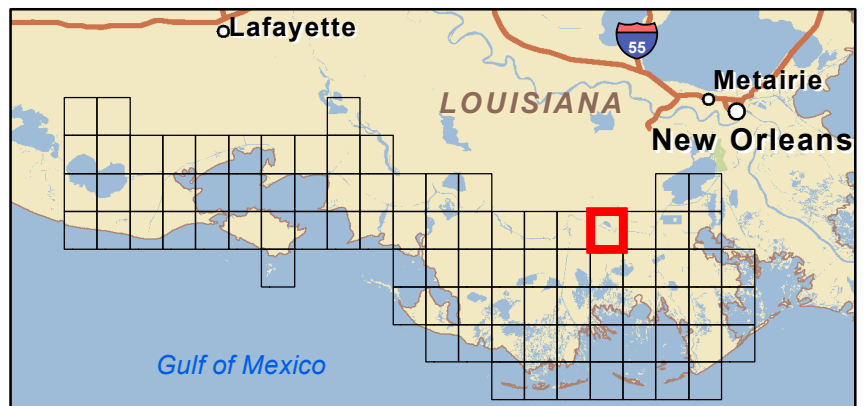


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



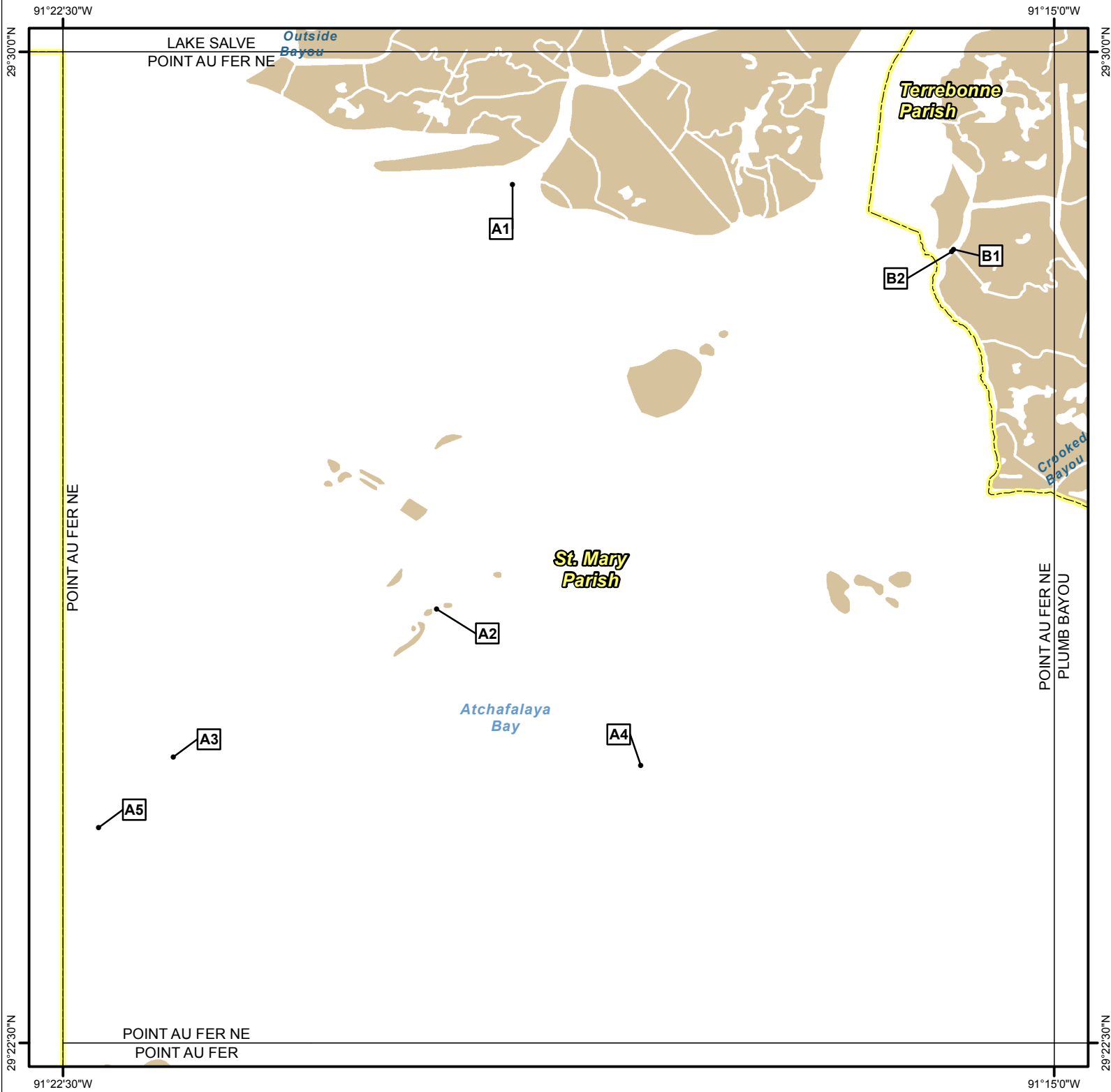
Site Information: A1		Location Information	
Name: Company Canal	Parish:	Lafourche	
	Quad Name:	Bourg	
Priority: A	Quad Number:	2909028	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
Site Description: Sensitive Habitat	Latitude:	29° 34' 35.981" N	
	Longitude:	90° 35' 23.911" W	
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: B1		Location Information	
Name: Entrance to Lake Long from Intracoastal Waterway		Parish:	Lafourche
		Quad Name:	Bourg
Priority: B		Quad Number:	2909028
Site Alias: None		Mile Marker:	48.7
		Managed (Y/N)?:	N
Site Description: Inlet		Latitude:	29° 34' 41.381" N
		Longitude:	90° 35' 18.542" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
		Marsh	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Eric Benoit		State Submitter: DEQ/Lafourche Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B2		Location Information	
Name: Intracoastal Waterway at Industrial Slip		Parish:	Terrebonne
		Quad Name:	Bourg
Priority:	B	Quad Number:	2909028
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Industrial Area		Latitude:	29° 34' 29.234" N
		Longitude:	90° 37' 01.368" W
Response Considerations			
Site Strategy: Notification to Site Manager		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
		Industrial Area	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

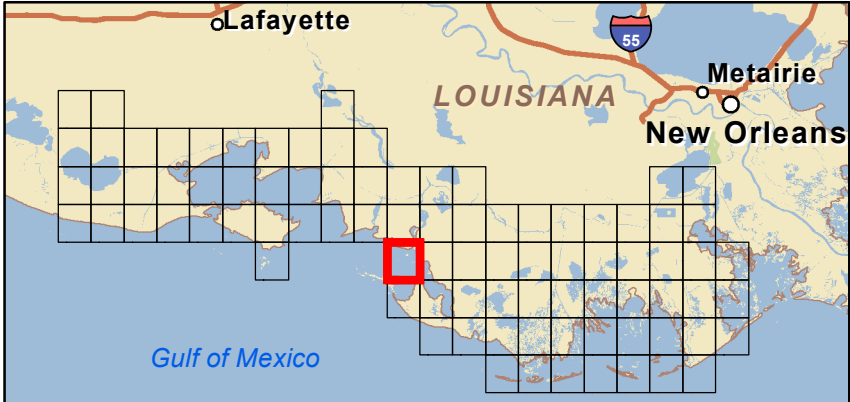
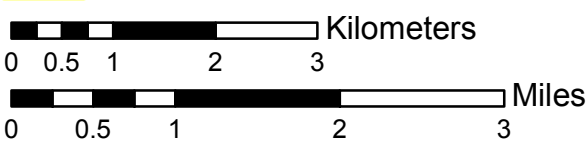
Site Information: B3		Location Information	
Name: Access Canal at Intracoastal Waterway		Parish:	Lafourche
		Quad Name:	Bourg
Priority: B		Quad Number:	2909028
Site Alias: N/A		Mile Marker:	44.8
		Managed (Y/N)?: N	
Site Description: Industrial Facility		Latitude:	29° 33' 34.321" N
		Longitude:	90° 31' 42.943" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Industrial Facility	

POINT AU FER NE QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: A1		Location Information	
Name: Shell Island Pass		Parish:	St. Mary
		Quad Name:	Point Au Fer Ne
Priority: A		Quad Number:	2909138
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive habitat		Latitude:	29° 29' 00.000" N
		Longitude:	91° 19' 05.882" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A2		Location Information	
Name: God Island		Parish:	St. Mary
		Quad Name:	Point Au Fer Ne
Priority: A		Quad Number:	2909138
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: Wading Birds		Latitude:	29° 25' 47.055" N
		Longitude:	91° 19' 40.494" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10B/9A		Resources At Risk Comments: Wading Birds	
ESI Description 10B: Freshwater marshes / 9A: Sheltered tidal flats			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A3		Location Information	
Name: Avocet Island		Parish:	St. Mary
		Quad Name:	Point Au Fer Ne
Priority: A		Quad Number:	2909138
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: Bird Nesting		Latitude:	29° 24' 39.806" N
		Longitude:	91° 21' 39.904" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Bird Nesting	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

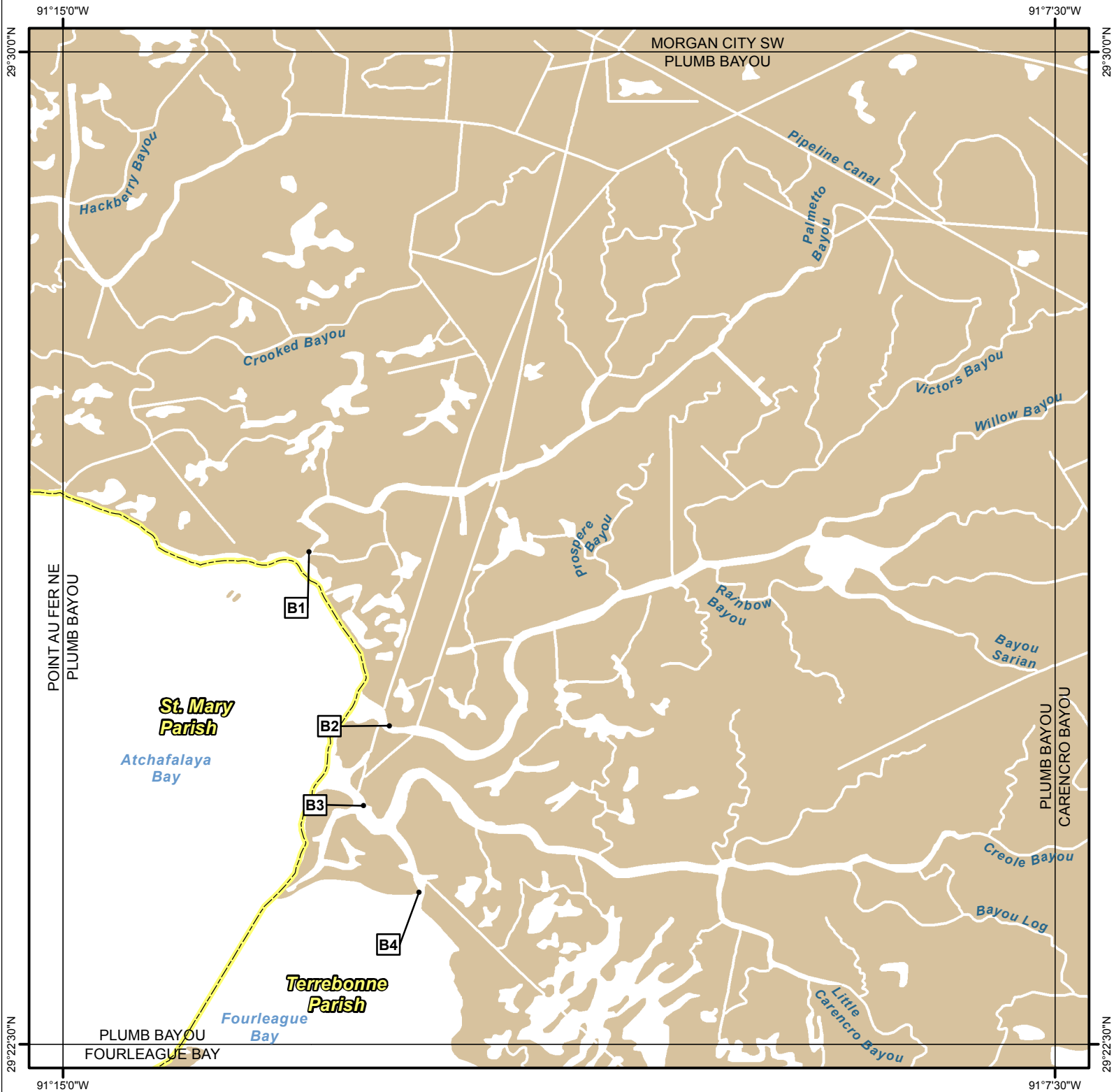
Site Information: A4		Location Information	
Name: Bennett Island		Parish:	St. Mary
		Quad Name:	Point Au Fer Ne
Priority: A		Quad Number:	2909138
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: Sea Birds		Latitude:	29° 24' 35.881" N
		Longitude:	91° 18' 07.585" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sea Birds	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A5		Location Information	
Name: Donna island		Parish:	St. Mary
		Quad Name:	Point Au Fer Ne
Priority: A		Quad Number:	2909138
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: Rookeries		Latitude:	29° 24' 07.771" N
		Longitude:	91° 22' 13.901" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Wildlife Mgmt. / Includes All 5 Bird Islands	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Ray Clement LA DEQ		State Submitter: DEQ/St. Mary Parish	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B1		Location Information	
Name: Deer Island Bayou at Atchafalaya River		Parish:	Terrebonne
		Quad Name:	Point Au Fer Ne
Priority: B		Quad Number:	2909138
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands/Fishing		Latitude:	29° 28' 30.385" N
		Longitude:	91° 15' 45.653" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Wetlands/Fishing	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	


Site Information: B2		Location Information	
Name: Deer Island Bayou		Parish:	Terrebonne
		Quad Name:	Point Au Fer Ne
Priority: B		Quad Number:	2909138
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Inlet		Latitude:	29° 28' 29.264" N
		Longitude:	91° 15' 46.378" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DNR/CPRA		State Submitter: DNR/CPRA	
Submit Date: 2013.04.16		State Comments:	


PLUMB BAYOU QUAD

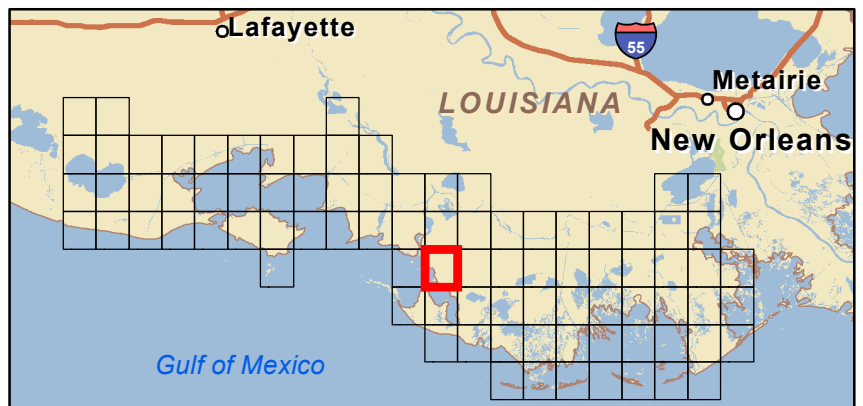


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

 Kilometers

 Miles



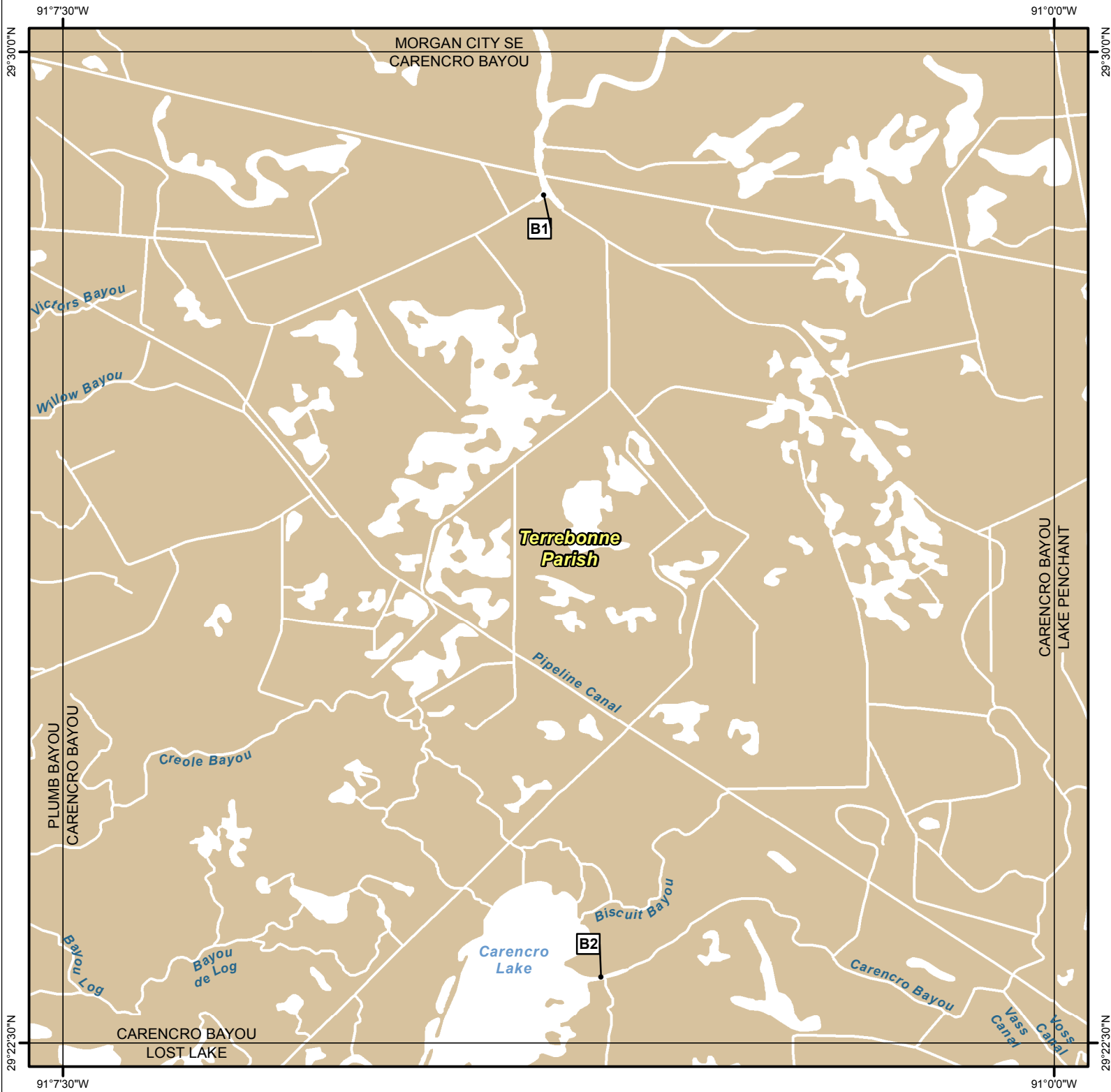
Site Information: B1		Location Information	
Name: Palmetto Bayou at Sweet Bay Lake		Parish:	Terrebonne
		Quad Name:	Plumb Bayou
Priority: B		Quad Number:	2909139
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands/Fishing		Latitude:	29° 26' 13.298" N
		Longitude:	91° 13' 08.466" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands/Fishing	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B2		Location Information	
Name: Plumb Bayou at Sweet Bay Lake		Parish:	Terrebonne
		Quad Name:	Plumb Bayou
Priority: B		Quad Number:	2909139
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands/Fishing		Latitude:	29° 24' 54.358" N
		Longitude:	91° 12' 31.956" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10B/10C		Resources At Risk Comments: Sensitive Wetlands/Fishing	
ESI Description 10B: Freshwater marshes / 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B3		Location Information	
Name: Creole Bayou at Sweet Bay Lake		Parish:	Terrebonne
		Quad Name:	Plumb Bayou
Priority:	B	Quad Number:	2909139
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands/Fishing		Latitude:	29° 24' 18.017" N
		Longitude:	91° 12' 43.606" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands/Fishing	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

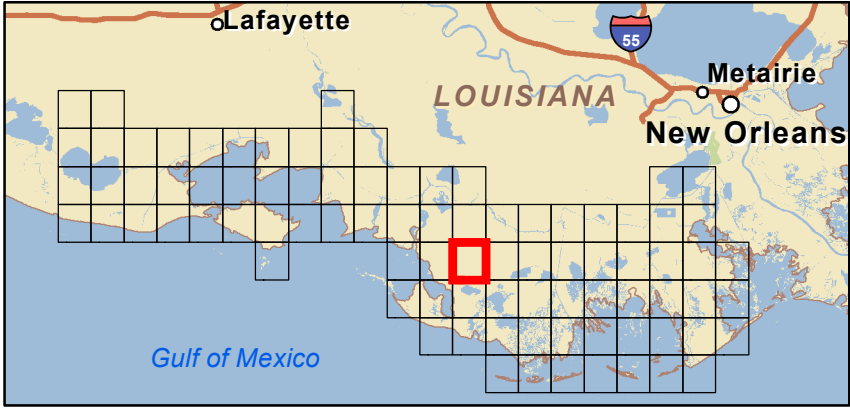
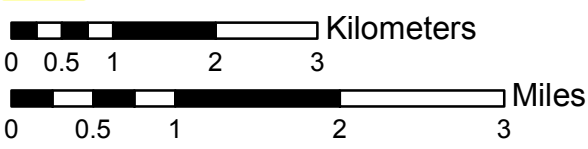
Site Information: B4		Location Information	
Name: Oyster Bayou at Sweet Bay Lake		Parish:	Terrebonne
		Quad Name:	Plumb Bayou
Priority:	B	Quad Number:	2909139
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands/Fishing		Latitude:	29° 23' 38.929" N
		Longitude:	91° 12' 18.575" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B/6A		Resources At Risk Comments: Sensitive Wetlands/Fishing	
ESI Description 10B: Freshwater marshes / 6A: Gravel beaches			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

CARENCRO BAYOU QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: B1		Location Information	
Name: Bayou Penchant at Turtle Bayou		Parish:	Terrebonne
		Quad Name:	Carencro Bayou
Priority: B		Quad Number:	2909140
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands/Fishing		Latitude:	29° 28' 55.052" N
		Longitude:	91° 03' 51.725" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands/Fishing	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B2		Location Information	
Name: Carencro Bayou at Carencro Lake		Parish:	Terrebonne
		Quad Name:	Carencro Bayou
Priority: B		Quad Number:	2909140
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands/Fishing		Latitude:	29° 22' 59.814" N
		Longitude:	91° 03' 25.805" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands/Fishing	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

LAKE PENCHANT QUAD

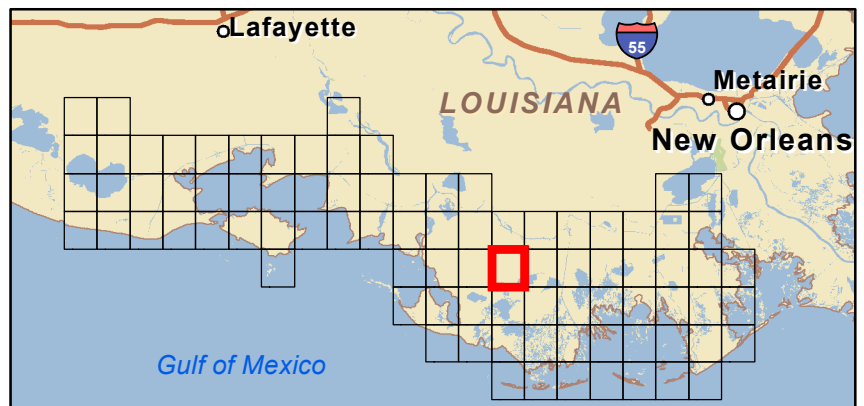


Legend

- GRP Sites
- ▭ Quad Boundaries
- ▭ Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Bayou Penchant		Parish:	Terrebonne
		Quad Name:	Lake Penchant
Priority: A		Quad Number:	2909033
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Mouth of Bayou Penchant		Latitude:	29° 28' 57.811" N
		Longitude:	90° 58' 09.639" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Mouth of Bayou Penchant	

Site Information: B1		Location Information	
Name: Liners Canal at Lake Decade		Parish:	Terrebonne
		Quad Name:	Lake Penchant
Priority:	B	Quad Number:	2909033
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 24' 10.810" N
		Longitude:	90° 53' 17.325" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B2		Location Information	
Name: Grady Canal at Bayou Penchant		Parish: Terrebonne	
		Quad Name: Lake Penchant	
Priority: B		Quad Number: 2909033	
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude: 29° 23' 17.257" N	
		Longitude: 90° 58' 39.737" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

LAKE THERIOT QUAD



Legend

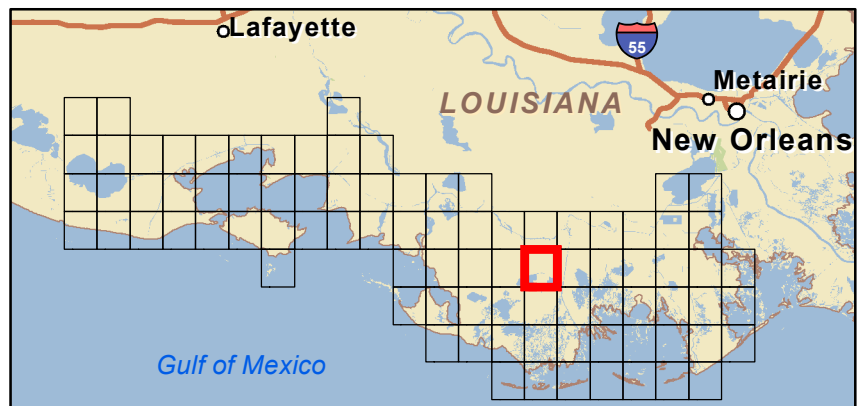
- GRP Sites
- Quad Boundaries
- Parish Boundaries

Kilometers

0 0.5 1 2 3

Miles

0 0.5 1 2 3

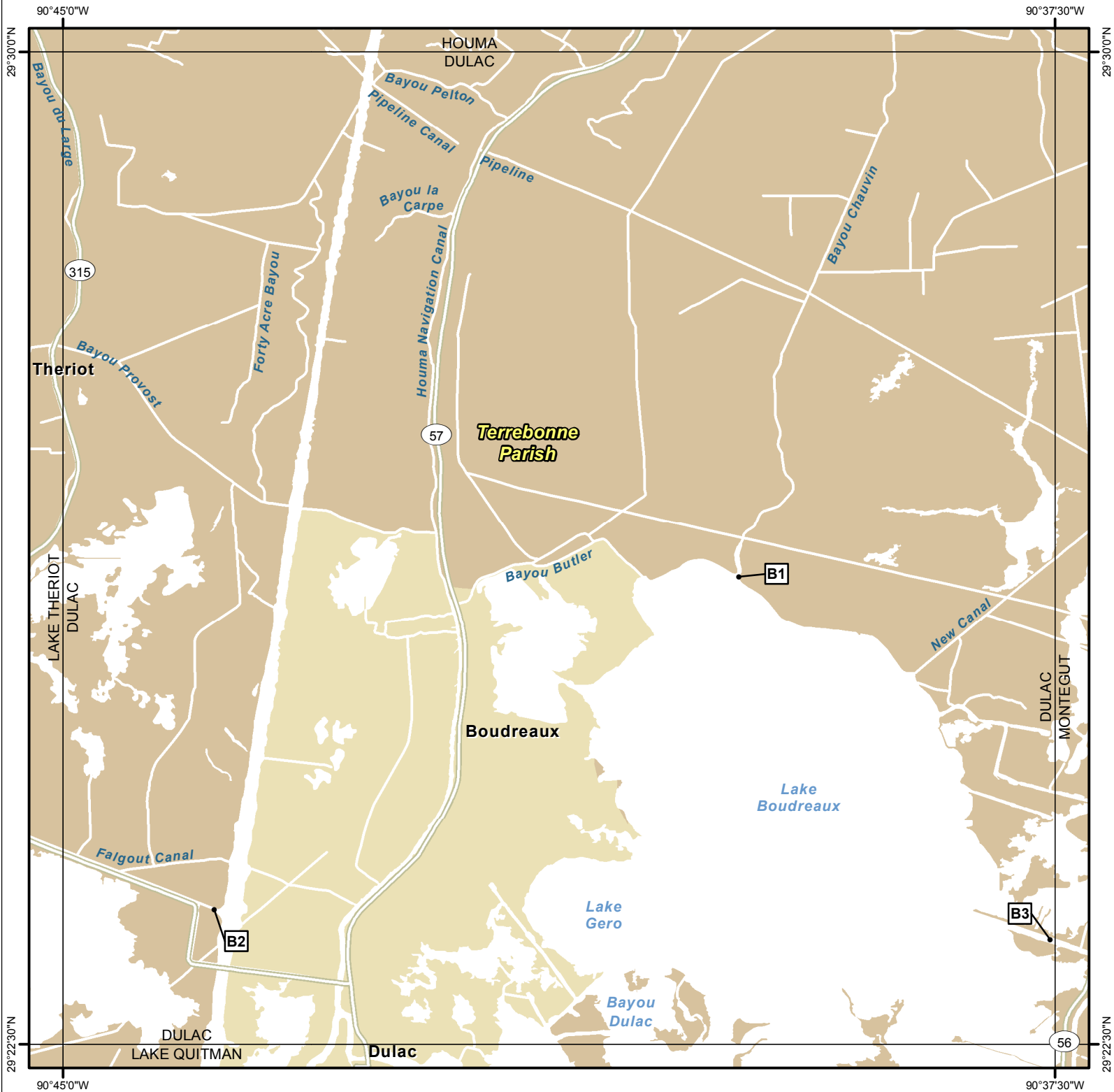


Site Information: B1		Location Information	
Name: Minors Canal at Lake Decade		Parish:	Terrebonne
		Quad Name:	Lake Theriot
Priority: B		Quad Number:	2909034
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 25' 02.545" N
		Longitude:	90° 50' 21.781" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B2		Location Information	
Name: Falgout Canal at lake Decade	Parish: Terrebonne		
	Quad Name: Lake Theriot		
Priority: B	Quad Number: 2909034		
Site Alias: None	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 24' 59.892" N		
Site Description: Sensitive Wetlands	Longitude: 90° 49' 48.473" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B3		Location Information	
Name: Falgout Canal at Bayou Dularge		Parish: Terrebonne	
		Quad Name: Lake Theriot	
Priority: B		Quad Number: 2909034	
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Marine with Fuel Storage		Latitude: 29° 24' 45.471" N	
		Longitude: 90° 47' 01.068" W	
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marina with Fuel Storage	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Marine with Fuel Storage	

DULAC QUAD

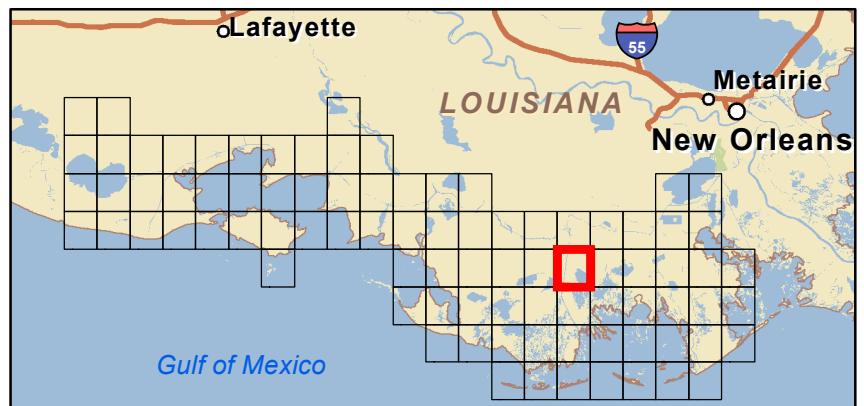


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles

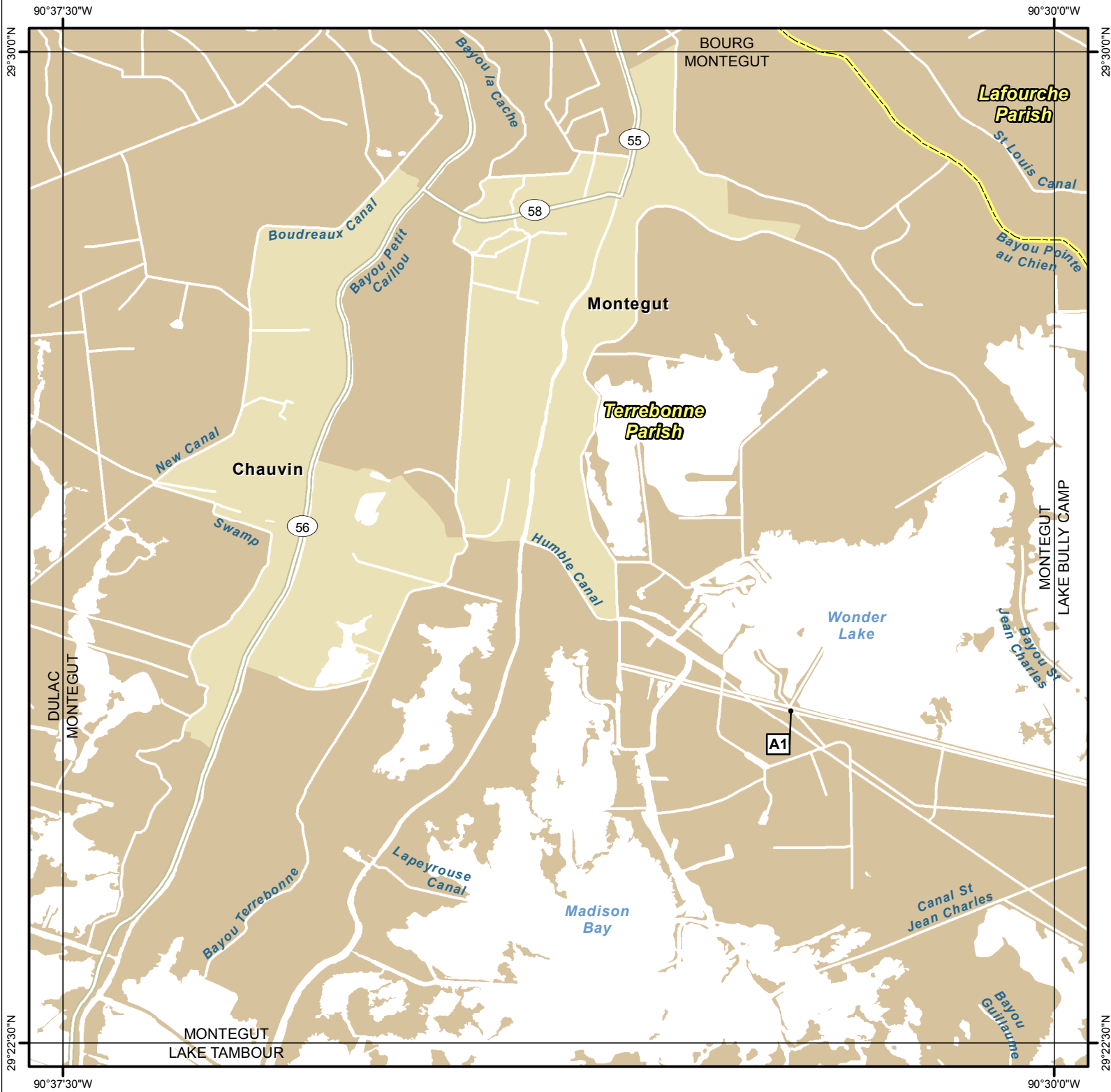


Site Information: B1		Location Information	
Name: Bayou Chauvin at Lake Boudreaux		Parish:	Terrebonne
		Quad Name:	Dulac
Priority: B		Quad Number:	2909035
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 26' 01.978" N
		Longitude:	90° 39' 53.419" W
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

Site Information: B2		Location Information	
Name: Falgout Canal at Houma Navigation		Parish:	Terrebonne
		Quad Name:	Dulac
Priority:	B	Quad Number:	2909035
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 23' 31.069" N
		Longitude:	90° 43' 51.554" W
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

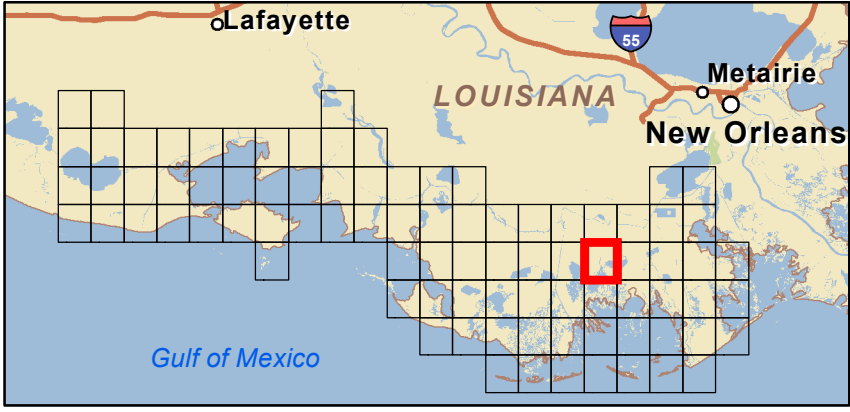
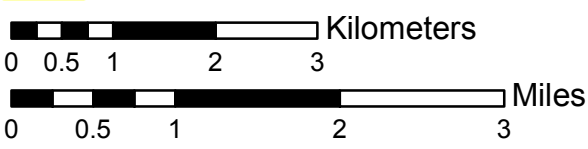
Site Information: B3		Location Information	
Name: Boudreaux at Lake Boudreaux	Parish:	Terrebonne	
	Quad Name:	Dulac	
Priority: B	Quad Number:	2909035	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 23' 17.461" N	
Site Description: Sensitive Wetlands	Longitude:	90° 37' 32.114" W	
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

MONTEGUT QUAD



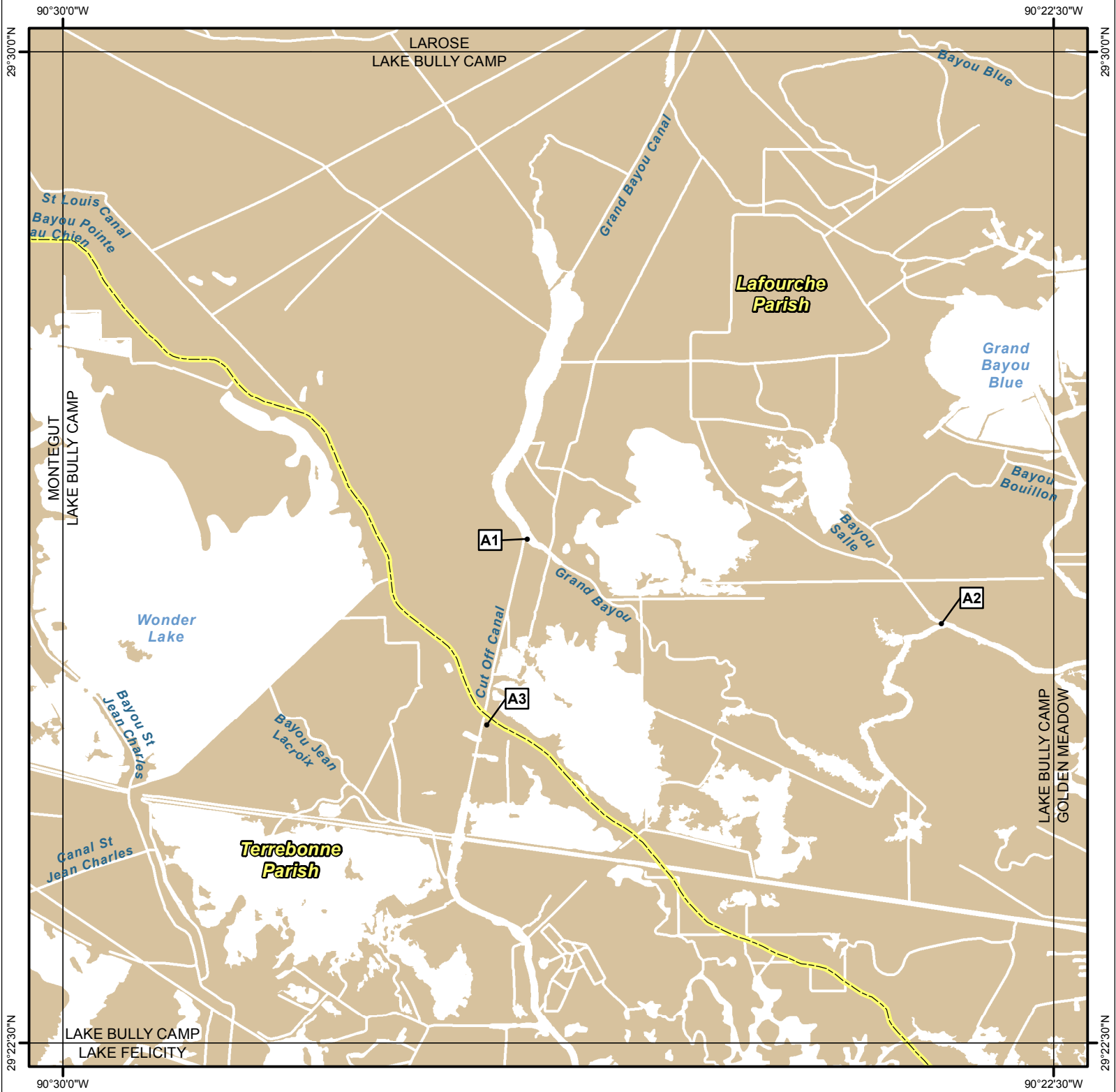
Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



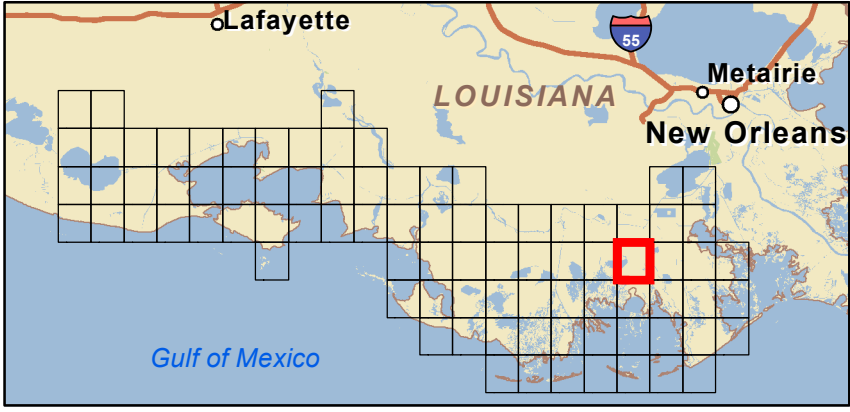
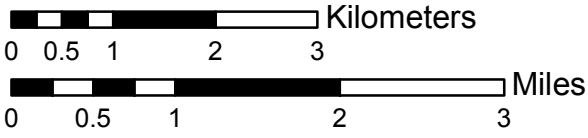
Site Information: A1		Location Information	
Name: Double Pipeline Canal	Parish: Terrebonne	Quad Name: Montegut	
Priority: A	Quad Number: 2909036		
Site Alias: None	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 25' 00.793" N		
Site Description: Wildlife Management Area (WMA)/Pointe Aux Chenes	Longitude: 90° 31' 59.470" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Wildlife Management Area (WMA)/Pointe Aux Chenes	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish (Note- two parallel canals side by side)	

LAKE BULLY CAMP QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

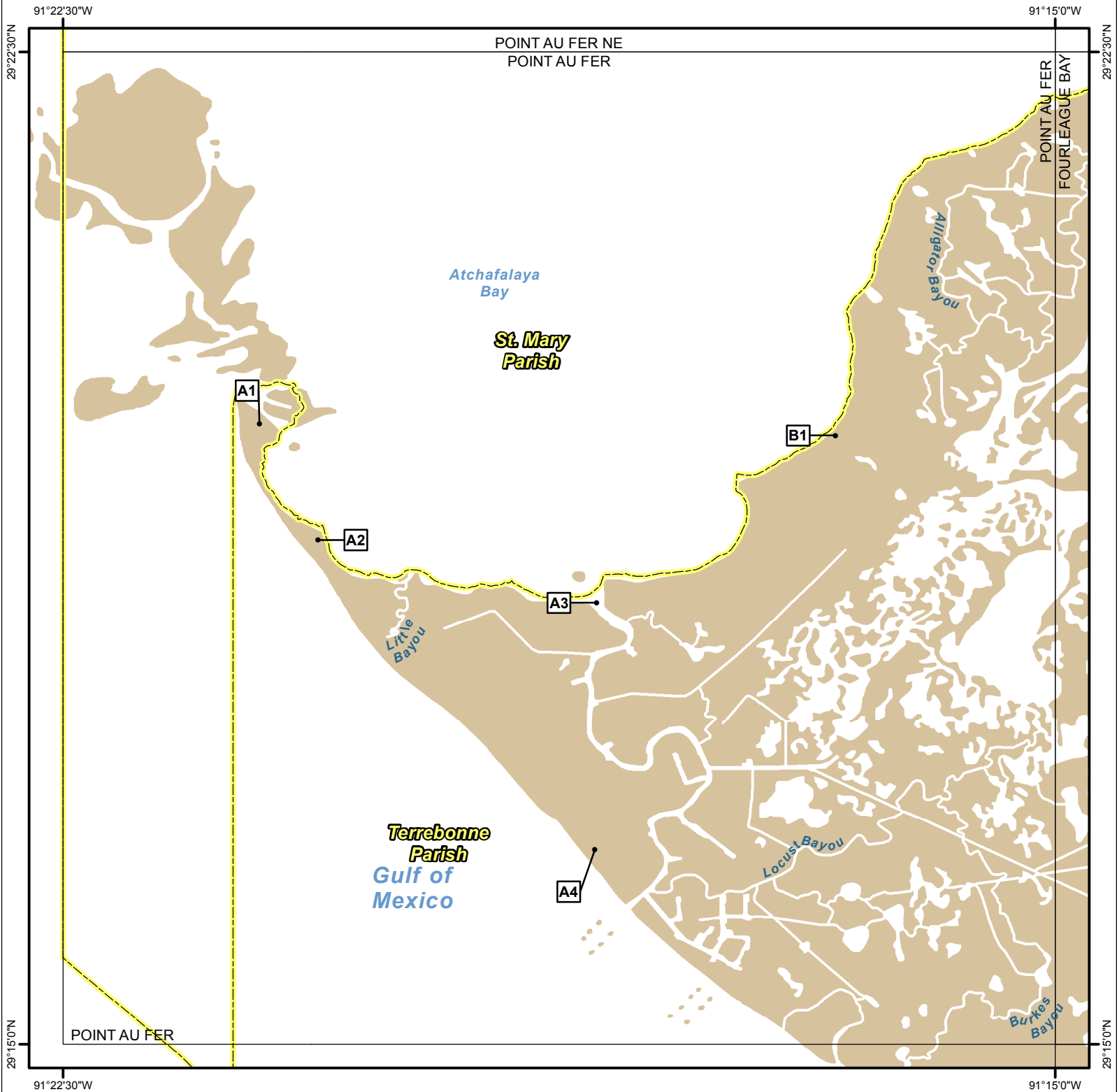


Site Information: A1		Location Information	
Name: Cut Off Canal		Parish:	Lafourche
		Quad Name:	Lake Bully Camp
Priority: A		Quad Number:	2909037
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 26' 18.858" N
Site Description: State Refuge part of Pointe Aux Chenes WMA		Longitude:	90° 26' 28.926" W
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Bayou		Parish:	Lafourche
		Quad Name:	Lake Bully Camp
Priority: A		Quad Number: 2909037	
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 25' 40.306" N
		Longitude:	90° 23' 20.855" W
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Cutoff Canal at Bayou Pointe Aux Chenes		Parish:	Terrebonne
		Quad Name:	Lake Bully Camp
Priority: A		Quad Number:	2909037
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Pointe Aux Chenes WMA		Latitude:	29° 24' 54.528" N
		Longitude:	90° 26' 47.413" W
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Pointe Aux Chenes WMA	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

POINT AU FER QUAD



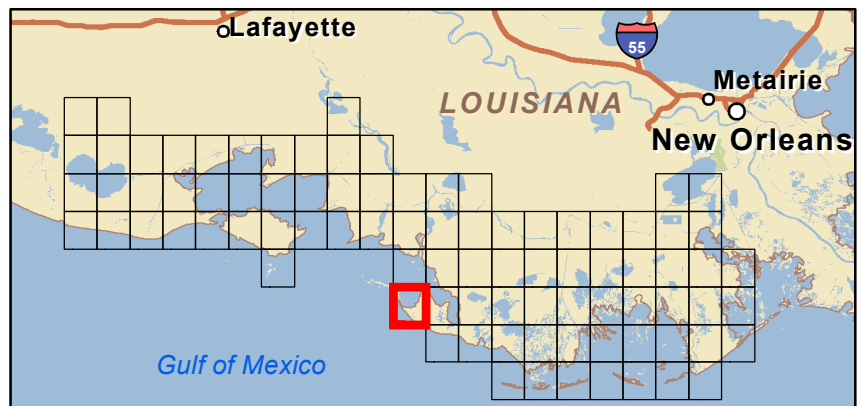
Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Shell Island Pass (entrance to Atchafalaya Delta WMA)	Parish:	Terrebonne	
	Quad Name:	Point Au Fer	
Priority: A	Quad Number:	2909146	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 19' 41.384" N	
Site Description: State Refuge part of Atchafalaya Delta WMA	Longitude:	91° 21' 00.938" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A/6A/2A		Resources At Risk Comments: Gull & Tern nesting area and critical Piping Plover habitat	
ESI Description 10A: Salt- and brackish-water marshes / 6A: Gravel beaches / 2A: Exposed Wave-cut Platform in clay			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

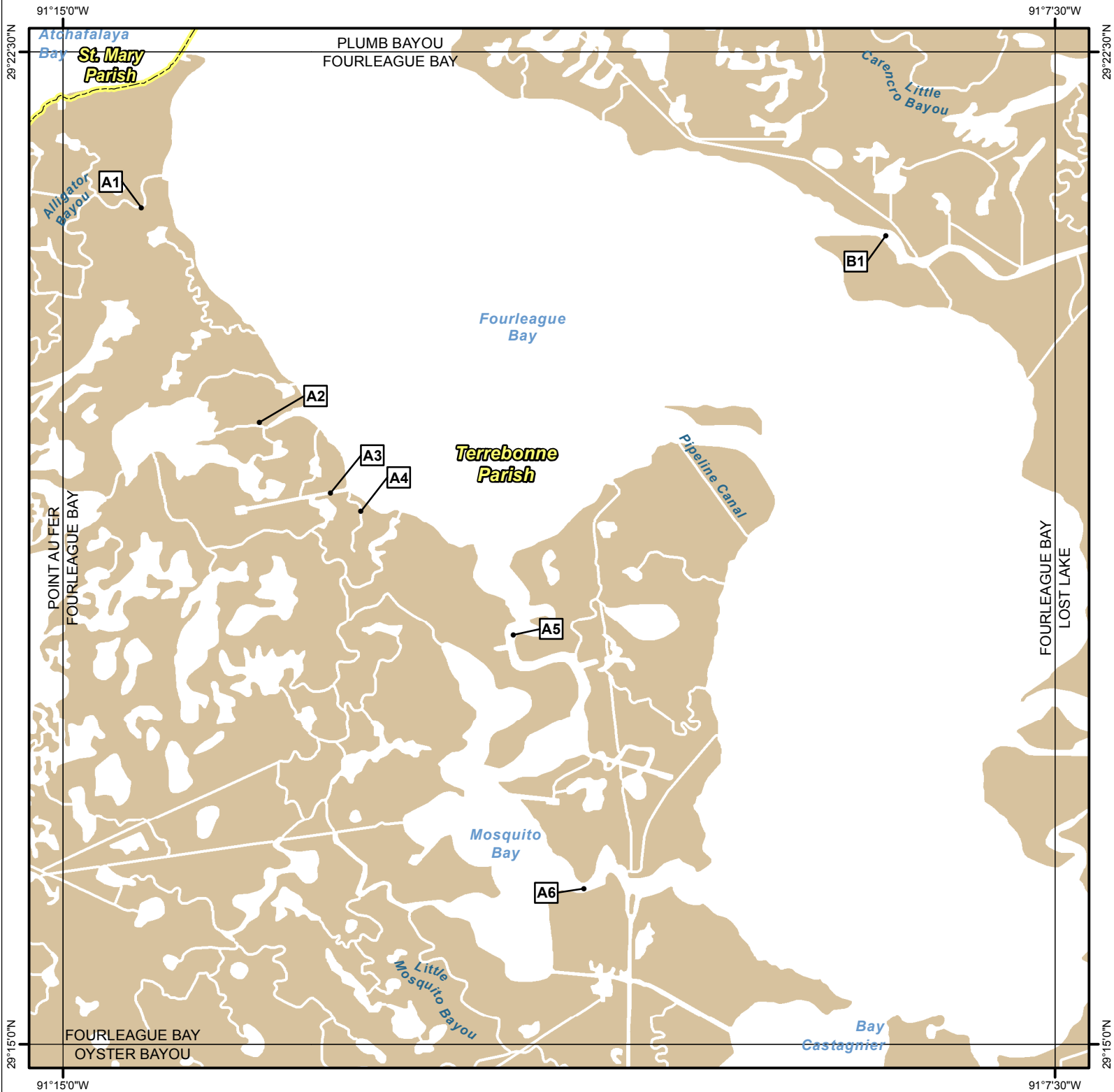
Site Information: A2		Location Information	
Name: All islands of lower Atchafalaya Delta WMA	Parish:	Terrebonne	
	Quad Name:	Point Au Fer	
Priority: A	Quad Number:	2909146	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 18' 48.681" N	
Site Description: State Refuge part of Atchafalaya Delta WMA	Longitude:	91° 20' 34.311" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A/6A/2A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes / 6A: Gravel beaches / 2A: Exposed Wave-cut Platform in clay			
		Bird nesting colonies - gulls, terns, skimmers, wading birds, mottled ducks, etc.	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A3		Location Information	
Name: Burkes Bayou		Parish:	Terrebonne
		Quad Name:	Point Au Fer
Priority:	A	Quad Number:	2909146
Site Alias:	N/A	Mile Marker:	
		Managed (Y/N)?:	N
Site Description:	Sensitive Habitat	Latitude:	29° 18' 20.250" N
		Longitude:	91° 18' 27.974" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A4		Location Information	
Name: Oyster Bayou	Parish: Terrebonne	Quad Name: Point Au Fer	
Priority: A	Quad Number: 2909146		
Site Alias: None	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 16' 28.204" N		
Site Description: Sandy Shore For Shoal Bird Nesting Area	Longitude: 91° 18' 28.731" W		
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A/6A		Resources At Risk Comments: Sandy Shore For Shoal Bird Nesting Area	
ESI Description 10A: Salt- and brackish-water marshes / 6A: Gravel beaches			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: B1		Location Information	
Name: Point Au Fer Island		Parish:	Terrebonne
		Quad Name:	Point Au Fer
Priority: B		Quad Number:	2909146
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands/Wildlife		Latitude:	29° 19' 36.135" N
		Longitude:	91° 16' 39.519" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A/6A/2A		Resources At Risk Comments: Sensitive Wetlands/Wildlife	
ESI Description 10A: Salt- and brackish-water marshes / 6A: Gravel beaches / 2A: Exposed Wave-cut Platform in clay			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

FOURLEAGUE BAY QUAD

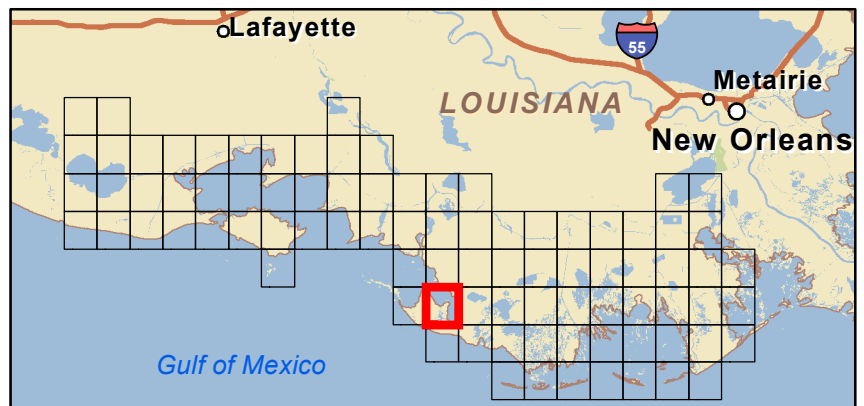


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Alligator Bayou	Parish:	Terrebonne	
	Quad Name:	Fourleague Bay	
Priority: A	Quad Number:	2909147	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 21' 19.442" N	
Site Description: Sensitive Habitat	Longitude:	91° 14' 24.628" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Canal (north)		Parish:	Terrebonne
		Quad Name:	Fourleague Bay
Priority: A		Quad Number:	2909147
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 19' 42.024" N
		Longitude:	91° 13' 31.023" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Canal (central)	Parish: Terrebonne	Quad Name: Fourleague Bay	
Priority: A	Quad Number: 2909147		
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 19' 09.946" N		
Site Description: Sensitive Habitat	Longitude: 91° 12' 58.773" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A4		Location Information	
Name: Wildcat Bayou		Parish:	Terrebonne
		Quad Name:	Fourleague Bay
Priority: A		Quad Number:	2909147
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 19' 01.697" N
		Longitude:	91° 12' 44.971" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A5		Location Information	
Name: Canal (south)	Parish: Terrebonne	Quad Name: Fourleague Bay	
	Quad Number: 2909147	Mile Marker:	
Priority: A	Managed (Y/N)?: N	Latitude: 29° 18' 05.580" N	
Site Alias: N/A	Longitude: 91° 11' 35.678" W	Site Description: Sensitive Habitat	
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments:		
ESI Description 10A: Salt- and brackish-water marshes	Sensitive Habitat		
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio	State Submitter: DEQ-Shane Miller and Steve Lorio		
Submit Date: 2013.04.16	State Comments: Sensitive Habitat		

Site Information: A6		Location Information	
Name: Mosquito Bayou	Parish: Terrebonne	Quad Name: Fourleague Bay	
	Quad Number: 2909147		
Priority: A	Mile Marker:		
Site Alias: N/A	Managed (Y/N)?: N		
	Latitude: 29° 16' 10.634" N		
	Longitude: 91° 11' 03.701" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

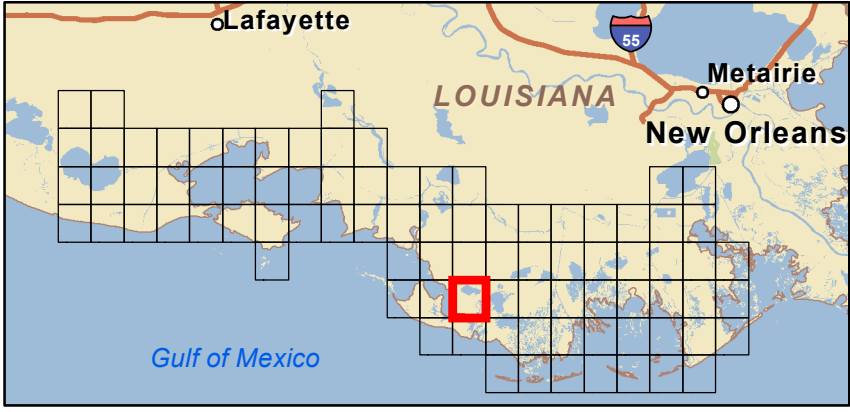
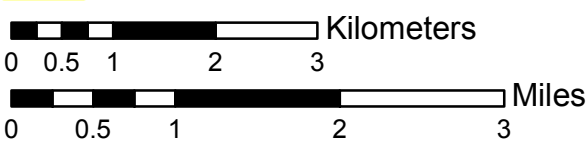
Site Information: B1		Location Information	
Name: Big Carencro Bayou at Fourleague Bay	Parish:	Terrebonne	
	Quad Name:	Fourleague Bay	
Priority: B	Quad Number:	2909147	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 21' 06.906" N	
Site Description: Sensitive wetlands	Longitude:	91° 08' 46.703" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

LOST LAKE QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: A1		Location Information	
Name: Bayou at Fiddlers Lake		Parish:	Terrebonne
		Quad Name:	Lost Lake
Priority: A		Quad Number:	2909148
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 17' 36.653" N
		Longitude:	91° 03' 42.398" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Buckskin Bayou at Bay Junop	Parish:	Terrebonne	
	Quad Name:	Lost Lake	
Priority: A	Quad Number:	2909148	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 16' 02.176" N	
Site Description: Sensitive Habitat	Longitude:	91° 01' 32.504" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: B1		Location Information	
Name: Blue Hammock Bayou (north)	Parish:	Terrebonne	
	Quad Name:	Lost Lake	
Priority: B	Quad Number:	2909148	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 17' 32.159" N	
Site Description: Sensitive Wetlands/Fishing	Longitude:	91° 07' 22.358" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 1500-2000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands/Fishing	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B2		Location Information	
Name: Blue Hammock Bayou (central)		Parish:	Terrebonne
		Quad Name:	Lost Lake
Priority: B		Quad Number:	2909148
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands/Fishing		Latitude:	29° 17' 11.747" N
		Longitude:	91° 07' 23.294" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands/Fishing	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

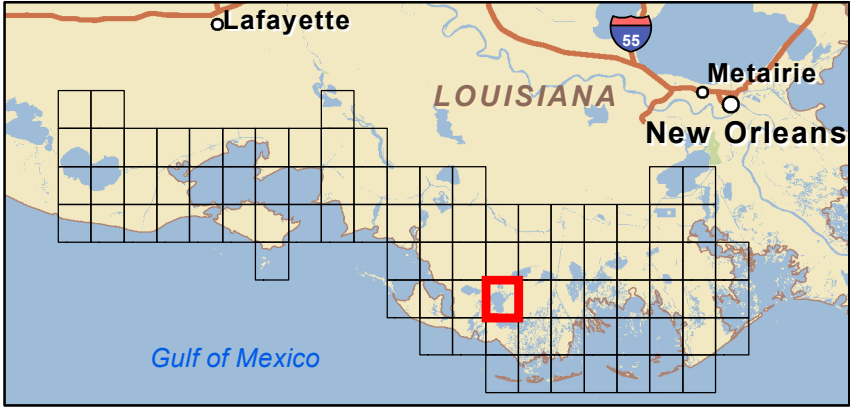
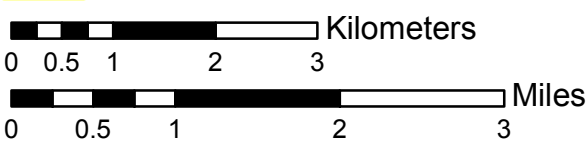
Site Information: B3		Location Information	
Name: Blue Hammock Bayou (south)	Parish:	Terrebonne	
	Quad Name:	Lost Lake	
Priority: B	Quad Number:	2909148	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 16' 58.002" N	
Site Description: Sensitive Wetlands/Fishing	Longitude:	91° 06' 51.308" W	
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments: Sensitive Wetlands/Fishing		
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By EOC	State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA		
Submit Date: 2012.10.01	State Comments: State concurs with Parish		

LAKE MECHANT QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

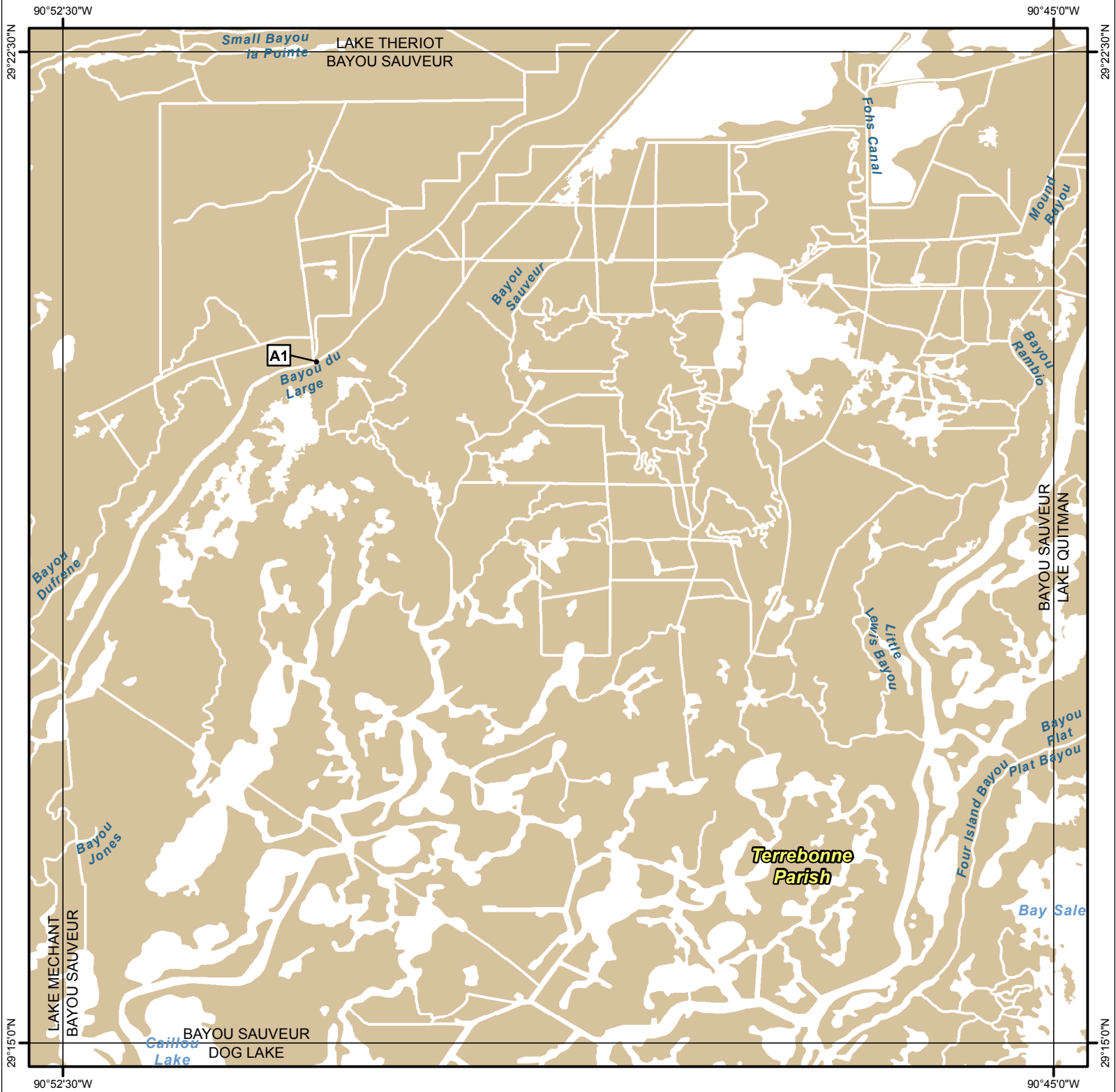


Site Information: B1		Location Information	
Name: Lake Decade East		Parish:	Terrebonne
		Quad Name:	Lake Mechant
Priority: B		Quad Number:	2909041
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 21' 58.194" N
		Longitude:	90° 56' 38.591" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B2		Location Information	
Name: Bayou Decade entrance into Bay Raccourci		Parish:	Terrebonne
		Quad Name:	Lake Mechant
Priority: B		Quad Number:	2909041
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 21' 31.925" N
		Longitude:	90° 56' 05.378" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

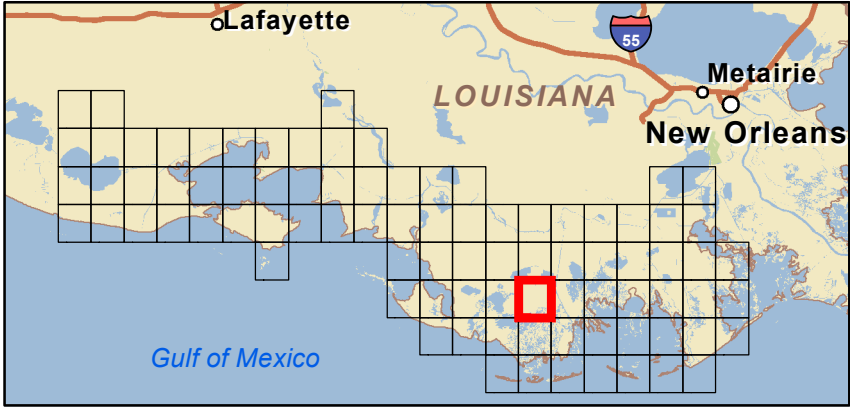
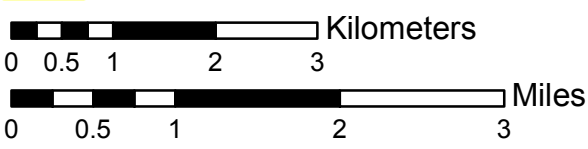
Site Information: B3		Location Information	
Name: Bayou Dularge at Lake Mechant		Parish:	Terrebonne
		Quad Name:	Lake Mechant
Priority: B		Quad Number:	2909041
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
		Latitude:	29° 15' 52.026" N
Site Description: Tern nesting/loafing area		Longitude:	90° 56' 07.685" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 1000-1500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Tern nesting/loafing area	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

BAYOU SAUVEUR QUAD



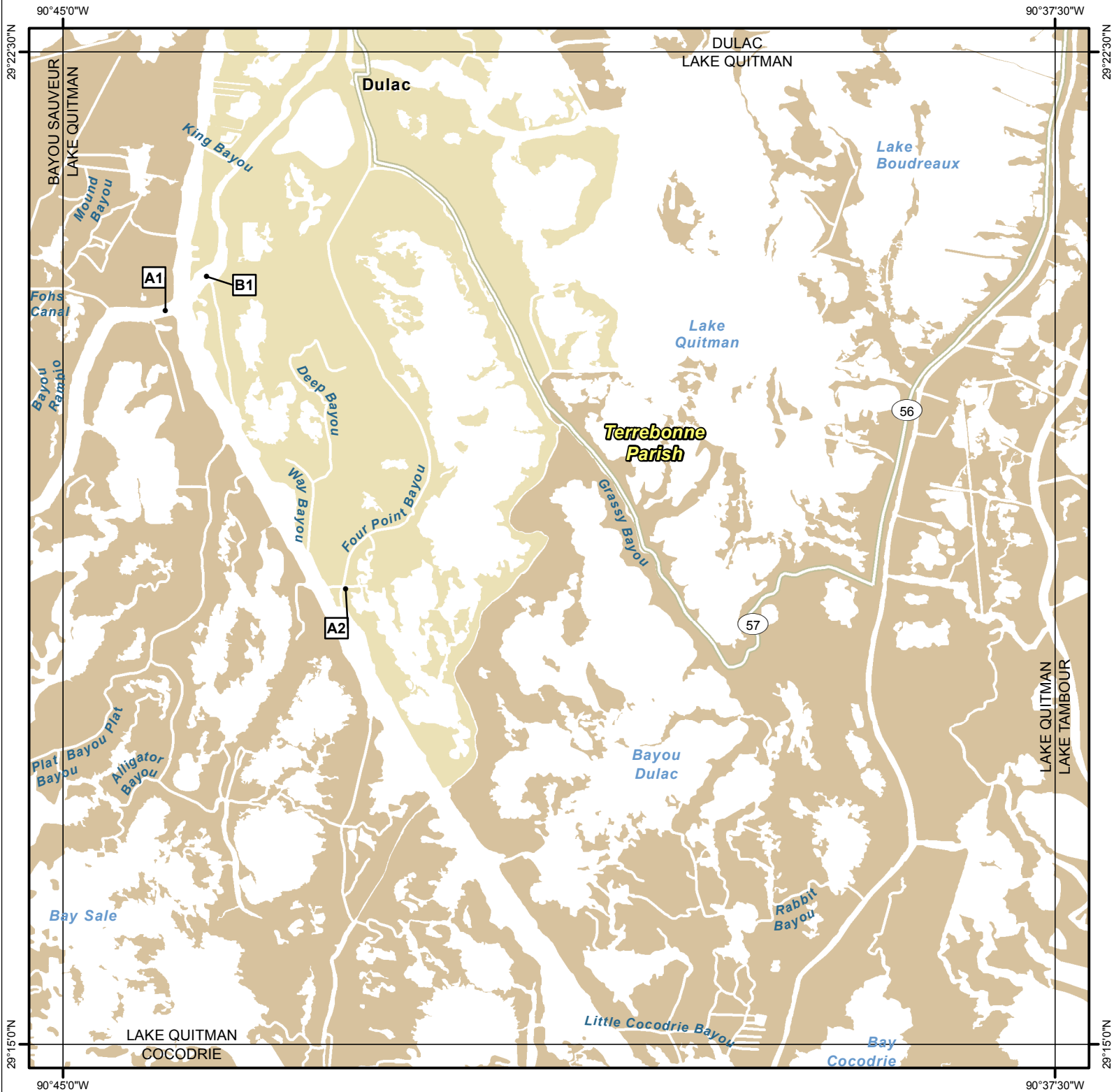
Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: A1		Location Information	
Name: Bayou Dularge flood gate by Jug Seafood	Parish:	Terrebonne	
	Quad Name:	Bayou Sauveur	
Priority: A	Quad Number:	2909042	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 20' 09.465" N	
Site Description: Sensitive Habitat	Longitude:	90° 50' 34.871" W	
Response Considerations			
Site Strategy: Notification to Site Manager		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

LAKE QUITMAN QUAD

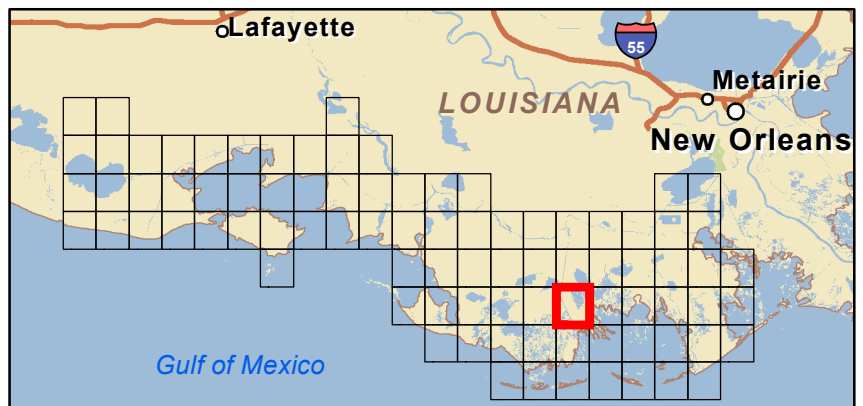


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Bayou Grand Caillou		Parish:	Terrebonne
		Quad Name:	Lake Quitman
Priority: A		Quad Number:	2909043
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 20' 32.663" N
		Longitude:	90° 44' 13.613" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: A2		Location Information	
Name: Houma Navigation at Bayou Four Point	Parish:	Terrebonne	
	Quad Name:	Lake Quitman	
Priority: A	Quad Number:	2909043	
Site Alias: Bayou Dularge Floodgate (Submitted by State)	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 18' 26.441" N		
Site Description: Sensitive Wetlands / notify owner	Longitude: 90° 42' 51.702" W		
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands / notify owner	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B1		Location Information	
Name: Houma Navigation at Grand Caillou		Parish:	Terrebonne
		Quad Name:	Lake Quitman
Priority: B		Quad Number:	2909043
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 20' 48.185" N
		Longitude:	90° 43' 54.858" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

LAKE TAMBOUR QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

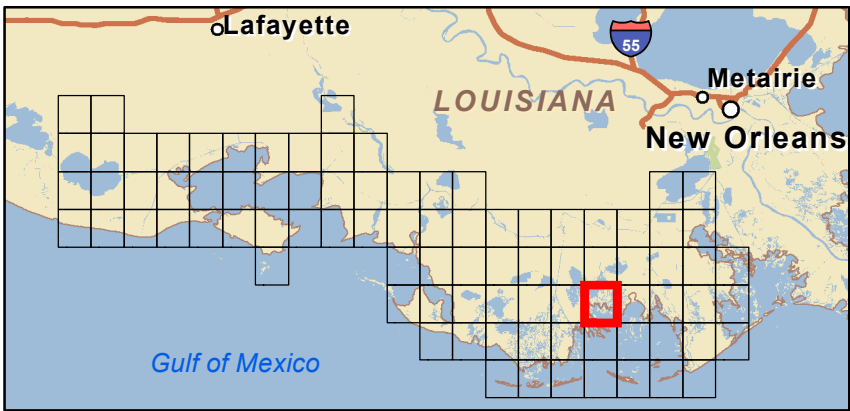
Kilometers

0 0.5 1 2 3

Miles

0 0.5 1 2 3

N



Site Information: A1		Location Information	
Name: Inlet from Bay la Peur		Parish:	Terrebonne
		Quad Name:	Lake Tambour
Priority: A		Quad Number:	2909044
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Inlet		Latitude:	29° 18' 33.131" N
		Longitude:	90° 32' 01.858" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DNR/CPRA		State Submitter: DNR/CPRA	
Submit Date: 2013.04.16		State Comments:	

Site Information: B1		Location Information	
Name: Bayou Barre at Bay Bourbeaux		Parish:	Terrebonne
		Quad Name:	Lake Tambour
Priority: B		Quad Number:	2909044
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 19' 55.554" N
		Longitude:	90° 32' 25.252" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B2		Location Information	
Name: Bayou Cuhghugne		Parish:	Terrebonne
		Quad Name:	Lake Tambour
Priority: B		Quad Number:	2909044
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 19' 04.524" N
		Longitude:	90° 34' 46.181" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B3		Location Information	
Name: Canal at Bay Boudreaux		Parish:	Terrebonne
		Quad Name:	Lake Tambour
Priority: B		Quad Number:	2909044
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 18' 53.271" N
		Longitude:	90° 34' 23.989" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B4		Location Information	
Name: Bayou Mangue at Bay Boudreaux		Parish:	Terrebonne
		Quad Name:	Lake Tambour
Priority: B		Quad Number:	2909044
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 18' 47.487" N
		Longitude:	90° 34' 04.450" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B5		Location Information	
Name: Lake Tambour (east)		Parish:	Terrebonne
		Quad Name:	Lake Tambour
Priority: B		Quad Number:	2909044
Site Alias: None		Mile Marker:	
		Managed (Y/N)?:	N
Site Description: Sensitive Wetlands		Latitude:	29° 18' 24.910" N
		Longitude:	90° 30' 06.393" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: 1000-1500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B6		Location Information	
Name: Lake Tambour (west)		Parish:	Terrebonne
		Quad Name:	Lake Tambour
Priority: B		Quad Number:	2909044
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 18' 21.963" N
		Longitude:	90° 31' 40.539" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action:			
Waterbody Opening: 1000-1500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B7		Location Information	
Name: Lake Tambour (central)		Parish:	Terrebonne
		Quad Name:	Lake Tambour
Priority: B		Quad Number:	2909044
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 18' 21.121" N
		Longitude:	90° 30' 32.223" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B8		Location Information	
Name: T45 CWPPRA Project (north)	Parish:	Terrebonne	
	Quad Name:	Lake Tambour	
Priority: B	Quad Number:	2909044	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 17' 15.678" N	
Site Description: Oyster Reef	Longitude:	90° 33' 12.365" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Open Water			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Oyster Reefs	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DNR/CPRA		State Submitter: DNR/CPRA	
Submit Date: 2013.04.16		State Comments:	

Site Information: B9		Location Information	
Name: Bayou Terrebonne	Parish:	Terrebonne	
	Quad Name:	Lake Tambour	
Priority: B	Quad Number:	2909044	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 17' 07.416" N	
Site Description: Sensitive Wetlands	Longitude:	90° 37' 22.236" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B10		Location Information	
Name: T45 CWPPRA Project (south)	Parish:	Terrebonne	
	Quad Name:	Lake Tambour	
Priority: B	Quad Number:	2909044	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 15' 25.164" N	
Site Description: Oyster Reef	Longitude:	90° 35' 27.066" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Open Water			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Oyster Reefs	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DNR/CPRA		State Submitter: DNR/CPRA	
Submit Date: 2013.04.16		State Comments:	

LAKE FELICITY QUAD



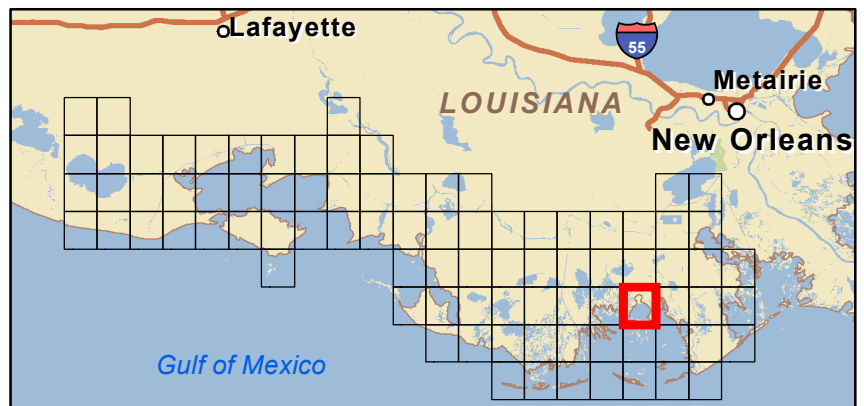
Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Canal		Parish:	Lafourche
		Quad Name:	Lake Felicity
Priority: A		Quad Number:	2909045
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 16' 30.023" N
		Longitude:	90° 22' 44.028" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Jeff Dauzat and Steve Lorio		State Submitter: DEQ-Jeff Dauzat and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Island in Lake Felicity		Parish:	Terrebonne
		Quad Name:	Lake Felicity
Priority: A		Quad Number:	2909045
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Bird nesting area		Latitude:	29° 15' 18.072" N
		Longitude:	90° 26' 21.277" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Pelican, roseate spoonbill and tern/gull nesting colony	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter:	
Submit Date: 2012.10.01		State Comments:	

Site Information: B1		Location Information	
Name: Lake Chien East		Parish:	Terrebonne
		Quad Name:	Lake Felicity
Priority: B		Quad Number:	2909045
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 21' 01.237" N
		Longitude:	90° 26' 48.491" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

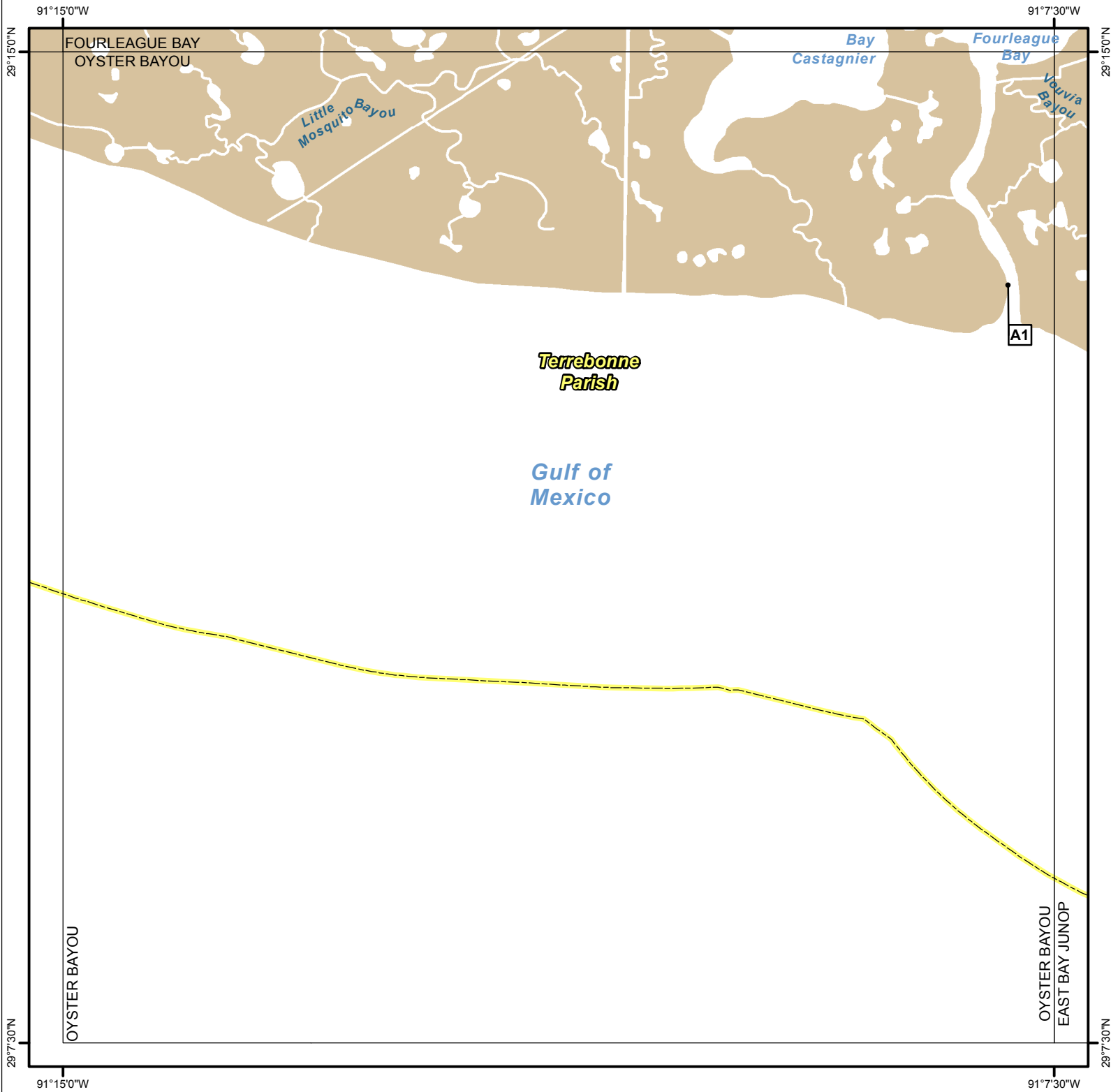
Site Information: B2		Location Information	
Name: Bayou Pointe Au Chien		Parish:	Terrebonne
		Quad Name:	Lake Felicity
Priority: B		Quad Number:	2909045
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 20' 53.587" N
		Longitude:	90° 25' 47.073" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B3		Location Information	
Name: Lake Chien Central		Parish:	Terrebonne
		Quad Name:	Lake Felicity
Priority: B		Quad Number:	2909045
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 20' 44.778" N
		Longitude:	90° 27' 10.289" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B4		Location Information	
Name: Lake Chien West		Parish:	Terrebonne
		Quad Name:	Lake Felicity
Priority: B		Quad Number:	2909045
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 20' 12.070" N
		Longitude:	90° 27' 35.027" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

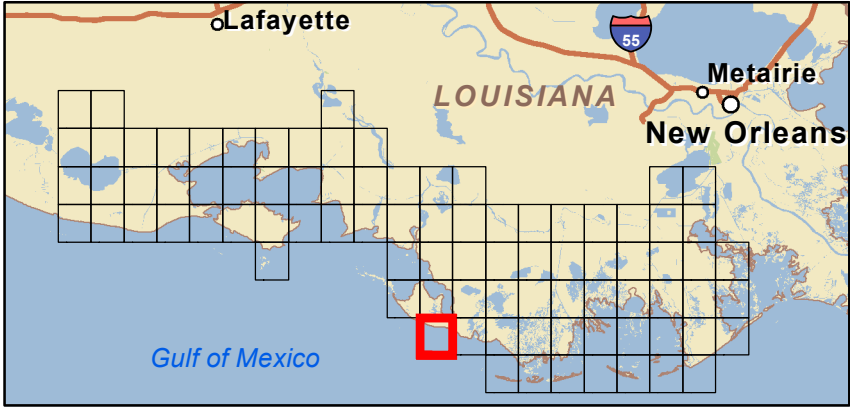
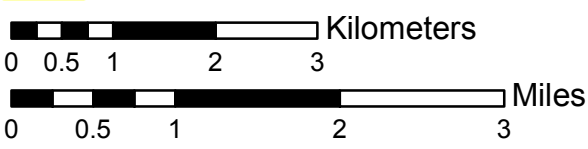
Site Information: B5		Location Information	
Name: Lake Felicity West		Parish:	Terrebonne
		Quad Name:	Lake Felicity
Priority: B		Quad Number:	2909045
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 18' 37.811" N
		Longitude:	90° 27' 44.777" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

OYSTER BAYOU QUAD



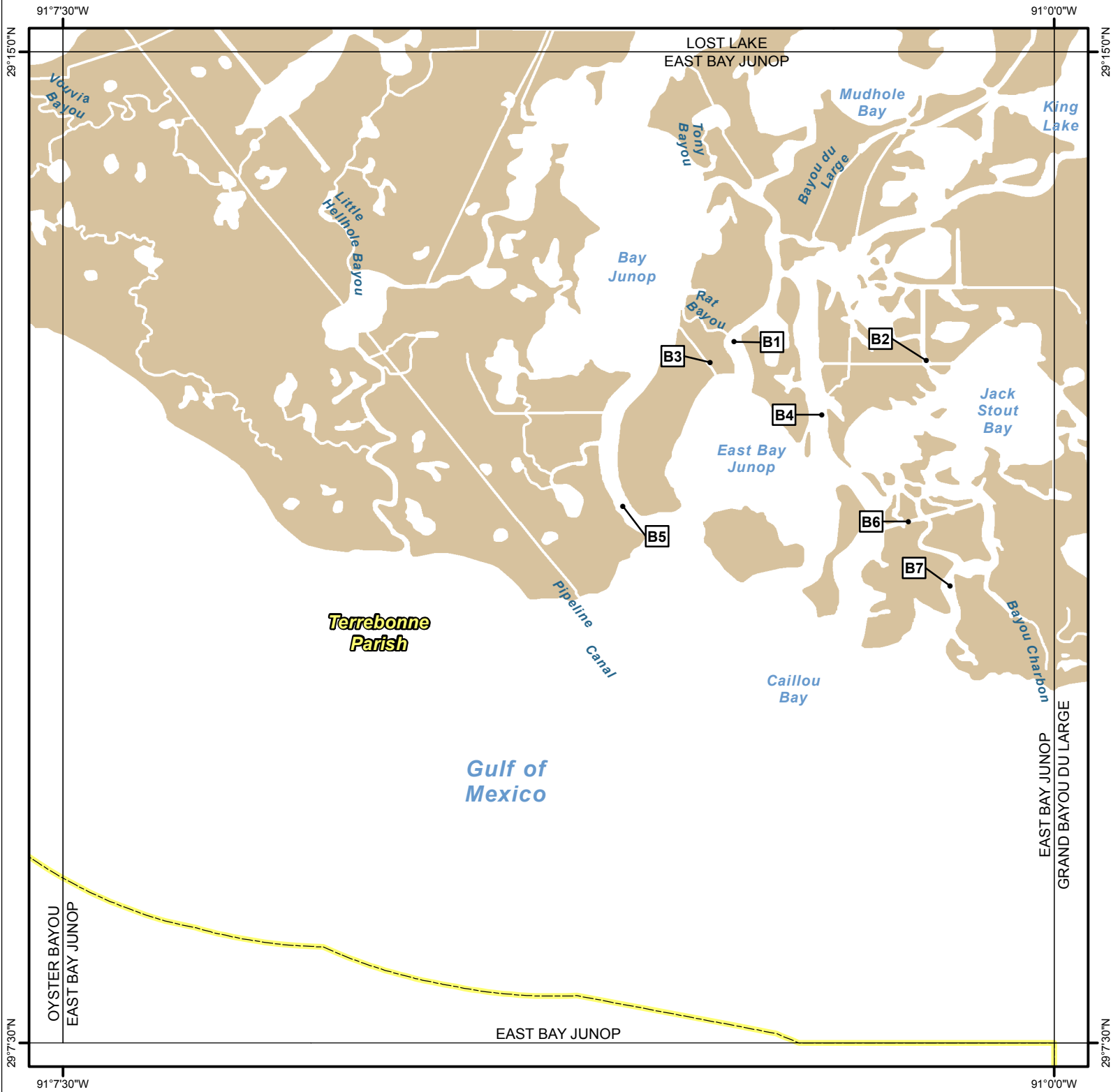
Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



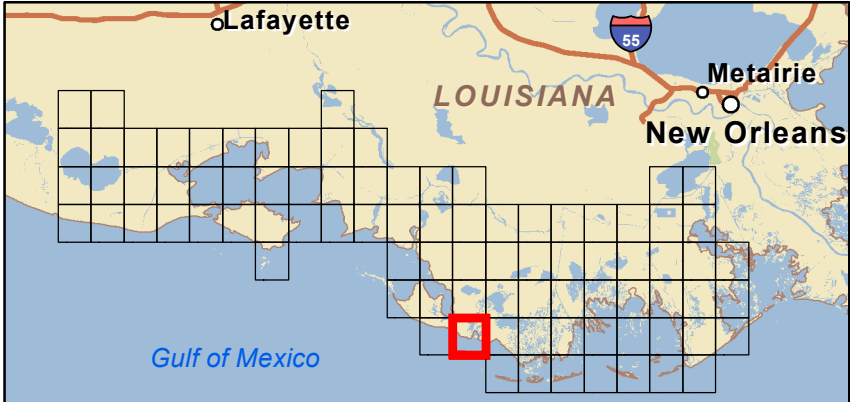
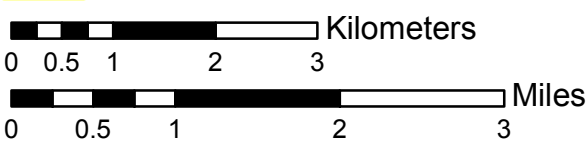
Site Information: A1		Location Information	
Name: Mouth of Oyster Bayou	Parish: Terrebonne	Quad Name: Oyster Bayou	
Priority: A	Quad Number: 2909155		
Site Alias: None	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 13' 14.328" N		
Site Description: Avian nesting area (beach nesters) & critical Piping Plover habitat	Longitude: 91° 07' 50.741" W		
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A/6A		Resources At Risk Comments: Avian nesting area (beach nesters) & critical Piping Plover habitat	
ESI Description 10A: Salt- and brackish-water marshes / 6A: Gravel beaches			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.03.13		State Comments: State concurs with Parish	

EAST BAY JUNOP QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: B1		Location Information	
Name: Bayou Junop at Terrebonne Bay		Parish:	Terrebonne
		Quad Name:	East Bay Junop
Priority:	B	Quad Number:	2909156
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 12' 48.307" N
		Longitude:	91° 02' 25.152" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B2		Location Information	
Name: Indian Bayou at Terrebonne Bay	Parish:	Terrebonne	
	Quad Name:	East Bay Junop	
Priority: B	Quad Number:	2909156	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 12' 39.729" N	
Site Description: Sensitive Wetlands	Longitude:	91° 00' 57.990" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B3		Location Information	
Name: Bayou at Terrebonne Bay (north)	Parish:	Terrebonne	
	Quad Name:	East Bay Junop	
Priority: B	Quad Number:	2909156	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 12' 39.070" N	
Site Description: Sensitive Wetlands	Longitude:	91° 02' 36.149" W	
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments: Sensitive Wetlands		
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By EOC	State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA		
Submit Date: 2012.10.01	State Comments: State concurs with Parish		

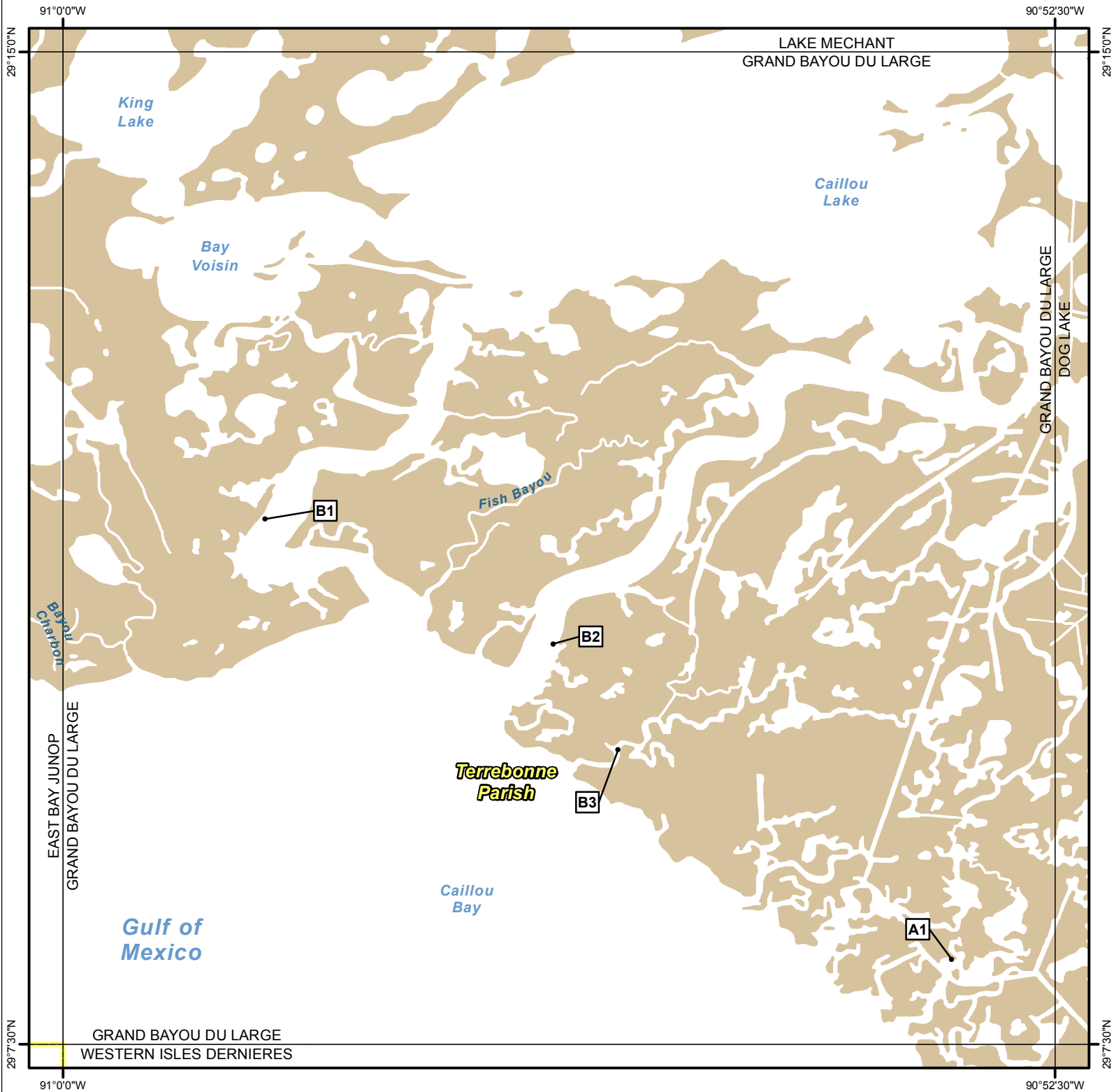
Site Information: B4		Location Information	
Name: Taylor Bayou at Terrebonne Bay		Parish:	Terrebonne
		Quad Name:	East Bay Junop
Priority: B		Quad Number:	2909156
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 12' 15.340" N
		Longitude:	91° 01' 45.471" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 1000-1500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B5		Location Information	
Name: Bayou De West at Terrebonne Bay	Parish:	Terrebonne	
	Quad Name:	East Bay Junop	
Priority: B	Quad Number:	2909156	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 11' 33.729" N	
Site Description: Sensitive Wetlands	Longitude:	91° 03' 15.791" W	
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A/6A/2A	Resources At Risk Comments: Sensitive Wetlands		
ESI Description 10A: Salt- and brackish-water marshes / 6A: Gravel beaches / 2A: Exposed Wave-cut Platform in clay			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By EOC	State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA		
Submit Date: 2012.10.01	State Comments: State concurs with Parish		

Site Information: B6		Location Information	
Name: Bayou at Terrebonne Bay (south)	Parish:	Terrebonne	
	Quad Name:	East Bay Junop	
Priority: B	Quad Number:	2909156	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Site Description: Bird Nesting Area / Sensitive Wetlands	Latitude:	29° 11' 26.836" N
	Longitude:	91° 01' 06.067" W	
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments: Bird Nesting Area / Sensitive Wetlands		
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By EOC	State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA		
Submit Date: 2012.10.01	State Comments: State concurs with Parish		

Site Information: B7		Location Information	
Name: Jack stout at Terrebonne Bay		Parish:	Terrebonne
		Quad Name:	East Bay Junop
Priority:	B	Quad Number:	2909156
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 10' 57.592" N
		Longitude:	91° 00' 47.299" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

GRAND BAYOU DU LARGE QUAD

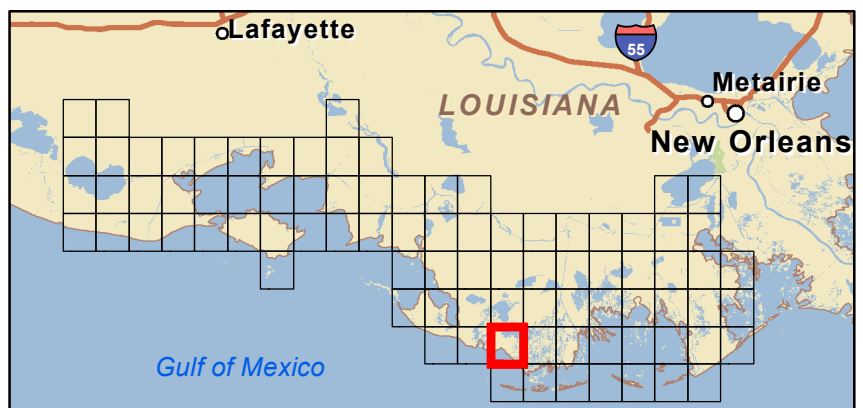


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Grand Bayou	Parish: Terrebonne	Quad Name: Grand Bayou Du Large	
Priority: A	Quad Number: 2909049		
Site Alias: None	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 08' 08.513" N		
Site Description: Sensitive habitat	Longitude: 90° 53' 16.721" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Small Streams			
Current Wave Action: Currents >2 kts			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B1		Location Information	
Name: Bayou Dularge at Terrebonne Bay		Parish:	Terrebonne
		Quad Name:	Grand Bayou Du Large
Priority: B		Quad Number:	2909049
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 11' 28.206" N
		Longitude:	90° 58' 28.304" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 2000-2500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B2		Location Information	
Name: Grand Bayou Dularge at Terrebonne Bay		Parish:	Terrebonne
		Quad Name:	Grand Bayou Du Large
Priority:	B	Quad Number:	2909049
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 10' 31.652" N
		Longitude:	90° 56' 17.645" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 2000-2500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B3		Location Information	
Name: Turtle Bayou at Terrebonne Bay		Parish:	Terrebonne
		Quad Name:	Grand Bayou Du Large
Priority: B		Quad Number:	2909049
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 09' 43.462" N
		Longitude:	90° 55' 48.237" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

DOG LAKE QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

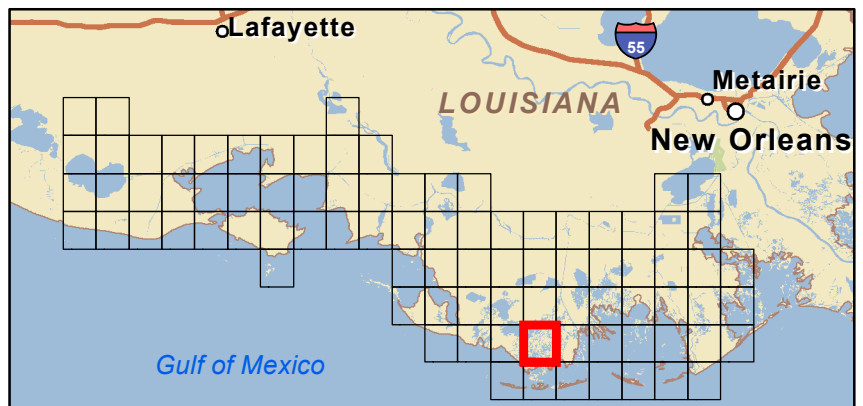


Kilometers

0 0.5 1 2 3

Miles

0 0.5 1 2 3



Site Information: B1		Location Information	
Name: Bayou Grand Caillou at Moncleuse Bay		Parish:	Terrebonne
		Quad Name:	Dog Lake
Priority:	B	Quad Number:	2909050
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 14' 13.680" N
		Longitude:	90° 48' 36.971" W
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B2		Location Information	
Name: Bayou Colyell at Pelican Lake		Parish:	Terrebonne
		Quad Name:	Dog Lake
Priority: B		Quad Number: 2909050	
Site Alias: None		Mile Marker:	
Site Description: Sensitive Wetlands		Managed (Y/N)?: N	
		Latitude: 29° 08' 24.252" N	
		Longitude: 90° 48' 57.024" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 1000-1500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B3		Location Information	
Name: Bayou Sale at Pelican Lake		Parish:	Terrebonne
		Quad Name:	Dog Lake
Priority: B		Quad Number:	2909050
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 07' 52.955" N
		Longitude:	90° 45' 17.148" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

COCODRIE QUAD

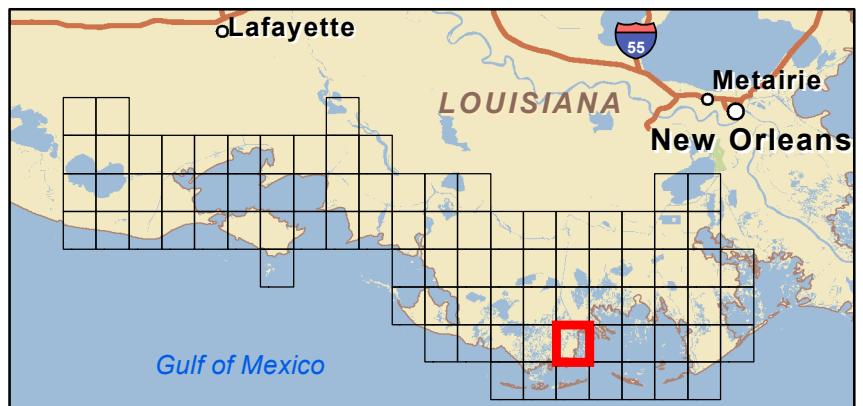


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: White Pelican Island in Terrebonne Bay		Parish:	Terrebonne
		Quad Name:	Cocodrie
Priority: A		Quad Number:	2909051
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Bird nesting area		Latitude:	29° 08' 27.015" N
		Longitude:	90° 38' 57.771" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Potential Brown Pelican and Tern nesting site	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

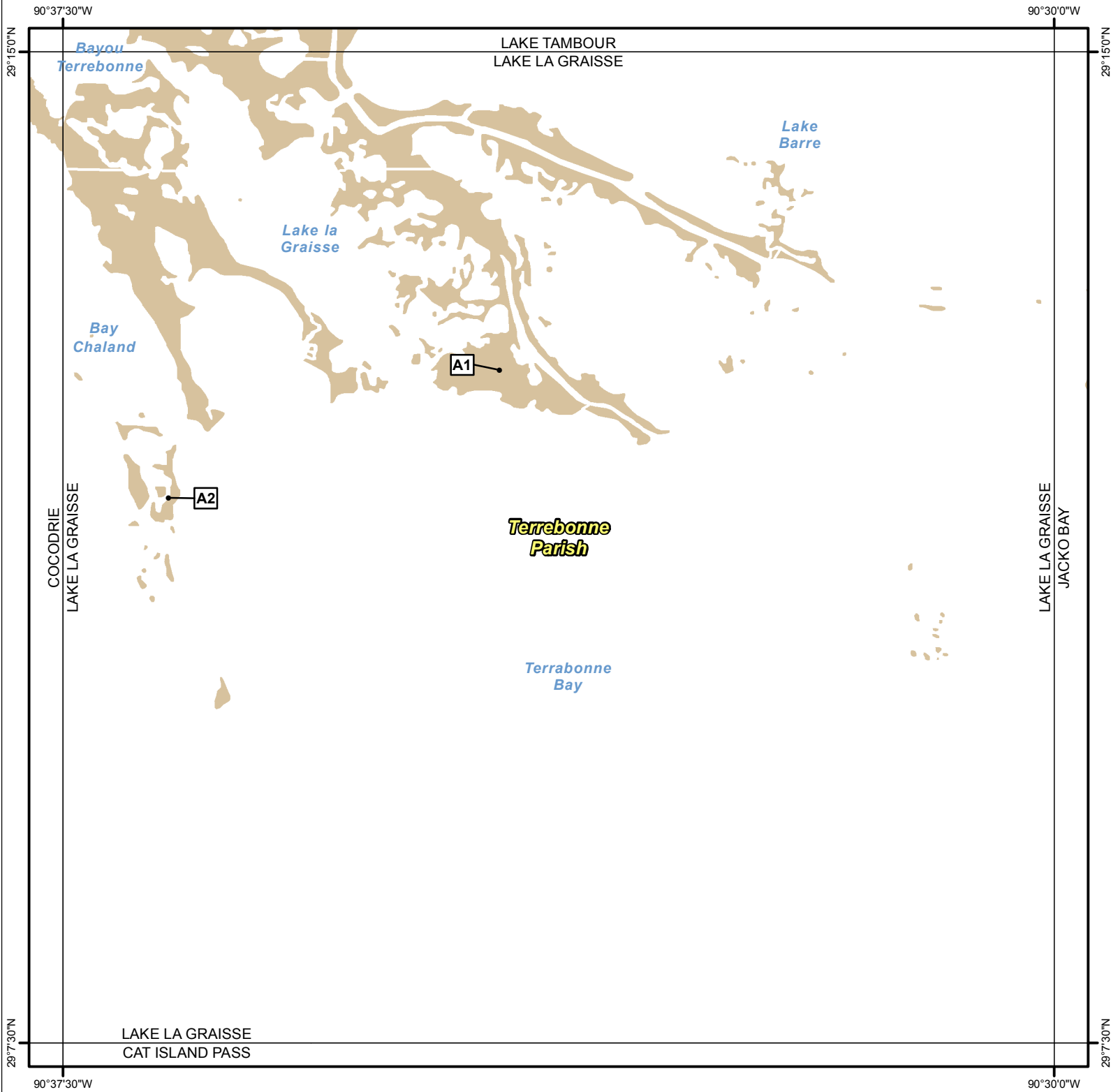
Site Information: A2		Location Information	
Name: Marsh / Island in Terrebonne Bay	Parish:	Terrebonne	
	Quad Name:	Cocodrie	
Priority: A	Quad Number:	2909051	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 07' 58.191" N	
Site Description: Bird nesting area	Longitude:	90° 41' 49.442" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Bird Nesting/Loafing Area	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: B1		Location Information	
Name: Bayou Little Caillou	Parish:	Terrebonne	
	Quad Name:	Cocodrie	
Priority: B	Quad Number:	2909051	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 14' 43.653" N	
Site Description: Sensitive Wetlands	Longitude:	90° 39' 45.645" W	
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: B2		Location Information	
Name: Houma Navigation at Bayou Little Caillou	Parish:	Terrebonne	
	Quad Name:	Cocodrie	
Priority: B	Quad Number:	2909051	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 14' 01.149" N	
Site Description: Sensitive Wetlands	Longitude:	90° 40' 11.508" W	
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

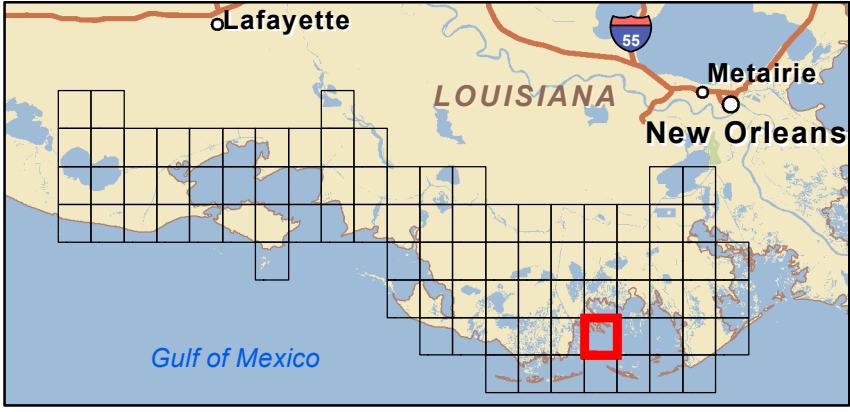
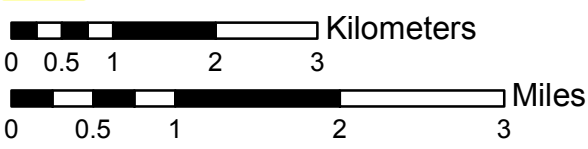
Site Information: B3		Location Information	
Name: Four Point Bayou		Parish:	Terrebonne
		Quad Name:	Cocodrie
Priority: B		Quad Number:	2909051
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Wetlands		Latitude:	29° 08' 44.926" N
		Longitude:	90° 44' 29.207" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Wetlands	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

LAKE LA GRAISSE QUAD



Legend

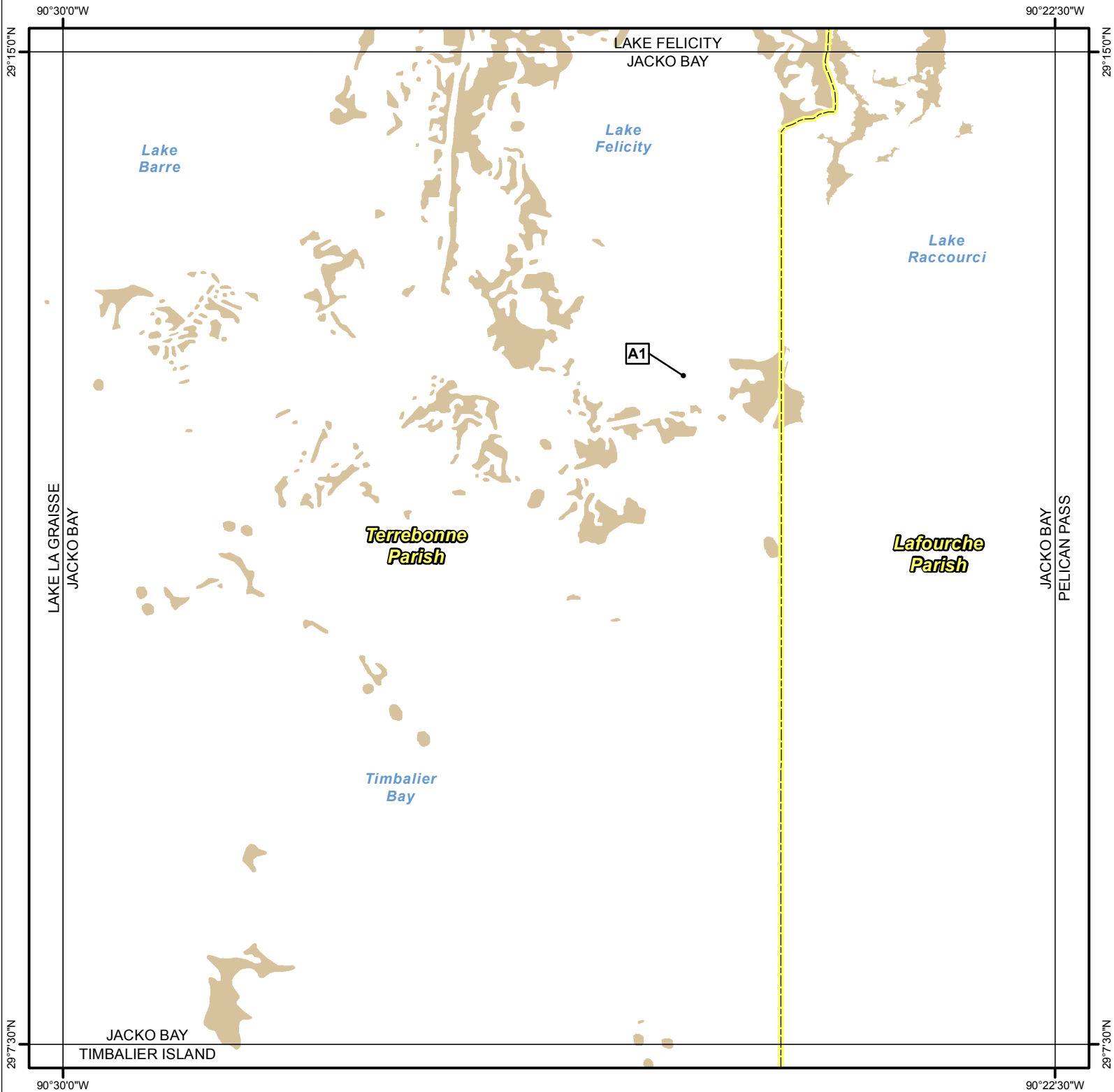
- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: A1		Location Information	
Name: Island in Terrebonne Bay (north)		Parish:	Terrebonne
		Quad Name:	Lake La Grosse
Priority: A		Quad Number:	2909052
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Bird nesting area		Latitude:	29° 12' 35.615" N
		Longitude:	90° 34' 11.746" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Bird Nesting/Loafing Area	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A2		Location Information	
Name: Island in Terrebonne Bay (south)		Parish:	Terrebonne
		Quad Name:	Lake La Graise
Priority: A		Quad Number:	2909052
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Bird nesting area		Latitude:	29° 11' 37.445" N
		Longitude:	90° 36' 42.208" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Bird Nesting/Loafing Area	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

JACKO BAY QUAD

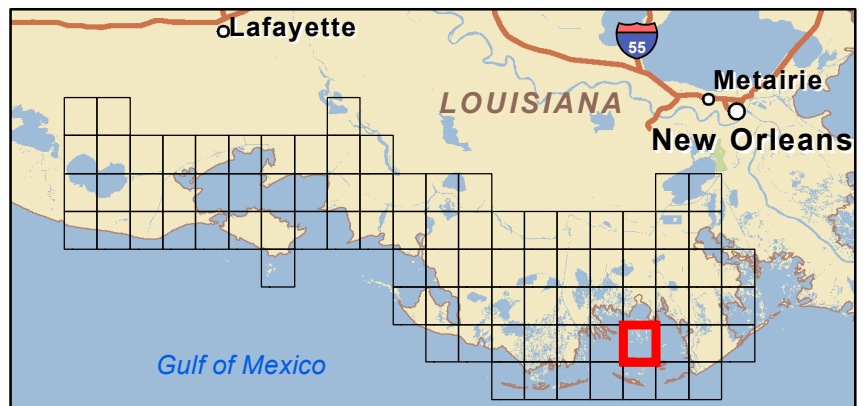


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

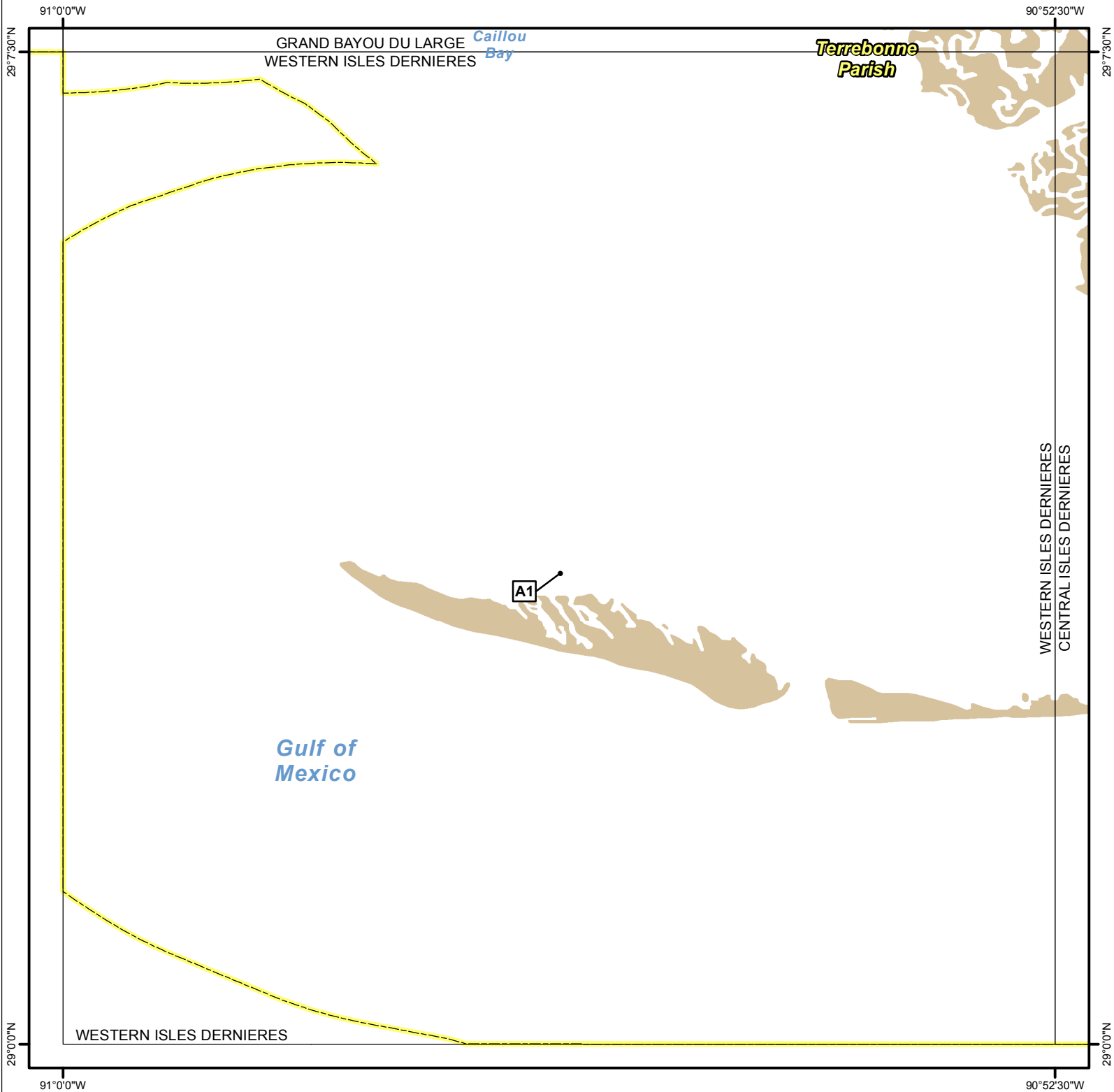
0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Island in Old Lady Lake	Parish:	Terrebonne	
	Quad Name:	Jacko Bay	
Priority: A	Quad Number:	2909053	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 12' 33.194" N	
Site Description: Bird nesting area	Longitude:	90° 25' 18.561" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Pelican, Tern, and Roseate Spoonbill nesting site	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

WESTERN ISLES DERNIERES QUAD

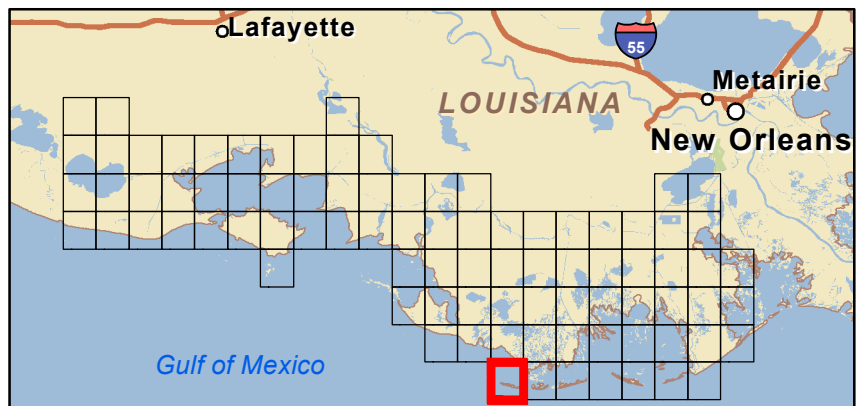


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

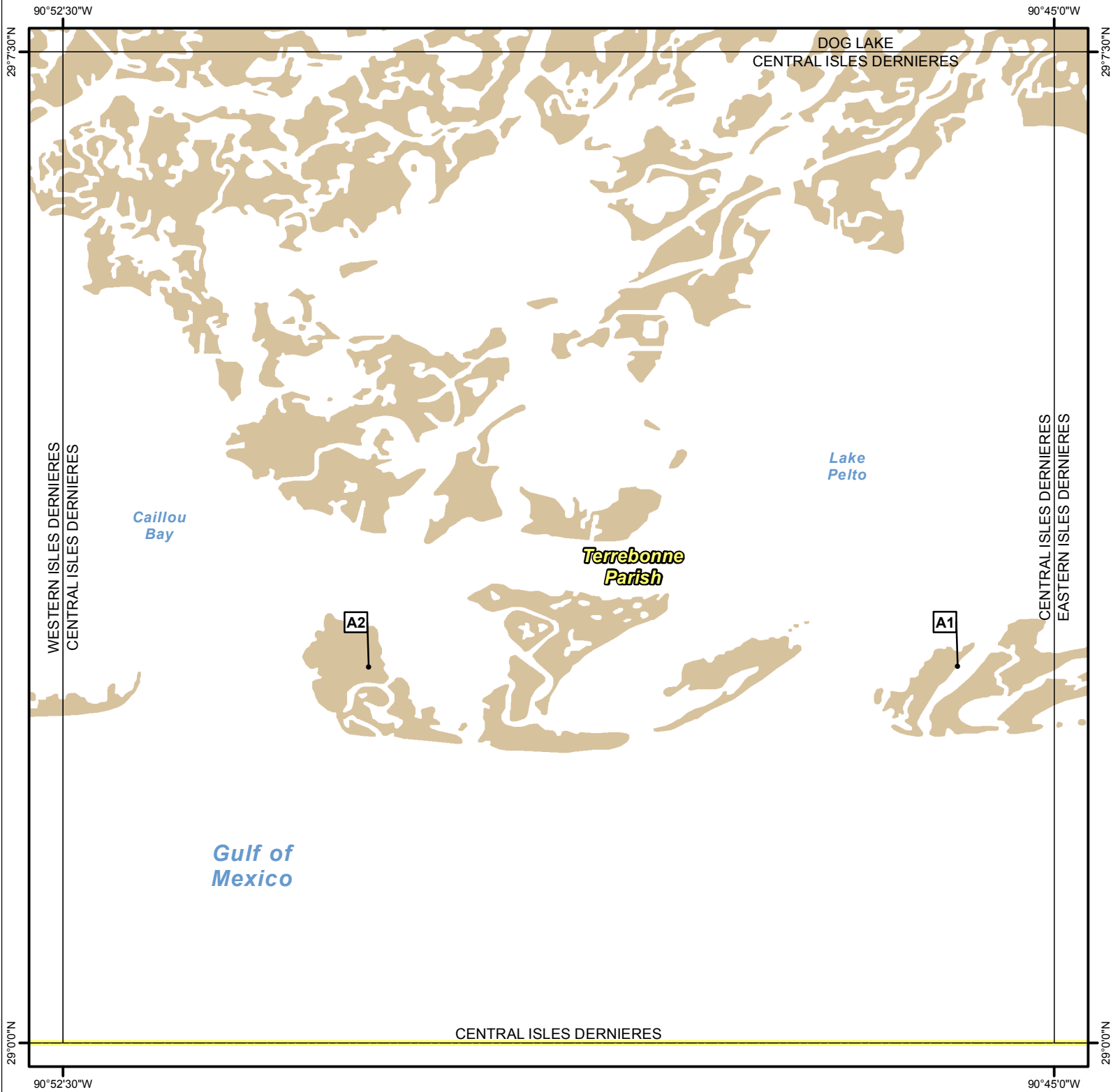
0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



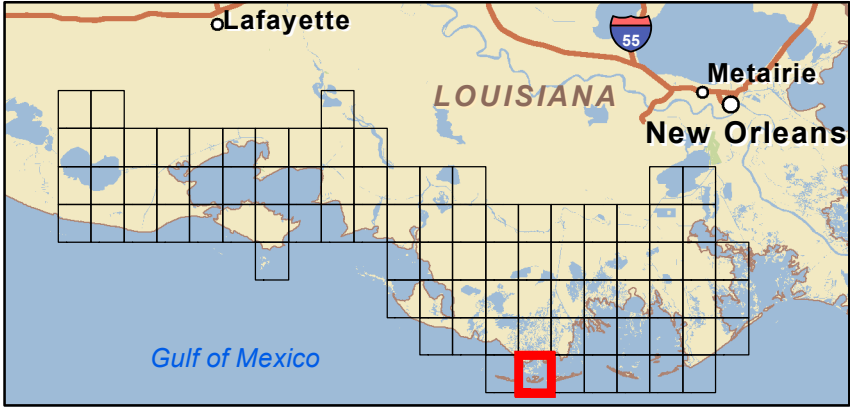
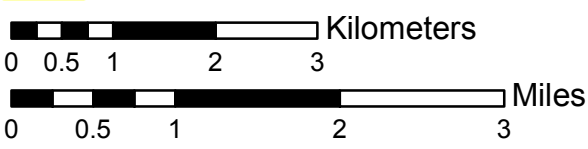
Site Information: A1		Location Information	
Name: Raccoon Island	Parish: Terrebonne	Quad Name: Western Isles Dernieres	
Priority: A	Quad Number: 2909057		
Site Alias: None	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 03' 33.626" N		
Site Description: State Refuge part of Isle Dernieres Barrier Islands Refuge (IDBIR)	Longitude: 90° 56' 14.481" W		
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: 2000-2500 ft			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description		Large pelican, wading bird, tern/gull bird nesting colony and critical piping plover habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

CENTRAL ISLES DERNIERES QUAD



Legend

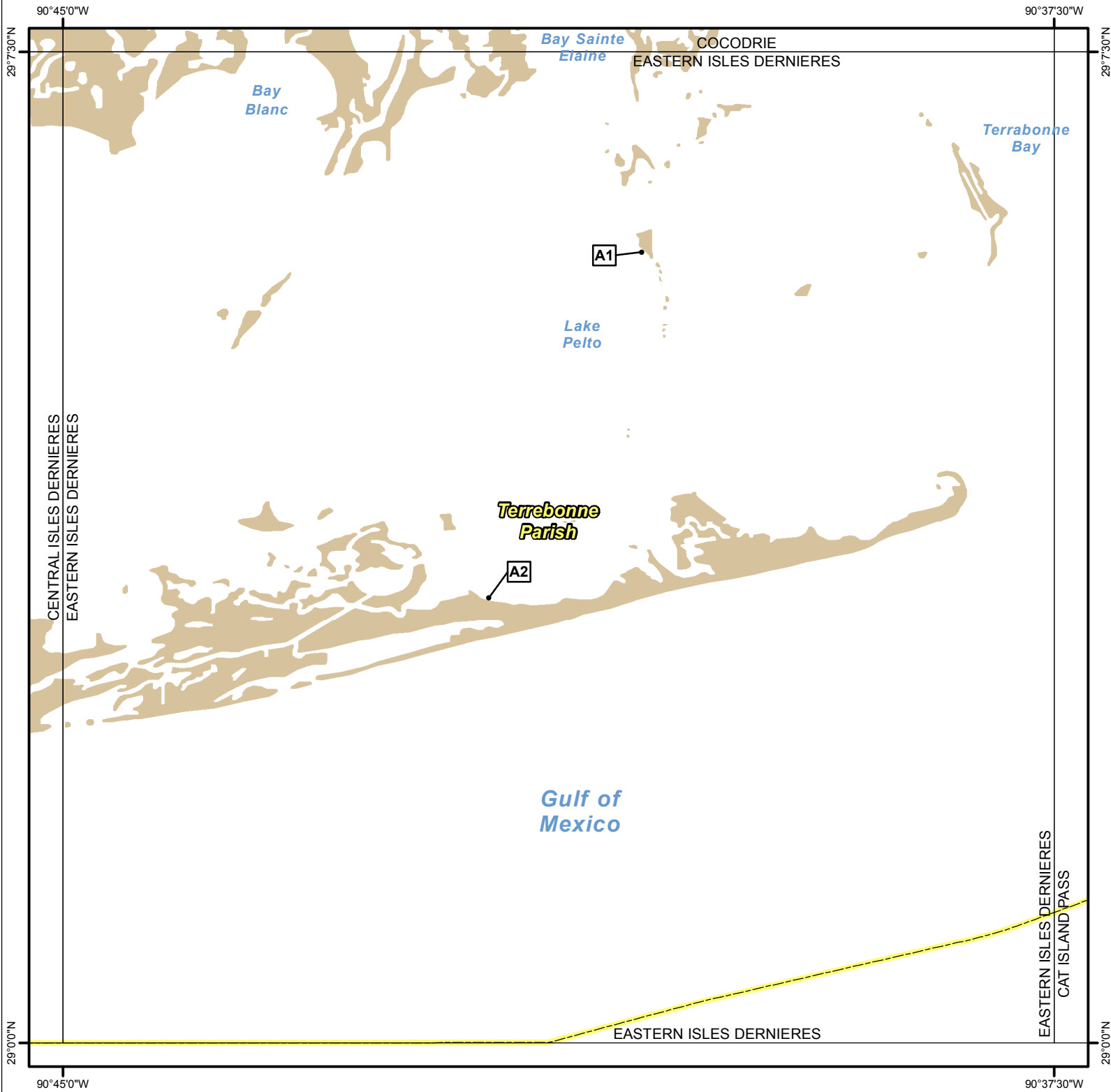
- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: A1		Location Information	
Name: Trinity Island WMA(west) / Eastern Isles Dernieres		Parish:	Terrebonne
		Quad Name:	Central Isles Dernieres
Priority: A		Quad Number:	2909058
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
Site Description: State Refuge part of Isle Dernieres Barrier Islands Refuge (IDBIR)		Latitude:	29° 02' 50.956" N
		Longitude:	90° 45' 43.806" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 4		Resources At Risk Comments: Skimmer/tern colonies and habitat for solitary beach nesting birds	
ESI Description 4: Coarse-grained sand beaches			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

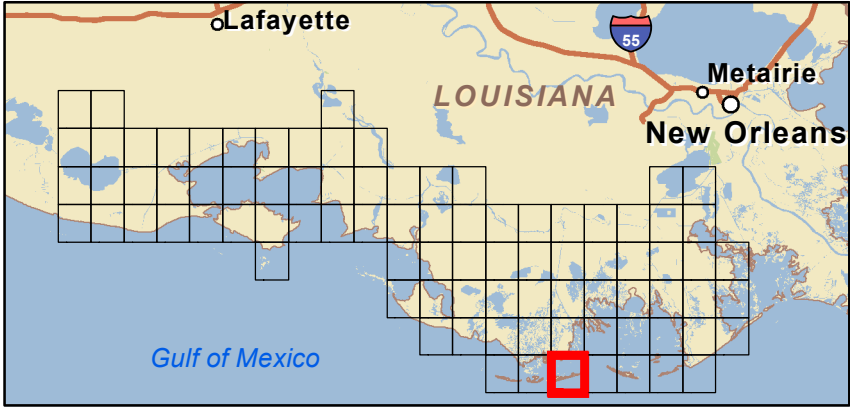
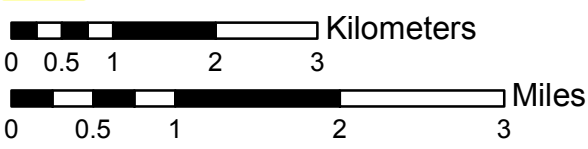
Site Information: A2		Location Information	
Name: Whiskey Island	Parish: Terrebonne	Quad Name: Central Isles Dernieres	
	Quad Number: 2909058		
Priority: A	Mile Marker:		
Site Alias: None	Managed (Y/N)?: Y - Wildlife Refuge		
	Latitude: 29° 02' 50.826" N		
	Longitude: 90° 50' 11.312" W		
Site Description: State Refuge part of Isle Dernieres Barrier Islands Refuge (IDBIR)			
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A/9A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes / 9A: Sheltered tidal flats		Skimmer/tern colonies and habitat for solitary beach nesting birds	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

EASTERN ISLES DERNIERES QUAD



Legend

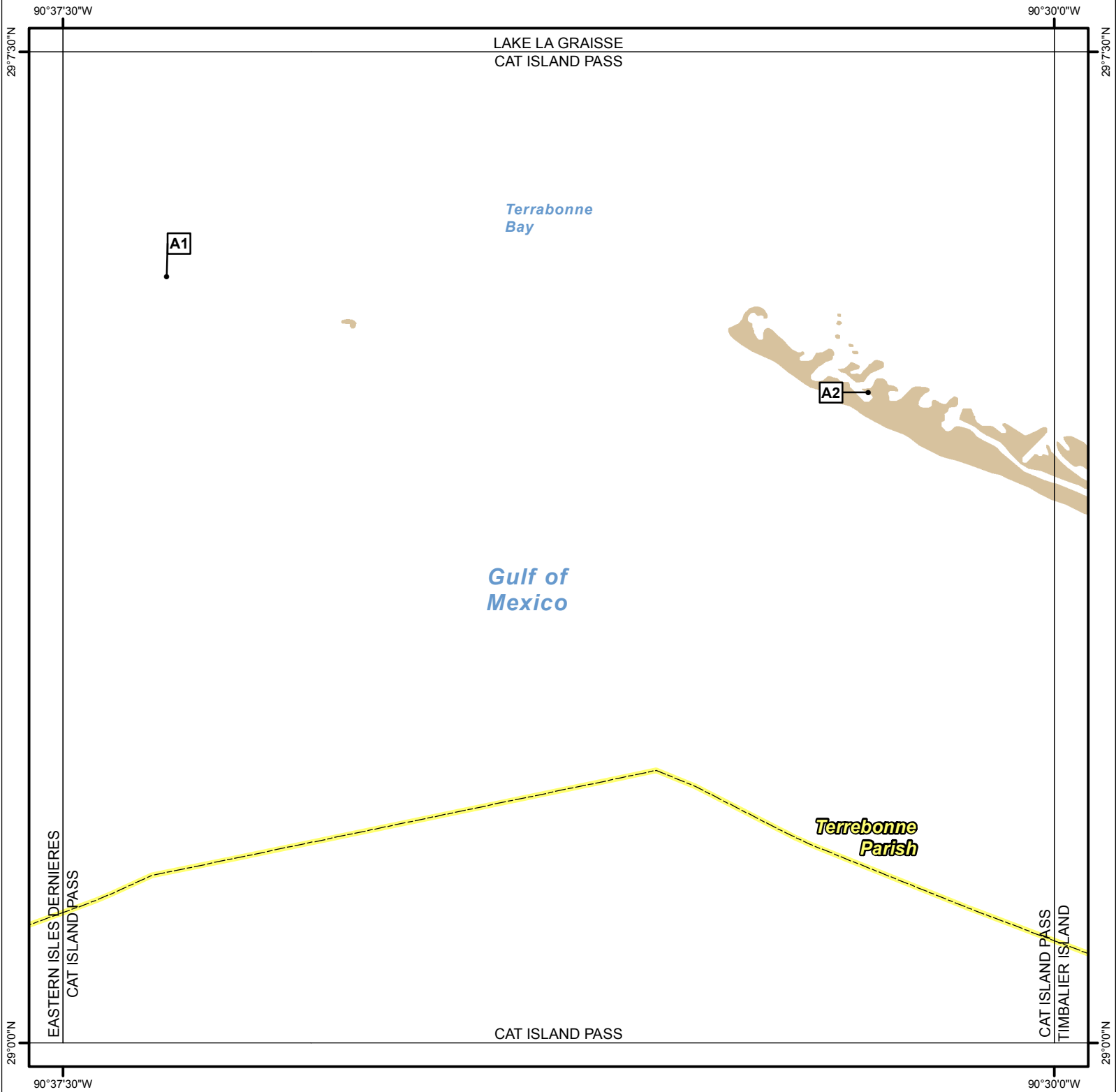
- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: A1		Location Information	
Name: Sulfur Mine Island		Parish:	Terrebonne
		Quad Name:	Eastern Isles Dernieres
Priority: A		Quad Number:	2909059
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Bird nesting area		Latitude:	29° 05' 59.148" N
		Longitude:	90° 40' 37.161" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Skimmer/tern colony	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A2		Location Information	
Name: Trinity Island WMA(east) / Eastern Isles Dernieres		Parish:	Terrebonne
		Quad Name:	Eastern Isles Dernieres
Priority: A		Quad Number:	2909059
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
Site Description: State Refuge part of Isle Dernieres Barrier Islands Refuge (IDBIR)		Latitude:	29° 03' 22.157" N
		Longitude:	90° 41' 46.691" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 3A/7		Resources At Risk Comments: Skimmer/tern colonies and habitat for solitary beach nesting birds	
ESI Description 3A: Fine- to medium-grained sand beaches / 7: Exposed tidal flats			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

CAT ISLAND PASS QUAD

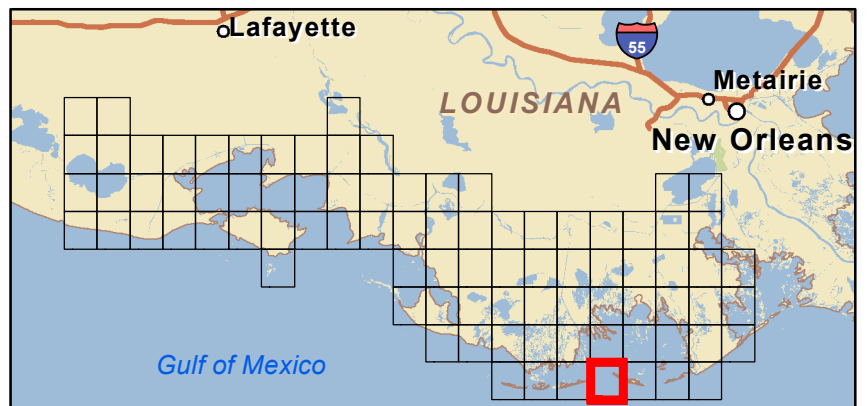


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

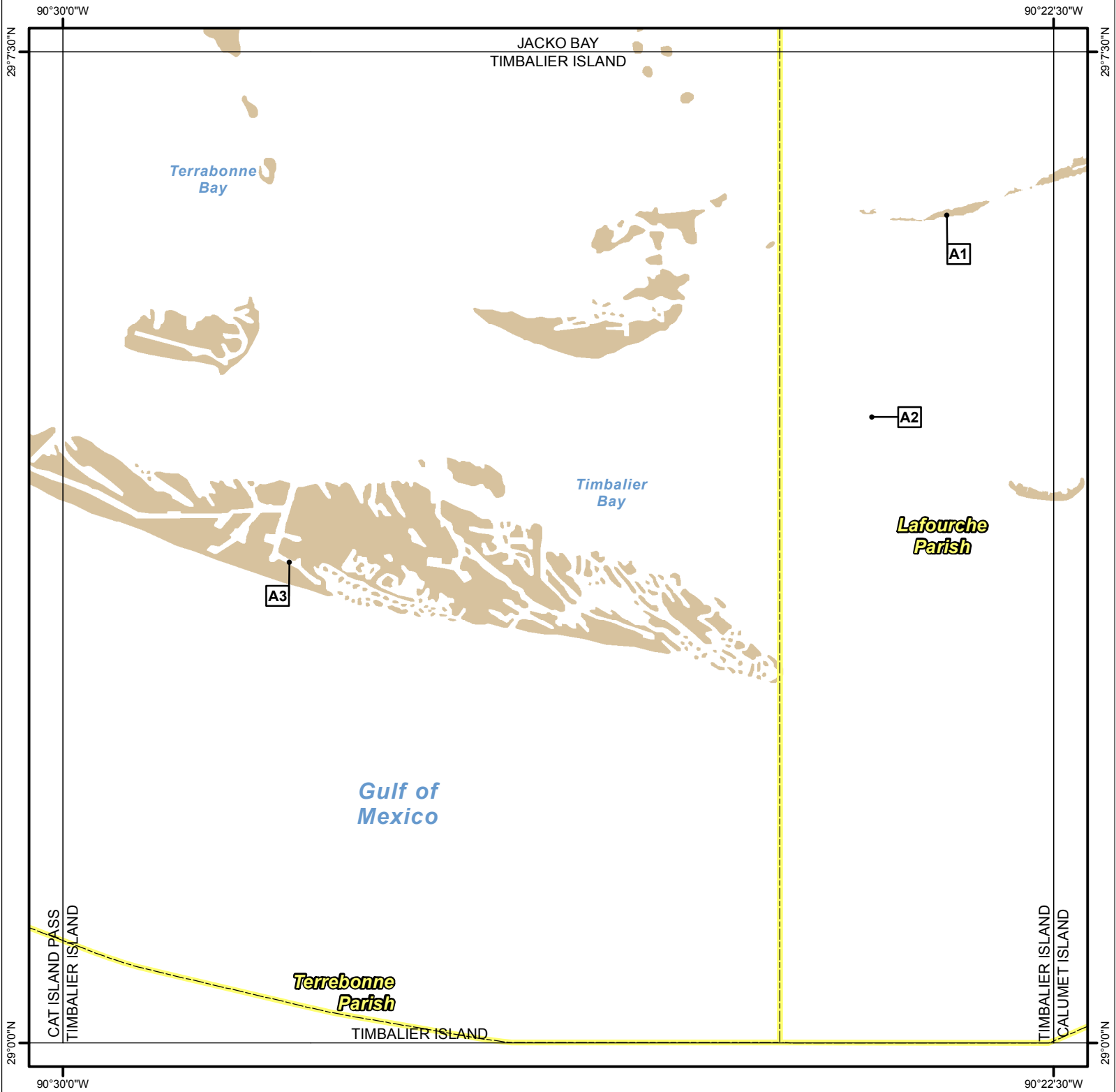
0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Wine Island		Parish:	Terrebonne
		Quad Name:	Cat Island Pass
Priority: A		Quad Number:	2909060
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 05' 47.955" N
Site Description: State Refuge part of Isle Dernieres Barrier Islands Refuge (IDBIR)		Longitude:	90° 36' 43.046" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Loafing area for a variety of birds	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

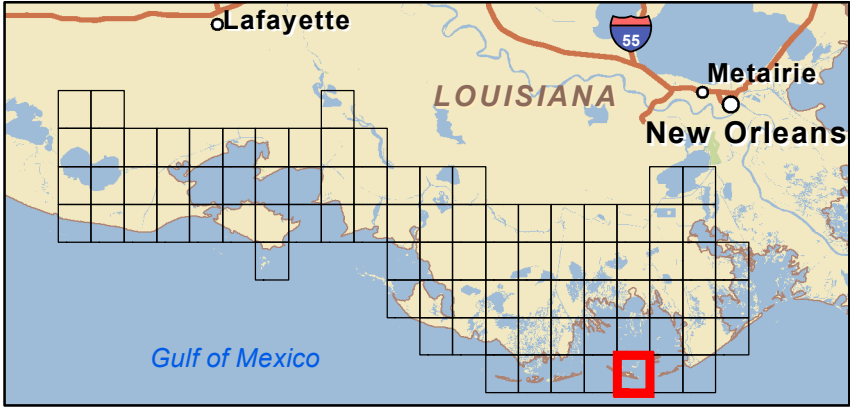
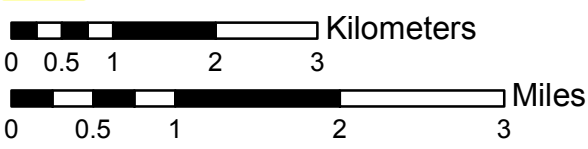
Site Information: A2		Location Information	
Name: Timbalier Island (west)	Parish:	Terrebonne	
	Quad Name:	Cat Island Pass	
Priority: A	Quad Number:	2909060	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 04' 55.431" N	
Site Description: Pelican and shorebird nesting area, & critical piping plover habitat	Longitude:	90° 31' 24.269" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Pelican and shorebird nesting area, & critical piping plover habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

TIMBALIER ISLAND QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: A1		Location Information	
Name: Raccoon Island	Parish: Terrebonne	Quad Name: Western Isles Dernieres	
Priority: A	Quad Number: 2909057		
Site Alias: None	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 03' 33.626" N		
Site Description: State Refuge part of Isle Dernieres Barrier Islands Refuge (IDBIR)	Longitude: 90° 56' 14.481" W		
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: 2000-2500 ft			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Large pelican, wading bird, tern/gull bird nesting colony and critical piping plover habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Site Information: A2		Location Information	
Name: East Timbalier Island (west)		Parish:	Lafourche
		Quad Name:	Timbalier Island
Priority:	A	Quad Number:	2909061
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Beach Bird Nesting Area		Latitude:	29° 04' 44.263" N
		Longitude:	90° 23' 52.473" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
Beach Bird Nesting Area			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A3		Location Information	
Name: Timbalier Island (east)		Parish:	Terrebonne
		Quad Name:	Timbalier Island
Priority:	A	Quad Number:	2909061
Site Alias: None		Mile Marker:	
		Managed (Y/N)?:	N
Site Description: Pelican and shorebird nesting area, & critical piping plover habitat		Latitude:	29° 03' 38.206" N
		Longitude:	90° 28' 17.262" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 3A		Resources At Risk Comments:	
ESI Description 3A: Fine- to medium-grained sand beaches			
		Pelican and shorebird nesting area, & critical piping plover habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ Terrebonne Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State concurs with Parish	

Appendix A: GRP Content Contributors

Captain Peter Gautier	Federal On-Scene Coordinator
Captain David McClellan	Federal On-Scene Coordinator
Captain Jonathan Burton	Federal On-Scene Coordinator
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Chris Boudreaux	Lafourche Parish OEP
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Earl Eues	Terrebonne Parish OEP
Prescott Marshall	Iberia Parish OEP
Todd Folse	Coastal Protection and Restoration Authority
Ann Howard	Coastal Protection and Restoration Authority
Chip McGimsey	State Historic Preservation Officer
Kyle Jellison	National Oceanic and Atmospheric Administration
Jeff Dauzat	Louisiana Department of Environmental Quality
Laura Carver	Louisiana Department of Wildlife and Fisheries
Nicholas LaCroix	Louisiana Department of Natural Resources
LCDR Keith Smith	U.S. Coast Guard
LCDR Chance Greene	U.S. Coast Guard
LCDR Lushan Hannah	U.S. Coast Guard
Brian Black	U.S. Coast Guard
Tanner Kneese	The Response Group
Fernando Terceros	The Response Group
Sarah Clavo	The Response Group
Terry Posey	Oil Mop Environmental Services
Ronald Johnson	Oil Mop Environmental Services
Cliff Collins	Oil Mop Environmental Services

Appendix B: GRP Comments/Corrections/Suggestions

If you have any questions regarding this document or find any errors, please notify the following agency:

U.S. Coast Guard

MSU Morgan City

Phone number: (985) 380-5330

Internet/E-mail Address: brian.k.black@uscg.mil

Address: Commander
U.S. Coast Guard
800 David Drive
Morgan City, LA 70380
Attn: Brian Black

Comments/Corrections/Suggestions Form

Directions: Fill in your name, address, agency, and phone number. Fill in the blanks regarding the location of information in the plan being commented on. Make Comments in space provided. Add extra sheets as necessary.

Name:	_____	Title:	_____	Agency:	_____
Address:	_____				
City:	_____	State/Province:	___	Zip/Postal Code:	_____
Phone:	(____)	E-Mail:	_____		

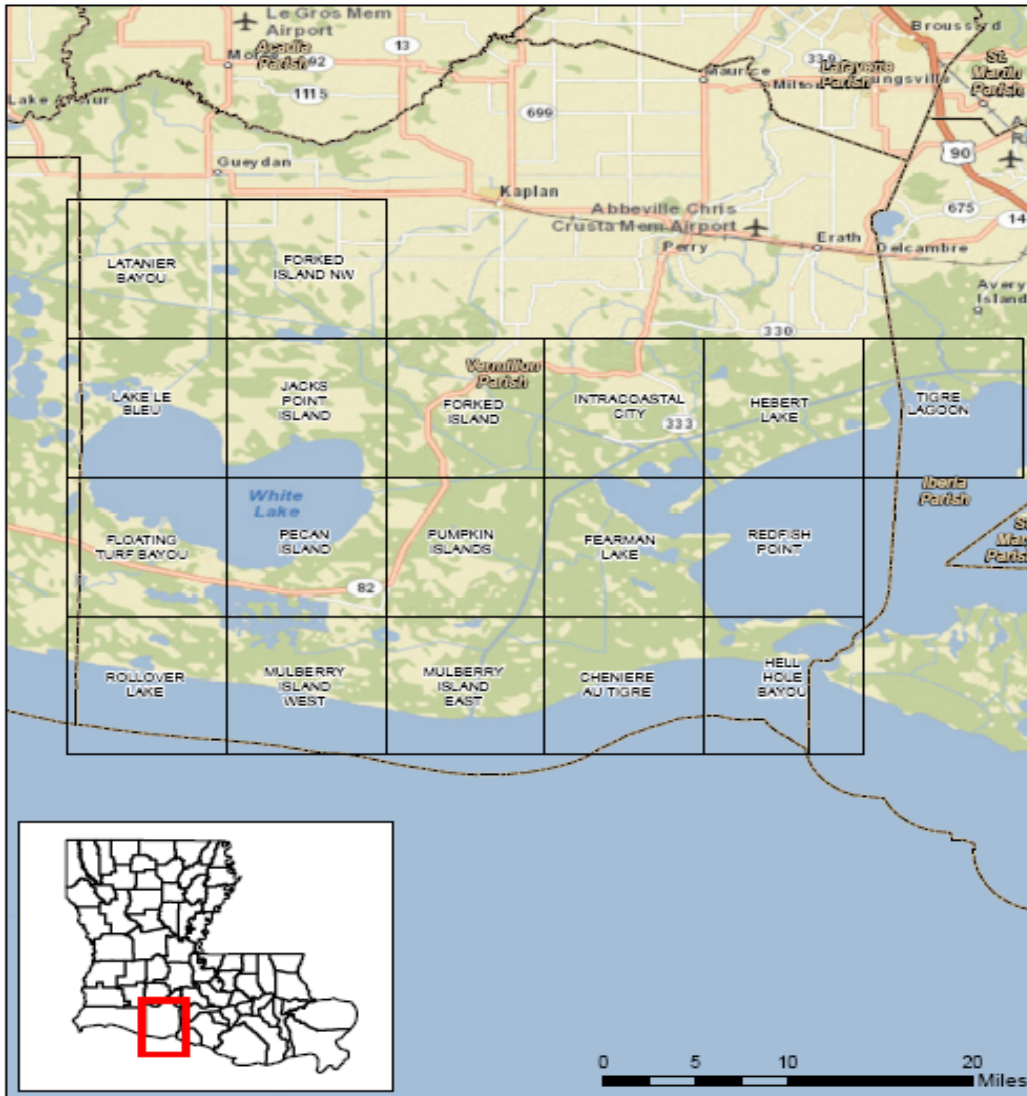
Site:	_____	Page:	_____
Location on page (Chapter, section, paragraph) (e.g. 2.1, paragraph 3):			

Comments:	_____

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2013

Geographic Response Plan Vermilion Parish



Southeast Louisiana
Area Contingency Plan
U. S. Coast Guard
MSU Morgan City
800 David Drive
Morgan City, LA 70380



Vermilion Parish GRP Signature Page

A blue ink signature of David McClellan, written in a cursive style, positioned above a horizontal line.

David McClellan
Captain, US Coast Guard
Commander, MSU Morgan City
Federal On-Scene Coordinator, Morgan City

A blue ink signature of Brian Wynne, written in a cursive style, positioned above a horizontal line.

Brian Wynne
Acting Louisiana Oil Spill Coordinator

A blue ink signature of Nathan Granger, written in a cursive style, positioned above a horizontal line.

Nathan Granger, President
Vermilion Parish Police Jury President

Record of Changes

Date	Change Number	Summary of Changes	Initials of person making changes

Contents

Vermilion Parish GRP Signature Page	2
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Vermilion Parish Geographic Response Plan

Introduction

This Geographic Response Plan (GRP) is an annex to the Southeast Louisiana Area Contingency Plan (SOUTHEAST LOUISIANA ACP) and a key element of both facility and vessel contingency plans. This GRP has two main functions:

From a planning perspective, the GRP provides a description of sensitive biological, cultural, and economic resources that must be addressed to be in compliance with:

- The National Oil and Hazardous Substance Pollution Contingency Plan (NCP, 40 CFR Part 300.210(3)(i)). Area Contingency Plans are required to describe areas of special economic and environmental importance that could be impacted during an oil spill.
- The National Historic Preservation Act of 1966 contains applicable, relevant and appropriate requirements. The GRPs also address sensitive historic and prehistoric resources.

From an operational perspective, the GRP guides responders in the first 24-48 hours of an oil spill by:

- Providing a prioritized list of tactical response strategies to be implemented during the early hours of an oil spill (usually before the formation of the Unified Command);
- Providing detailed information for booming strategies that could be utilized to minimize impacts to predetermined sensitive resources.

Once the Unified Command is formed, additional operational strategies and tactics will be relayed to the field in the form of the ICS-204 work assignment sheets.

Because the GRP is the primary tool used during an initial phase of the response and fairly broad in their scope, they are not intended to minimize impacts to all possible sensitive areas that could be affected by an oil spill. Likewise, the GRPs are not intended to be an exhaustive list of all the tactical strategies that could, or should, be implemented during a spill.

Scope

This Geographic Response Plan (GRP) is intended to help the first responders of an oil discharge or hazardous substance release avoiding the initial confusion that generally accompanies any incident. This document serves as the federal and state on-scene-coordinators “guidance” during an incident in the area covered by this GRP (see Section 2 for area covered). As such it has been approved by the U.S. Coast Guard MSU Morgan City, the Louisiana Oil Spill Coordinator’s Office, and Vermilion Parish. Changes to this document are expected as testing is conducted through drills, site visits, and actual use in an incident. To submit comments, corrections, or suggestions please refer to Appendix B.

The scope of this GRP is to identify sensitive sites to be considered for protection in the first 24 to 48 hours of an incident and the generic response strategy for this site considering unique characteristics, noted hydrology and climatic considerations. This index is not all encompassing as sites not identified in this index may need to be evaluated for protection as an incident progresses.

GRPs only address protection of sensitive public resources. It is the responsibility of private resource owners and/or potentially liable parties to address protection of private resources (such as commercial marina and private water intakes).

Development

This Index has been developed for the Coastal Zone, as defined in the National Contingency Plan (40 CFR Part 300) for Vermilion Parish. It is prepared through the efforts and cooperation of Louisiana State Trustee Agencies, Parish Representatives, and Federal Trustee Agencies, other federal and state agencies, response organizations, and local emergency responders. This Index was developed through workshops involving federal, state, and local stakeholders. Workshop participants identified resources which require protection and developed operational strategies.

Following the workshops, the data gathered was processed and reproduced in the form of maps and matrices which appear in Chapter 3. The maps were generated using ArcGIS, and the tables were created using Microsoft Access.

The first goal of a GRP is to identify resources needing protection; response resources needed; tribal and local response community contacts; and local conditions that may affect response strategies.

Secondly, response strategies were developed based on the sensitive resources noted hydrology and climatic considerations. Individual response strategies identify the appropriate boom implementation.

Draft maps and matrices were sent out for review and consideration of strategy viability.

Verification at local, state, and federal levels was conducted and changes proposed by the participants were included in a semi-final draft, which was offered for final review.

Finally, the final GRP was compiled along with site description, reference maps, and information to support logistical needs.

Guiding Principles of the GRP

Safety and health of the responders always takes precedence over the protection of sensitive environmental resources.

Source control and containment are always a **HIGER** priority over GRP strategy deployments.

The protection strategies in the GRPs have been designed for the use with persistent oils and may not be suitable for other petroleum or hazardous substances.

Environmental conditions (winds, currents, and tides), together with the physical limitations of existing spill response technology, may preclude the effective protection of some areas.

Once a coordinated response has been established during an oil spill incident, booming strategy selection and prioritization are refined and supplemented based on real-time assessments. The UC has the authority to supersede the strategies proposed in the GRPs.

Response personnel may find it necessary to deviate from the exact details provided for deploying a particular strategy. An onsite evaluation of actual conditions is often needed to determine whether a strategy is safe to deploy, whether it will be effective under existing environmental conditions, or effective for the particular type of oil involved. Therefore, field personnel should use their best judgment to modify existing strategies based on real-time conditions and notify command accordingly. Field personnel are also encouraged to notify the command post regarding opportunities for deployment additional strategies that might be used to take advantage of incident-specific conditions.

The GRPs Include the Following Types of Response Strategies:

Collection Booming with On-Water Recovery: Deploying various types of boom to collect oil for mechanical removal using sorbent materials, vacuum trucks, or near shore skimming devices;

Exclusion Booming: Deploying various types of boom to reduce oiling in sensitive areas;

Deflection Booming: Deploying various types of boom to divert oil away from a sensitive area and/or divert oil toward a collection point.

GRPs Do Not Include:

In-Situ Burning: Burning oil on the water; usually requires containment by fire-resistant boom. Chapter 9000, Appendix C for additional policy on in-situ burning use;

Dispersants: Applying chemical agents, usually by aircraft, to aid in breaking up surface slicks and dispersing oil within the water column. See Chapter 9000, Appendix D for policy on dispersant use;

Shoreline Cleanup: Physical removal or chemical treatment of stranded oil. See Chapter 9000, Appendix G for the NOAA Shoreline Countermeasure Manual for Tropical Coastal Environments and Appendix F Oil Spill Best Management Practices for guidance on shoreline cleanup;

Open-Water Mechanical Recovery: Physical removal of oil using boats and/or vessels specifically outfitted with collection and separation equipment.

No Action: Appropriate when weather, sea, or other conditions make deployments unsafe and/or infeasible and when response actions or site access will cause further environmental damage (e.g., wetlands)

Sensitive Resources Addressed by GRPs

The NCP, 40 CFR Part 300.120(3)(i) requires that Area Committees identify and prioritize sensitive areas requiring protection. In the SOUTHEAST LOUISIANA ACP, sensitive areas are broken into three main categories described below.

Environmentally Sensitive Resources

Key natural resource areas are identified using a wide range of data provided by resource trustees, tribes, plan holders, spill response organizations, contingency plan holders, and other interested stakeholders during the process of GRP development and review. The Environmental Sensitivity Index (ESI) maps developed by NOAA are one example of the type of natural resource information available (<http://response.restoration.noaa.gov>). When appropriate, tactical response strategies are designed for implementation during the early hours of an oil spill to reduce impacts to those areas, and trajectory models or other assessment techniques are used to establish initial response priorities.

Historically or Culturally Sensitive Resources

Information on sensitive historic and cultural sites is coordinated through contact with the various tribal governments, State Historic Preservation Office (SHPO), and the United

States Department of the Interior may assist as needed. Due to the sensitive nature of this information, the specifics regarding the location and nature of such sites are not included in the GRP documents. However, in order to ensure that tactical response strategies do not inadvertently harm historical and culturally sensitive sites, historic preservation specialists are consulted to review the GRP documents prior to finalization. The Louisiana SHPO can be contacted at:

Physical Address:
State Historic Preservation Office
Division of Archaeology
Capital Annex Building
1051 North Third Street

Mailing Address:
P.O. Box 44247
Baton Rouge LA, 70804
Phone: (225) 342-8160 (general office)
(225) 219-4598 (Division of Archaeology office)
Fax: (225) 342-4480

Socio-Economically Sensitive Resources

Economically sensitive areas are facilities or locations that rely on a body of water to be economically viable and that could be severely impacted by an oil spill. Economically sensitive areas are broken down into three separate categories: Critical infrastructure, water dependent commercial and recreational areas. Information on economic resources will be gathered for inclusion as an appendix to the GRPs.

Evaluation Criteria for GRPs

Specific strategies for response to spills in the sensitive areas are detailed in the GRPs. Below is a list of some of the biological, cultural, and booming criteria used to determine whether it is appropriate to develop and maintain GRP strategies at specific locations. These criteria are not intended to be exhaustive, or ranked in order of priority, they are meant to help frame the evaluation of GRP strategies.

Key Criteria for Biological Sites, Species, and Habitats of Concern

What is the expected recovery time for habitats of fish and wildlife resources?
What is the residence time of the oil?

Substrate-

- What is the exposure risk?
- What is the likelihood that a habitat or species will be exposed to direct contact with surface oil or to dispersed/dissolved oil in the water column?
- Given the substrate, is clean-up feasible?

Habitat quantity, quality, and pattern-

- Is the impacted habitat considered scarce at local, regional, or statewide scales?
- Is the size of the impacted habitat significant compared to other sites in the region?
- Is the species diversity or endemism high? Is this true year-round or is it seasonal?
- Is abundance of fish and/or wildlife high? Is this true year-round or is it seasonal?
- What life stages of organisms are present?
- Is the habitat important to threatened or endangered species?
- What is the status of the habitat's integrity (i.e., is the area undeveloped or highly altered?)
- Does the habitat have a special designation or status (i.e., Marine Protected Area, biological research area, restoration site, etc.)?
- Are the habitat and/or its associated fish and wildlife resources especially susceptible to injury by oil?

Key Criteria for Archeological and Cultural Sites of Concern

Deployment- Does the act of deploying the GRP strategy threaten the archeological site (anchoring the boom, parking vehicles, etc.)

Purpose- Will implementing the GRP strategy type (collection, diversion, deflection) negatively impact the site?

Review- If either of the above is possible, then a review of the site records is necessary to determine the exact location and sensitivity of the site. If the site records are old or insufficient, then a field visit is necessary.

Significant developments- Are there significant developments that may make any concern about the impacts irrelevant (housing developments etc.)?

Additional criteria for archaeological sites without existing GRP strategies

- Impacts- Does the site extend below the high tide line?
- Vulnerability- Will it be damaged or destroyed if oil were to hit the area (or by the placement of response equipment in the area, e.g., vacuum trucks, etc.)?
- Integrity- Has the site been disturbed yet, or is it still intact?
- Historic Importance- Is the site nominated for, or already on, the National Register of Historic Places or the State equivalent?
- Tribal Importance- Does the site hold special tribal importance?
- Parish Importance- Does the site hold special Parish importance?
- Feasibility- Is booming the site feasible?

Key Criteria for Socio-Economic Sites of Concern

Strictly economic resources are designated as the third priority for dedication of oil spill response resources, following human health and safety and environmental resources. The designation of economic resources is highly dependent upon the priorities of the local government. Each GRP contains detailed information of economic sites in each Parish or Geographical Response Area. This information includes geographic locations of resources, a brief description of the resource at risk, contact names and numbers, and the priority response ranking.

Key Criteria for the Use of Boom

Effectiveness- Is booming the most effective strategy for reducing oil spill impacts? Would other alternatives such as a phone call to an operator, shutting off a water intake, or closing a tidal gate be as effective?

Safety- Determine if safety of human responder will be put at risk for limited likelihood of strategy success.

Strategy- Determine what type of booming strategy would be the most effective at reducing oil impacts to the resource under prevailing conditions (collection, deflection, or exclusion).

Evaluation- Evaluate the site for advantageous characteristics based on:

- Anchoring substrate. Does the substrate allow responders to easily anchor the boom?
- Accessibility. Can the site be easily accessed by vessel or vehicles?
- Time to arrive on scene. How long will it take to get to the site?
- Potential for oiling. Is the site located near shipping activity or fueling operations?
- Beach substrate. Used Environmental Sensitivity Index (ESI) or Shore-Zone classification to determine vulnerability to oiling and likely oil longevity based on the shoreline type.
- Type and quantity of boom. How many sections of boom and what size anchors will be required for deployment? What is the anchoring depth? What type of boom tending will be required? Will this tending be complicated by the amount of time it takes to arrive at the site or the difficulty of access? Is the amount of boom required reasonable (< 1000 ft)?
- Prevailing weather- especially wind and waves. Is a booming strategy realistic for prevailing conditions?
- Tidal influence. At extreme lows will there be nothing but mud flats (very difficult to tend boom when it is stuck in the mud) or at extreme highs will the entire face of a coastal marsh be underwater (thus exposing the entire perimeter to oil)?
- Influence of currents. What velocities can be expected?
- Feasibility. Depends on: Boom size, boom length, the number and size of anchors, the capability of the recruited workboats (to tow boom, set and recover anchors, shelter boat crews, carry boom and associated equipment), the experience of the boat crew, and the effectiveness of the anchoring system (both on shore and in water).

Prioritization

Through the priority evaluation process, an area is broken down by type (human health and safety, environmental, economic and cultural) and sensitivity (high, medium, low). This evaluation process focuses on the sensitivities of areas and not jurisdictional boundaries. Once all areas have been evaluated and broken down, three levels of priority are generally all that is needed for pre-spill planning:

A – Protect First

B – Protect After A Areas

C – Protect After B Areas

The following prioritizations were determined by the Geographic Response Plan subcommittee:

Priority A

- Public drinking water intakes
- Industrial water intakes with public health and safety impacts (e.g. public utility intake, supported by state managed early warning network on MISS RIVER)
- Tidal Inlets – Primary Tidal Inlets that are protectable
- Secondary inlets inside bays that connect to extensive sensitive areas
- Breaches, wash-overs and other low areas where oil can enter sensitive habitats
- Exceptional/Highly sensitive wetlands with high biodiversity site (e.g. NWR, State refuges)
 - Important Bird Areas
 - Bird nesting islands (e.g. Raccoon Island, Queen Bess Island, Brush Island)
 - Other bird nesting concentrations including T&E species
 - Seasonal bird concentration areas onshore (e.g. South Pass)
 - Freshwater Diversion (Manmade and Natural)

Priority B

- Exceptional Oyster beds in the intertidal
- Seagrass Beds in less than 1 meter of water
- High use recreational sites
- Important Industrial Areas (e.g. fishing ports, marinas, industrial corridors)
- Other water intakes not specified in Priority A
- Cultural/Historical sites of concern (e.g. contact SHPO/Tribes)

Priority C

- Small tidal channels and canal openings
- Sheltered tidal flats
- Seagrass beds in greater than 1 meter of water
- Aquaculture sites and oyster lease areas
- Wetland restoration areas
- Other industrial areas
- Areas identified by local authorities not previously noted in Priority A or B

The following areas were not included due to the initial protection difficulty:

- Open gulf beaches
- Exposed wetland shorelines (exposed to waves and currents) (as described in Appendix G)
- Exposed rip-rap

Strategy Selection

Booming strategy recommendations were developed using local knowledge, scientific data, and known operational uses and limitation of common oil spill response equipment. Utilizing publications, such as the Exxon Mobil Oil Spill Response Manual and the National Oceanic Atmospheric Administration's Characteristic Coastal Habitats Choosing Spill Response Alternatives) a quick reference job-aid was developed to assist with the selection of an appropriate site given the noted hydrology and climatic considerations. This process applies a consistent and standard analysis of each site. All water body openings, cuts, and lengths between two points of land greater than one thousand feet (1,000 ft) received a strategy of Deferred Action due to limited resources available during initial response. All sites related to infrastructure or private resources received a strategy of Notification to Site Manager. However, these sites are considered sensitive and should be given due consideration for more defensive response actions by the Incident Command.

GRP Strategy Selection Job-Aid

Water Body Type	Current/Wave Action	Shoreline	Strategy
Lake or Pond		ESI 1-6	Containment booming/collection point
		ESI 7-10	Exclusion booming
Rivers or Large Streams 1.6 feet (0.5) deep	Currents <1 knot	ESI 1-6	Containment booming/collection point
		ESI 7-10	Exclusion booming
	Currents 1-2 knots	ESI 1-6	Diversion booming to collection point
		ESI 7-10	Deflection booming
	Currents >2 knots	ESI 1-6	Multi-layer diversion booming to collection point
		ESI 7-10	Multi-layer deflection booming
Small streams <33 ft wide (10m) and 1.6 ft (0.5 m) deep	Currents <1 knot	ESI 1-6	Containment booming/collection point
		ESI 7-10	Exclusion booming
	Currents 1-2 knots	ESI 1-6	Diversion booming to collection point
		ESI 7-10	Deflection booming
	Currents >2 knots	ESI 1-6	Multi-layer diversion booming to collection point
		ESI 7-10	Multi-layer deflection booming
Shallow Rivers or streams	Currents 0-2 knots	ESI 1-6	Containment booming/collection point
		ESI 7-10	Diversion booming to collection point
Straight Coastline with Sensitive Areas	Breaking waves <1.5 ft (0.5m)	ESI 1-10	Diversion boom up current of sensitive area
	Breaking waves > 1.5 ft		Deferred Action
Entrance to Bays, Harbors, Lagoons, and Estuaries	Breaking waves <1.5 ft (0.5m) and currents < 1 kt (0.5 m/s)	ESI 1-10	Exclusion booming
	Breaking waves <1.5 ft (0.5m) and currents >1 kt (0.5 m/s)	ESI 1-6	Diversion booming to collection point
		ESI 7-10	Deflection booming
	Breaking waves >1.5 ft (0.5m)	ESI 1-10	Deferred Action
Narrow Channel/ Narrow Tidal Channel	Current <1 kt (0.5 m/s)	ESI 1-10	Exclusion Booming
	Current >1 kt (0.5 m/s)	ESI 1-6	Diversion booming with collection point
		ESI 7-10	Deflection booming
Open Water	Breaking Waves < 1.5 ft	N/A	Exclusion Booming
	Breaking waves >1.5 ft		Deferred Action

NOTE: All openings, cuts, and lengths between two points of land greater than one thousand feet (1,000 ft) will receive a strategy of **Deferred Action** due to limited resources for initial response.

All sites related to infrastructure or private resources will receive a strategy of **Notification to Site Manager**.

Southeast Louisiana Area Contingency Plan

Sensitive Site Index

The following compilation of sensitive sites is a result of the hard work of Morgan City Area Stakeholders. The sites contained within this report will play a significant role in the development of the Geographic Response Plans, a geographic based response plan to oil and hazardous material releases.

Any modifications or additions to this set of data is welcomed and encouraged. Please contact the USCG MSU Morgan City Contingency Planning Specialist to make any submissions.

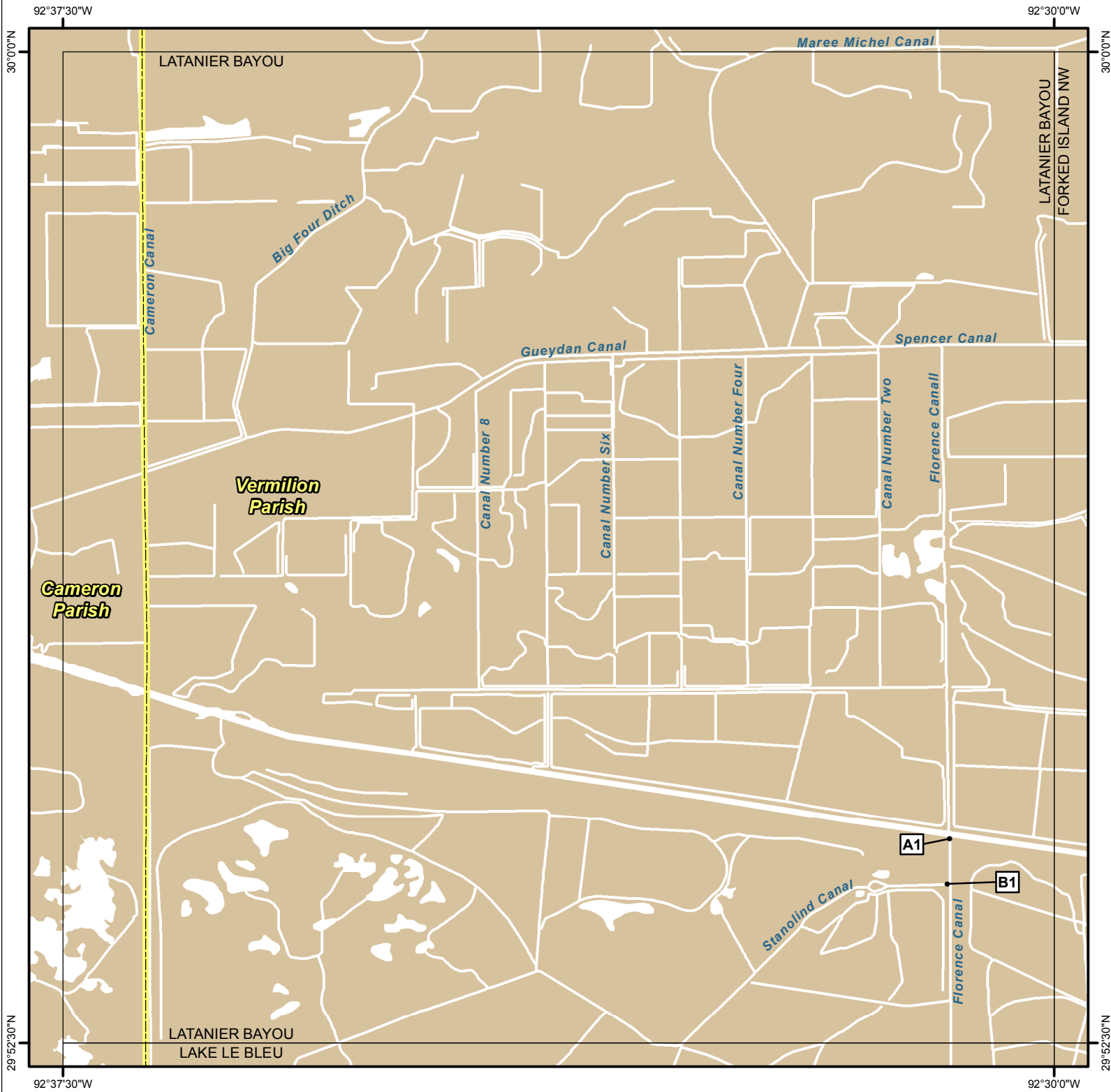


Southeast Louisiana ACP

Vermillion Parish Index Map

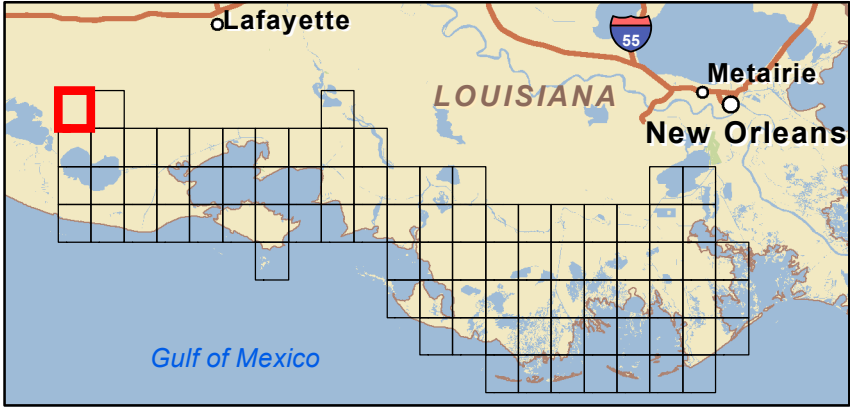
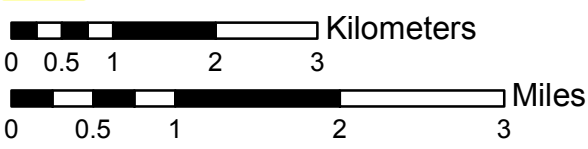


LATANIER BAYOU QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: A1		Location Information	
Name: Canal at Intracoastal Waterway		Parish:	Vermilion
		Quad Name:	Latanier Bayou
Priority: A		Quad Number:	2909204
Site Alias: N/A		Mile Marker:	184.4
		Managed (Y/N)?:	Y - Wildlife Area
Site Description: State Property part of White Lake Wetlands Conservation Area		Latitude:	29° 54' 02.623" N
		Longitude:	92° 30' 47.487" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive habitat and reintroduction site for whooping cranes	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

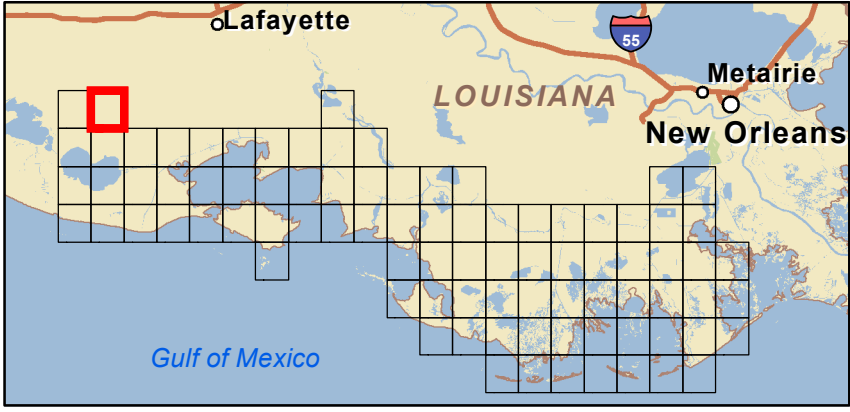
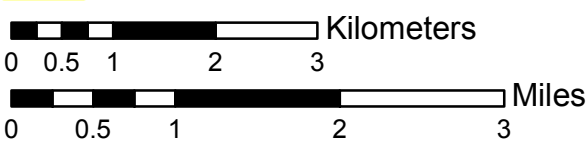
Site Information: B1		Location Information	
Name: White Lake Wetlands Conservation		Parish:	Vermilion
		Quad Name:	Latanier Bayou
Priority: B		Quad Number:	2909204
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: State Property part of White Lake Wetlands Conservation Area		Latitude:	29° 53' 42.086" N
		Longitude:	92° 30' 48.395" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive habitat and reintroduction site for whooping cranes	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

FORKED ISLAND NW QUAD



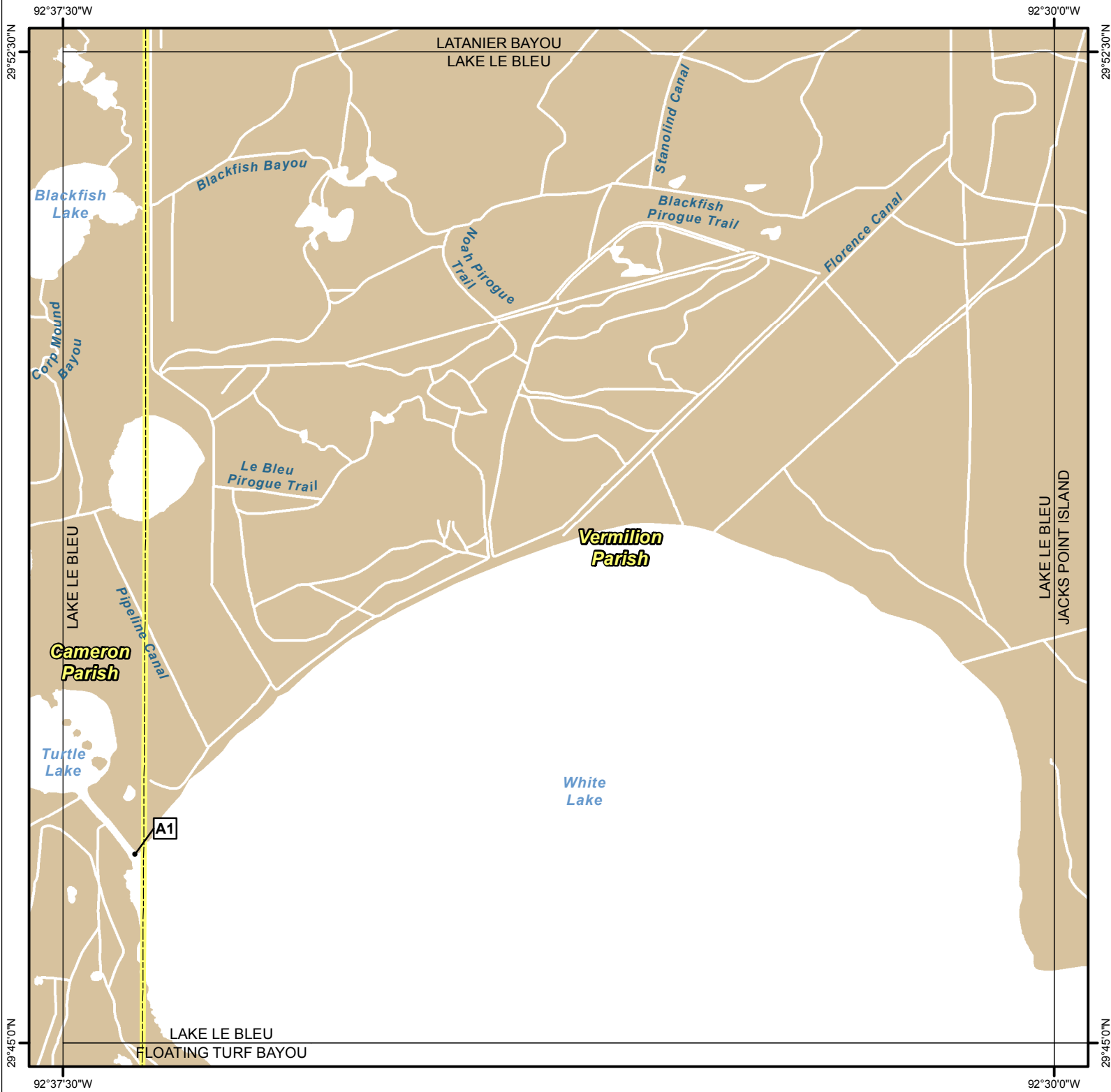
Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



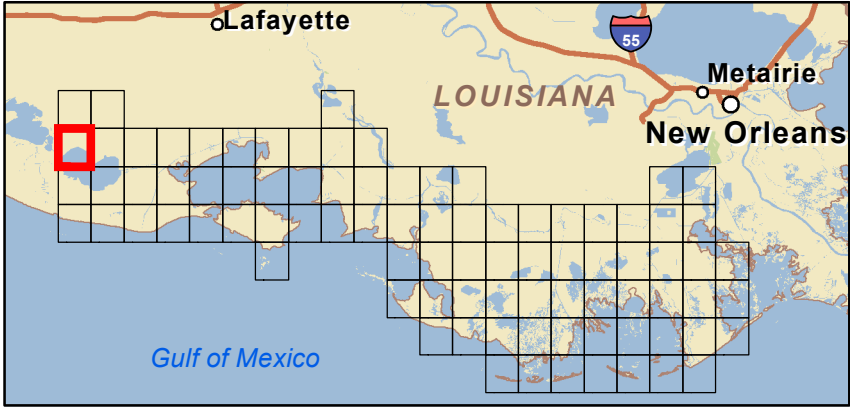
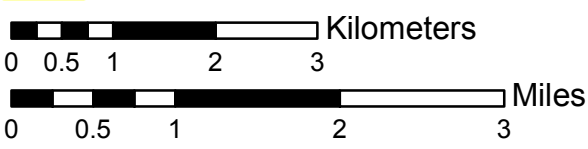
Site Information: A1		Location Information	
Name: Canal at Intracoastal Waterway		Parish:	Vermilion
		Quad Name:	Forked Island NW
Priority: A		Quad Number:	2909205
Site Alias: N/A		Mile Marker:	178.6
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 53' 10.145" N
		Longitude:	92° 24' 50.923" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

LAKE LE BLEU QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: A1		Location Information	
Name: Mouth of Turtle Lake / White Lake Inlet	Parish:	Vermilion	
	Quad Name:	Lake Le Bleu	
Priority: A	Quad Number:	2909212	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 46' 25.552" N	
Site Description: Sensitive Habitat	Longitude:	92° 36' 57.455" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments:	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

JACKS POINT ISLAND QUAD

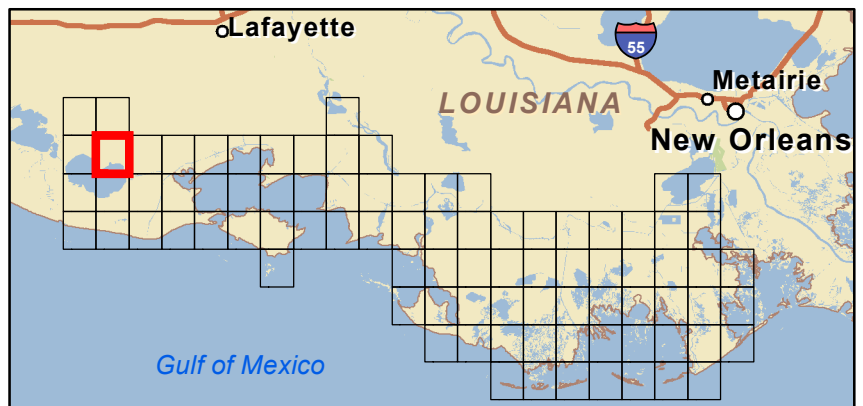


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles

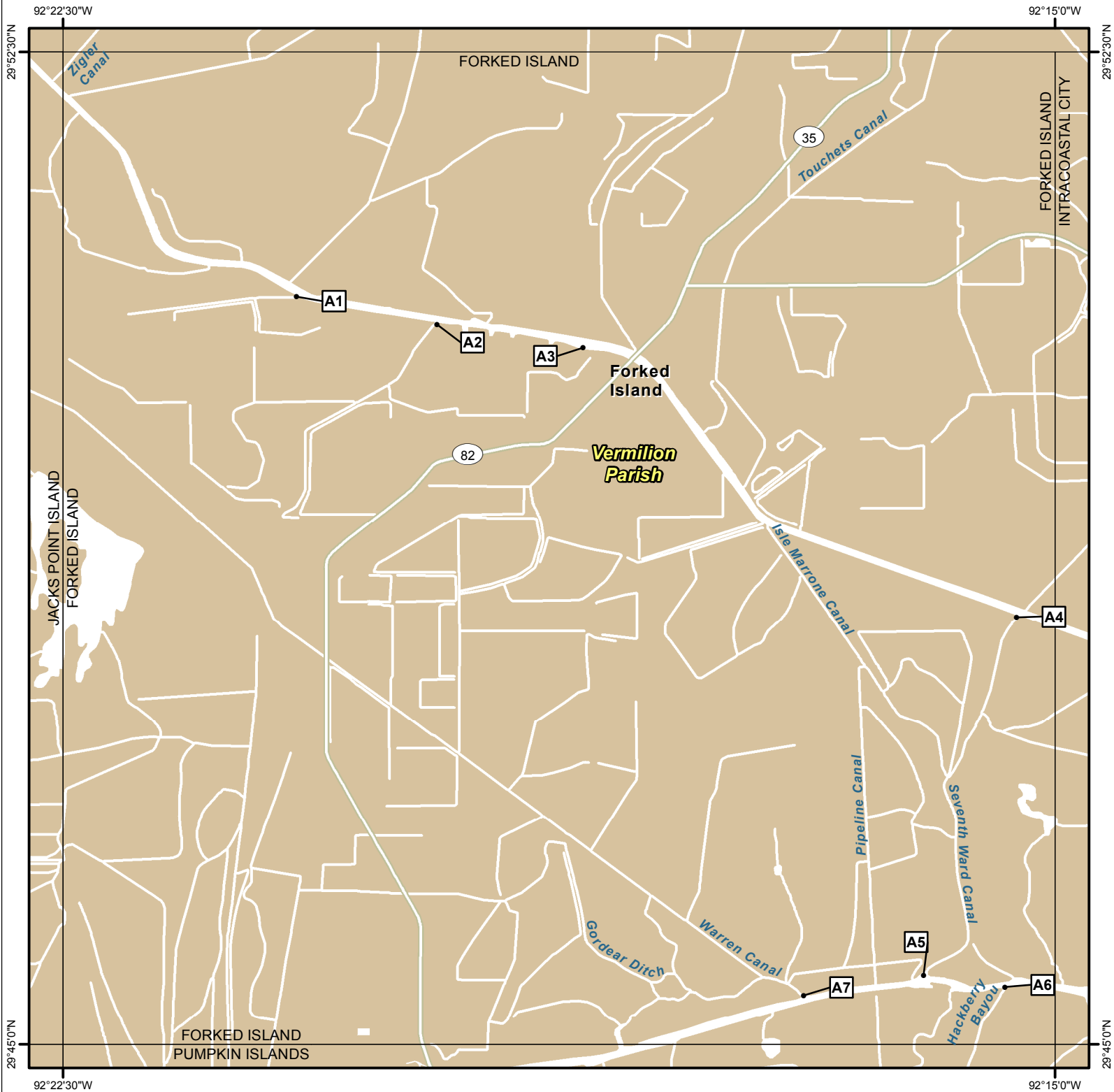


Site Information: A1		Location Information	
Name: Canal (north)		Parish:	Vermilion
		Quad Name:	Jacks Point Island
Priority: A		Quad Number:	2909213
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: State Property part of White Lake Wetlands Conservation Area		Latitude:	29° 47' 15.948" N
		Longitude:	92° 26' 56.627" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive habitat and reintroduction site for whooping cranes	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Canal (south)	Parish: Vermilion	Quad Name: Jacks Point Island	
Priority: A	Quad Number: 2909213		
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?: N		
Site Description: Sensitive Habitat	Latitude: 29° 46' 38.960" N		
	Longitude: 92° 23' 46.453" W		
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: C1		Location Information	
Name: Clear Lake Inlet		Parish:	Vermilion
		Quad Name:	Jacks Point Island
Priority: C		Quad Number:	2909213
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
		Latitude:	29° 47' 11.415" N
Site Description: State Property part of White Lake Wetlands Conservation Area		Longitude:	92° 26' 30.696" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive habitat and reintroduction site for whooping cranes	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DNR/CPRA		State Submitter: DNR/CPRA	
Submit Date: 2013.04.16		State Comments:	

FORKED ISLAND QUAD

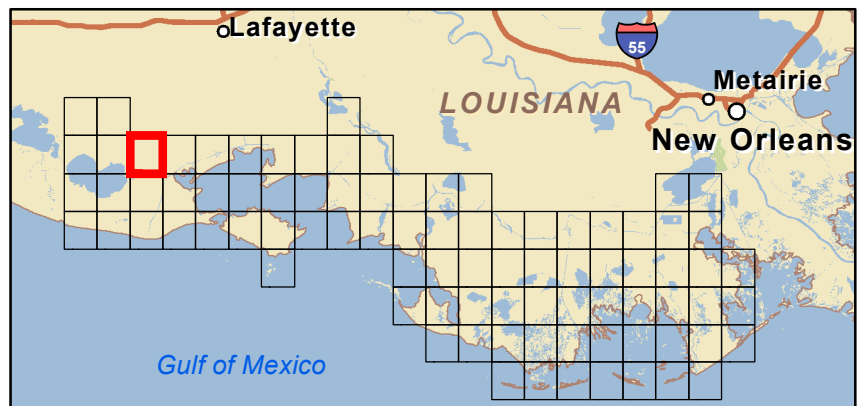


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Canal at Intracoastal Waterway (west)	Parish:	Vermilion	
	Quad Name:	Forked Island	
Priority: A	Quad Number:	2909214	
Site Alias: N/A	Mile Marker:	172.8	
	Managed (Y/N)?:	N	
	Latitude:	29° 50' 39.051" N	
Site Description: Sensitive Habitat	Longitude:	92° 20' 44.132" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Bayou at Intracoastal Waterway (west)	Parish:	Vermilion	
	Quad Name:	Forked Island	
Priority: A	Quad Number:	2909214	
Site Alias: N/A	Mile Marker:	171.7	
	Managed (Y/N)?:	N	
	Latitude:	29° 50' 26.425" N	
Site Description: Sensitive Habitat	Longitude:	92° 19' 40.428" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Canal at Intracoastal Waterway (east)	Parish:	Vermilion	
	Quad Name:	Forked Island	
Priority: A	Quad Number:	2909214	
Site Alias: N/A	Mile Marker:	170.7	
	Managed (Y/N)?:	N	
	Latitude:	29° 50' 16.004" N	
Site Description: Sensitive Habitat	Longitude:	92° 18' 34.110" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Steve Miller and Steve Lorio		State Submitter: DEQ-Steve Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A4		Location Information	
Name: Bayou at Intracoastal Waterway (east)	Parish:	Vermilion	
	Quad Name:	Forked Island	
Priority: A	Quad Number:	2909214	
Site Alias: N/A	Mile Marker:	166.5	
	Managed (Y/N)?:	N	
	Latitude:	29° 48' 13.472" N	
Site Description: Sensitive Habitat	Longitude:	92° 15' 17.423" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments:	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A5		Location Information	
Name: Bayou at Schooner Bayou		Parish:	Vermilion
		Quad Name:	Forked Island
Priority: A		Quad Number:	2909214
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 45' 31.207" N
		Longitude:	92° 15' 59.703" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A6		Location Information	
Name: Bayou off Schooner Bayou	Parish: Vermilion	Quad Name: Forked Island	
Priority: A	Quad Number: 2909214		
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 45' 25.986" N		
Site Description: Sensitive Habitat	Longitude: 92° 15' 22.619" W		
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A7		Location Information	
Name: Canal at Schooner Bayou	Parish: Vermilion		
	Quad Name: Forked Island		
Priority: A	Quad Number: 2909214		
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 45' 21.989" N		
Site Description: Sensitive Habitat	Longitude: 92° 16' 53.898" W		
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

INTRACOASTAL CITY QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

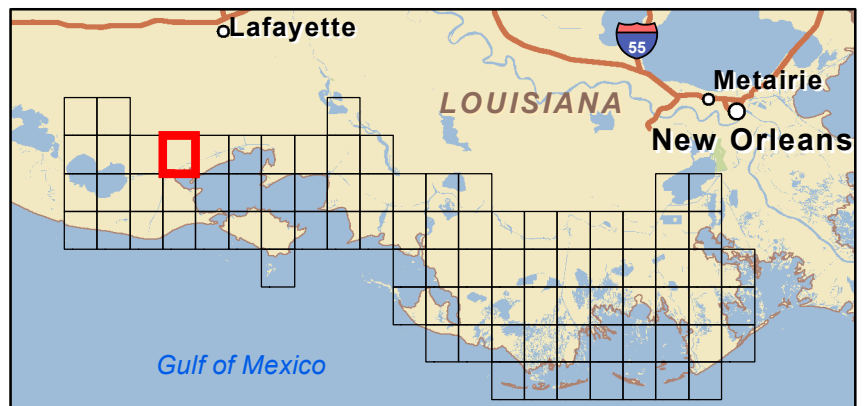


Kilometers

0 0.5 1 2 3

Miles

0 0.5 1 2 3



Site Information: A1		Location Information	
Name: 4 Mile Canal	Parish:	Vermilion	
	Quad Name:	Intracoastal City	
Priority: A	Quad Number:	2909215	
Site Alias: Intracoastal City	Mile Marker:	159.0	
	Managed (Y/N)?:	N	
	Latitude:	29° 46' 59.256" N	
Site Description: Primary Inlet	Longitude:	92° 08' 26.607" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		High Economic Values	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Rebecca Broussard		State Submitter: DEQ/Vermilion Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies Concur with point	

Site Information: A2		Location Information	
Name: Bayous at Intracoastal Waterway (north)	Parish:	Vermilion	
	Quad Name:	Intracoastal City	
Priority: A	Quad Number:	2909215	
Site Alias: N/A	Mile Marker:	162.6, 162.7	
	Managed (Y/N)?:	N	
	Latitude:	29° 46' 53.862" N	
Site Description: Sensitive Habitat	Longitude:	92° 11' 48.479" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Bayous at Intracoastal Waterway (south)	Parish:	Vermilion	
	Quad Name:	Intracoastal City	
Priority: A	Quad Number:	2909215	
Site Alias: N/A	Mile Marker:	162.6, 162.7	
	Managed (Y/N)?:	N	
	Latitude:	29° 46' 49.711" N	
	Longitude:	92° 11' 38.078" W	
Site Description: Sensitive Habitat			
Response Considerations			
Site Strategy: Exclusion Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments: Sensitive Habitat		
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio	State Submitter: DEQ-Shane Miller and Steve Lorio		
Submit Date: 2013.04.16	State Comments: Sensitive Habitat		

Site Information: A4		Location Information	
Name: Old Vermillion / Bayou at Intracoastal Waterway		Parish:	Vermilion
		Quad Name:	Intracoastal City
Priority: A		Quad Number:	2909215
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Inlet To Marsh From Bay		Latitude:	29° 46' 44.196" N
		Longitude:	92° 09' 35.073" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Inlet To Marsh From Bay	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A5		Location Information	
Name: Canal at Freshwater Bayou	Parish:	Vermilion	
	Quad Name:	Intracoastal City	
Priority: A	Quad Number:	2909215	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 46' 18.817" N	
Site Description: Sensitive Habitat	Longitude:	92° 10' 53.534" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A6		Location Information	
Name: Bayous at Freshwater Bayou (north)	Parish:	Vermilion	
	Quad Name:	Intracoastal City	
Priority: A	Quad Number:	2909215	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 45' 53.411" N	
Site Description: Sensitive Habitat	Longitude:	92° 11' 02.783" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A7		Location Information	
Name: Bayous at Freshwater Bayou (south)	Parish:	Vermilion	
	Quad Name:	Intracoastal City	
Priority: A	Quad Number:	2909215	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 45' 48.953" N	
Site Description: Sensitive Habitat	Longitude:	92° 11' 05.816" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A8		Location Information	
Name: Canals off Freshwater Bayou (north)	Parish:	Vermilion	
	Quad Name:	Intracoastal City	
Priority: A	Quad Number:	2909215	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 45' 37.863" N	
Site Description: Sensitive Habitat	Longitude:	92° 11' 49.339" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A9		Location Information	
Name: Canals off Freshwater Bayou (south)	Parish:	Vermilion	
	Quad Name:	Intracoastal City	
Priority: A	Quad Number:	2909215	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 45' 32.359" N	
Site Description: Sensitive Habitat	Longitude:	92° 11' 42.186" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A10		Location Information	
Name: Bayous at Freshwater Bayou		Parish:	Vermilion
		Quad Name:	Intracoastal City
Priority: A		Quad Number:	2909215
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 45' 13.855" N
		Longitude:	92° 12' 28.726" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

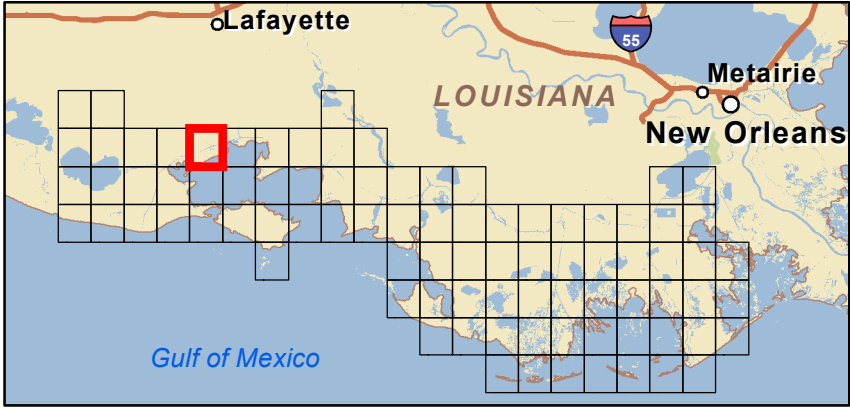
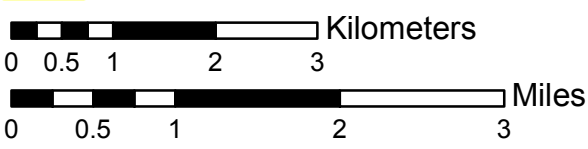
Site Information: A11		Location Information	
Name: Little Vermilion Bay		Parish:	Vermilion
		Quad Name:	Intracoastal City
Priority: A		Quad Number:	2909215
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: Primary Inlet		Latitude:	29° 45' 07.068" N
		Longitude:	92° 12' 17.194" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 1500-2000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Paul Rainey Refuge	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Rebecca Broussard		State Submitter: DEQ/Vermilion Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies Concur with point	

HEBERT LAKE QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: A1		Location Information	
Name: Multiple Canals	Parish: Vermilion	Quad Name: Hebert Lake	
Priority: A	Quad Number: 2909216		
Site Alias: N/A	Mile Marker: 152.1		
	Managed (Y/N)?: N		
Site Description: Sensitive Habitat	Latitude: 29° 49' 02.668" N		
	Longitude: 92° 01' 52.086" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments:	

Site Information: A2		Location Information	
Name: Multiple Canals off Intracoastal Waterway (north)	Parish:	Vermilion	
	Quad Name:	Hebert Lake	
Priority: A	Quad Number:	2909216	
Site Alias: N/A	Mile Marker:	153.2, 153.7	
	Managed (Y/N)?:	N	
Site Description: Sensitive Habitat	Latitude:	29° 48' 43.150" N	
	Longitude:	92° 02' 55.244" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments:	

Site Information: A3		Location Information	
Name: Multiple Canals off Intracoastal Waterway (south)	Parish:	Vermilion	
	Quad Name:	Hebert Lake	
Priority: A	Quad Number:	2909216	
Site Alias: N/A	Mile Marker:	153.2, 153.7	
	Managed (Y/N)?:	N	
	Latitude:	29° 48' 34.678" N	
Site Description: Sensitive Habitat	Longitude:	92° 03' 21.920" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments:	

Site Information: A4		Location Information	
Name: Canal off Intracoastal Waterway (north)	Parish:	Vermilion	
	Quad Name:	Hebert Lake	
Priority: A	Quad Number:	2909216	
Site Alias: N/A	Mile Marker:	154.2	
	Managed (Y/N)?:	N	
	Latitude:	29° 48' 20.125" N	
Site Description: Sensitive Habitat	Longitude:	92° 04' 05.990" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A5		Location Information	
Name: Canal off Intracoastal Waterway (central)	Parish:	Vermilion	
	Quad Name:	Hebert Lake	
Priority: A	Quad Number:	2909216	
Site Alias: N/A	Mile Marker:	156.5	
	Managed (Y/N)?:	N	
	Latitude:	29° 48' 03.081" N	
Site Description: Sensitive Habitat	Longitude:	92° 05' 00.608" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A6		Location Information	
Name: Canal off Intracoastal Waterway (south)	Parish:	Vermilion	
	Quad Name:	Hebert Lake	
Priority: A	Quad Number:	2909216	
Site Alias: N/A	Mile Marker:	157.1	
	Managed (Y/N)?:	N	
	Latitude:	29° 47' 33.132" N	
Site Description: Sensitive Habitat	Longitude:	92° 06' 31.309" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

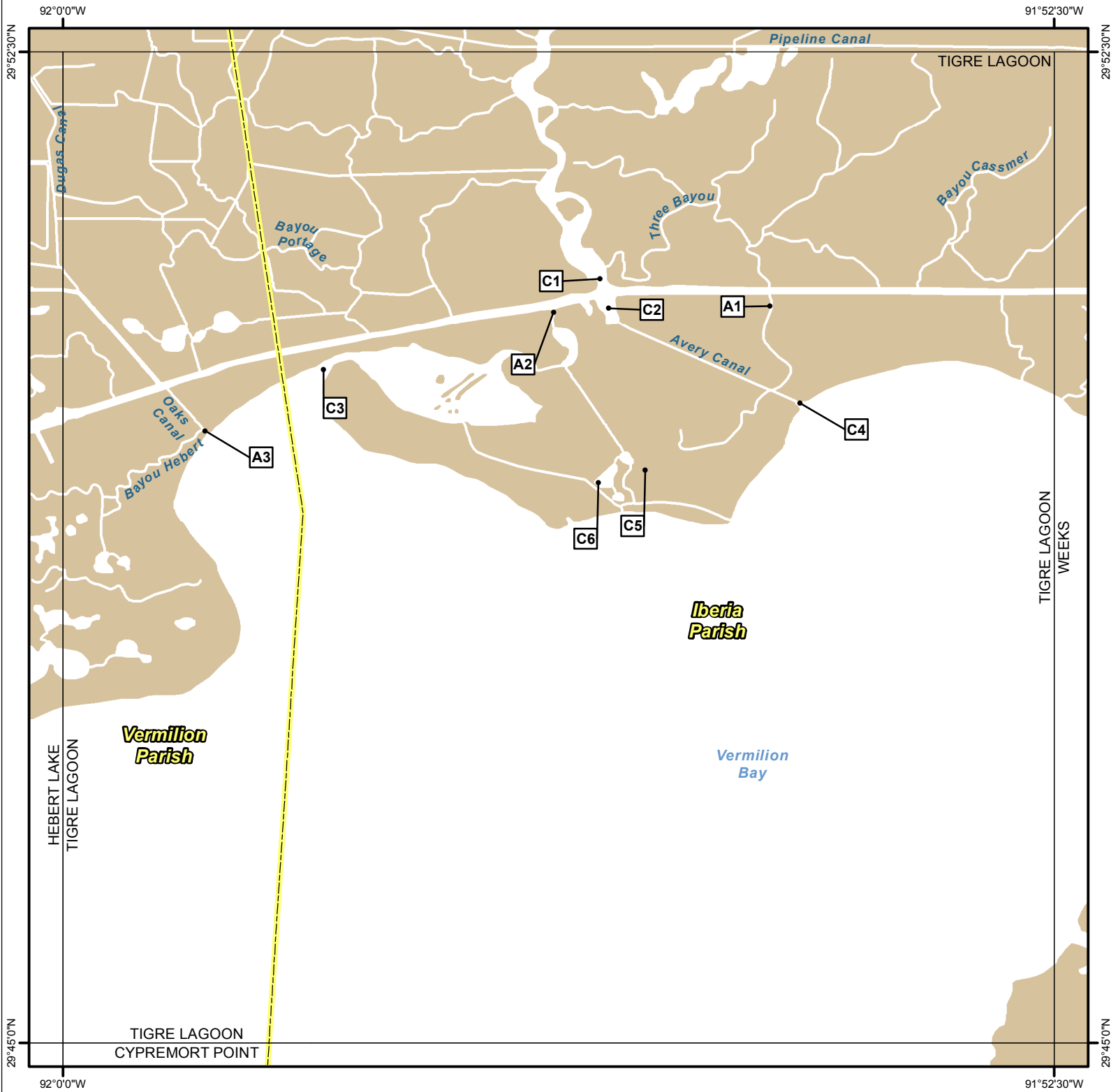
Site Information: A7		Location Information	
Name: Canal off Vermilion Bay (north)		Parish:	Vermilion
		Quad Name:	Hebert Lake
Priority: A		Quad Number:	2909216
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 46' 30.433" N
		Longitude:	92° 03' 06.969" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A8		Location Information	
Name: Canal off Vermilion Bay (south)		Parish:	Vermilion
		Quad Name:	Hebert Lake
Priority:	A	Quad Number:	2909216
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 45' 41.590" N
		Longitude:	92° 04' 44.649" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A9		Location Information	
Name: Long Lake / Entrance to Lake Bebe		Parish:	Vermilion
		Quad Name:	Hebert Lake
Priority:	A	Quad Number:	2909216
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?:	N
Site Description: Sensitive habitat		Latitude:	29° 45' 29.987" N
		Longitude:	92° 07' 15.205" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Inlet To Marsh From Bay	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish/LDEQ	
Submit Date: 2013.04.16		State Comments:	

Site Information: C1		Location Information	
Name: Hog Lake Inlet		Parish:	Vermilion
		Quad Name:	Hebert Lake
Priority:	C	Quad Number:	2909216
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Inlet		Latitude:	29° 46' 56.064" N
		Longitude:	92° 02' 06.321" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DNR/CPRA		State Submitter: DNR/CPRA	
Submit Date: 2013.04.16		State Comments:	

TIGRE LAGOON QUAD

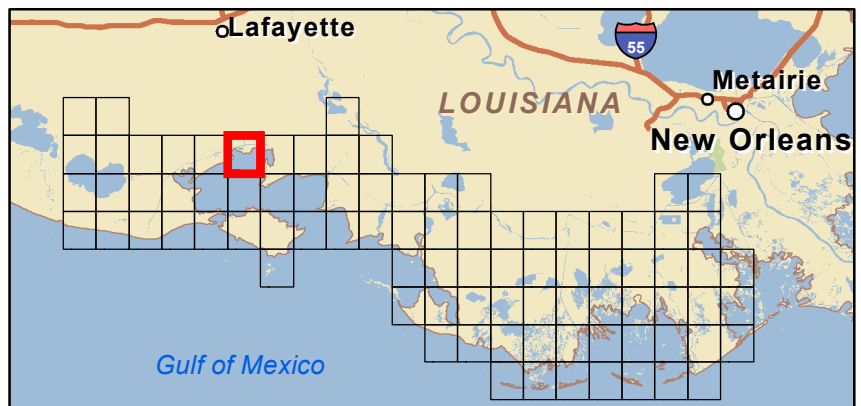


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Bayou at Intracoastal Waterway	Parish:	Iberia	
	Quad Name:	Tigre Lagoon	
Priority: A	Quad Number:	2909109	
Site Alias: N/A	Mile Marker:	144.5	
	Managed (Y/N)?:	N	
	Latitude:	29° 50' 34.513" N	
	Longitude:	91° 54' 38.915" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Mouth of Tigre Lagoon at Intracoastal Waterway	Parish:	Iberia	
	Quad Name:	Tigre Lagoon	
Priority: A	Quad Number:	2909109	
Site Alias: N/A	Mile Marker:	146.1	
	Managed (Y/N)?:	N	
	Latitude:	29° 50' 31.849" N	
Site Description: Sensitive Habitat	Longitude:	91° 56' 17.218" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments:	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Oaks Canal / Herbert Bayou		Parish:	Vermilion
		Quad Name:	Tigre Lagoon
Priority:	A	Quad Number:	2909109
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 49' 37.968" N
		Longitude:	91° 58' 55.616" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Inlet To Marsh From Bay	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish/LDEQ	
Submit Date: 2013.04.16		State Comments:	

Site Information: C1		Location Information	
Name: Entrance to Bayou Petite Anse	Parish:	Iberia	
	Quad Name:	Tigre Lagoon	
Priority: C	Quad Number:	2909109	
Site Alias: State Recreation Area (Submitted by State)	Mile Marker:		
Site Description: Marshland and fisheries	Managed (Y/N)?:	N	
	Latitude:	29° 50' 46.937" N	
	Longitude:	91° 55' 56.180" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marshland and fisheries	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/St. Mary Parish/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Point is in question by State	

Site Information: C2		Location Information	
Name: Intersection of Avery Canal and Intracoastal Waterway	Parish:	Iberia	
	Quad Name:	Tigre Lagoon	
Priority: C	Quad Number:	2909109	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Site Description: Marshland and fisheries	Latitude:	29° 50' 33.490" N
	Longitude:	91° 55' 52.217" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marshland and fisheries	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

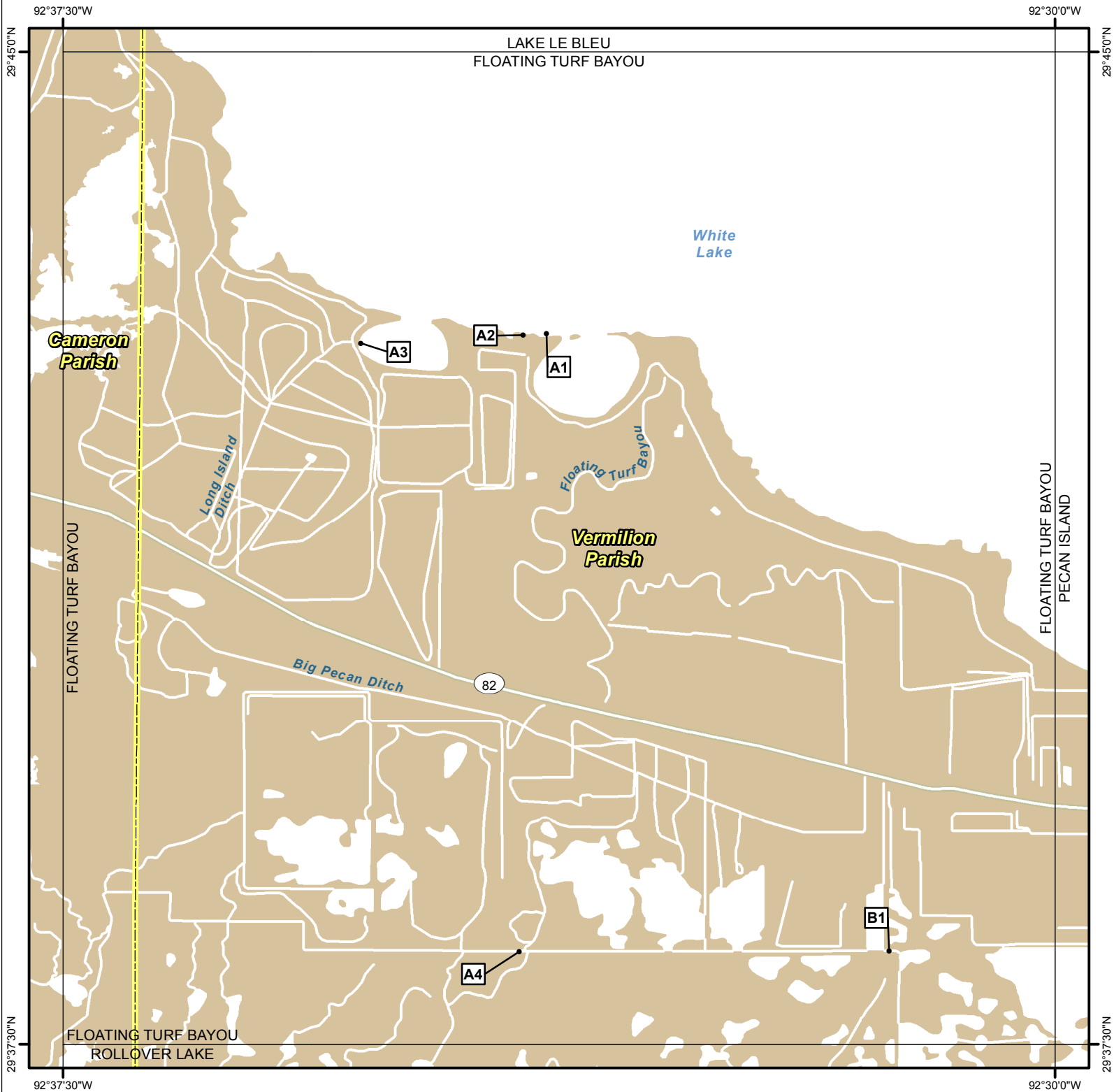
Site Information: C3		Location Information	
Name: Eastern Entrance/ Tigre Lagoon	Parish: Iberia	Quad Name: Tigre Lagoon	
Priority: C	Quad Number: 2909109		
Site Alias: None	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 50' 06.045" N		
Site Description: Entrance from Vermillion bay	Longitude: 91° 58' 01.697" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marshland and fisheries	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C4		Location Information	
Name: Western Entrance/Tigre Lagoon	Parish:	Iberia	
	Quad Name:	Tigre Lagoon	
Priority: C	Quad Number:	2909109	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 49' 50.619" N	
Site Description: Entrance from Vermillion bay	Longitude:	91° 54' 25.385" W	
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marshland and fisheries	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C5		Location Information	
Name: Southwestern Entrance/Tigre Lagoon		Parish:	Iberia
		Quad Name:	Tigre Lagoon
Priority:	C	Quad Number:	2909109
Site Alias: None		Mile Marker:	
		Managed (Y/N)?:	N
Site Description: Entrance from Vermillion bay		Latitude:	29° 49' 20.133" N
		Longitude:	91° 55' 35.672" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marshland and fisheries	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C6		Location Information	
Name: Southeastern Entrance/Tigre Lagoon	Parish: Iberia	Quad Name: Tigre Lagoon	
Priority: C	Quad Number: 2909109		
Site Alias: None	Mile Marker:		
	Managed (Y/N)?: N		
	Latitude: 29° 49' 14.331" N		
Site Description: Entrance from Vermillion bay	Longitude: 91° 55' 56.997" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Marshland and fisheries	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

FLOATING TURF BAYOU QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

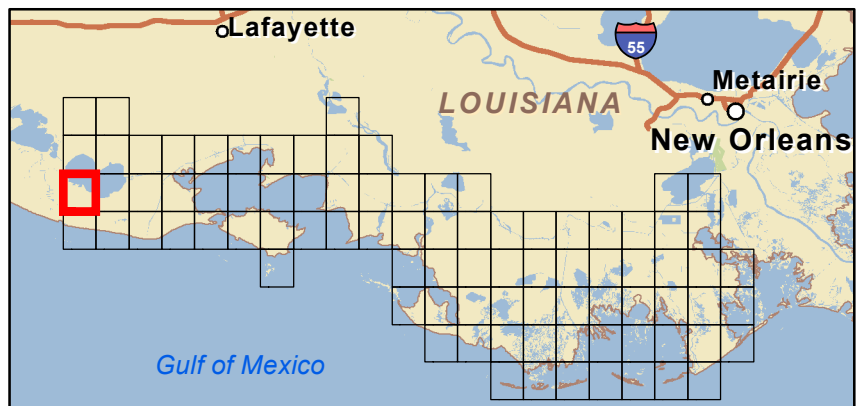


Kilometers

0 0.5 1 2 3

Miles

0 0.5 1 2 3



Site Information: A1		Location Information	
Name: Pond (north)	Parish: Vermilion	Quad Name: Floating Turf Bayou	
Priority: A	Quad Number: 2909220		
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?: N		
Site Description: Sensitive Habitat	Latitude: 29° 42' 52.374" N		
	Longitude: 92° 33' 50.697" W		
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

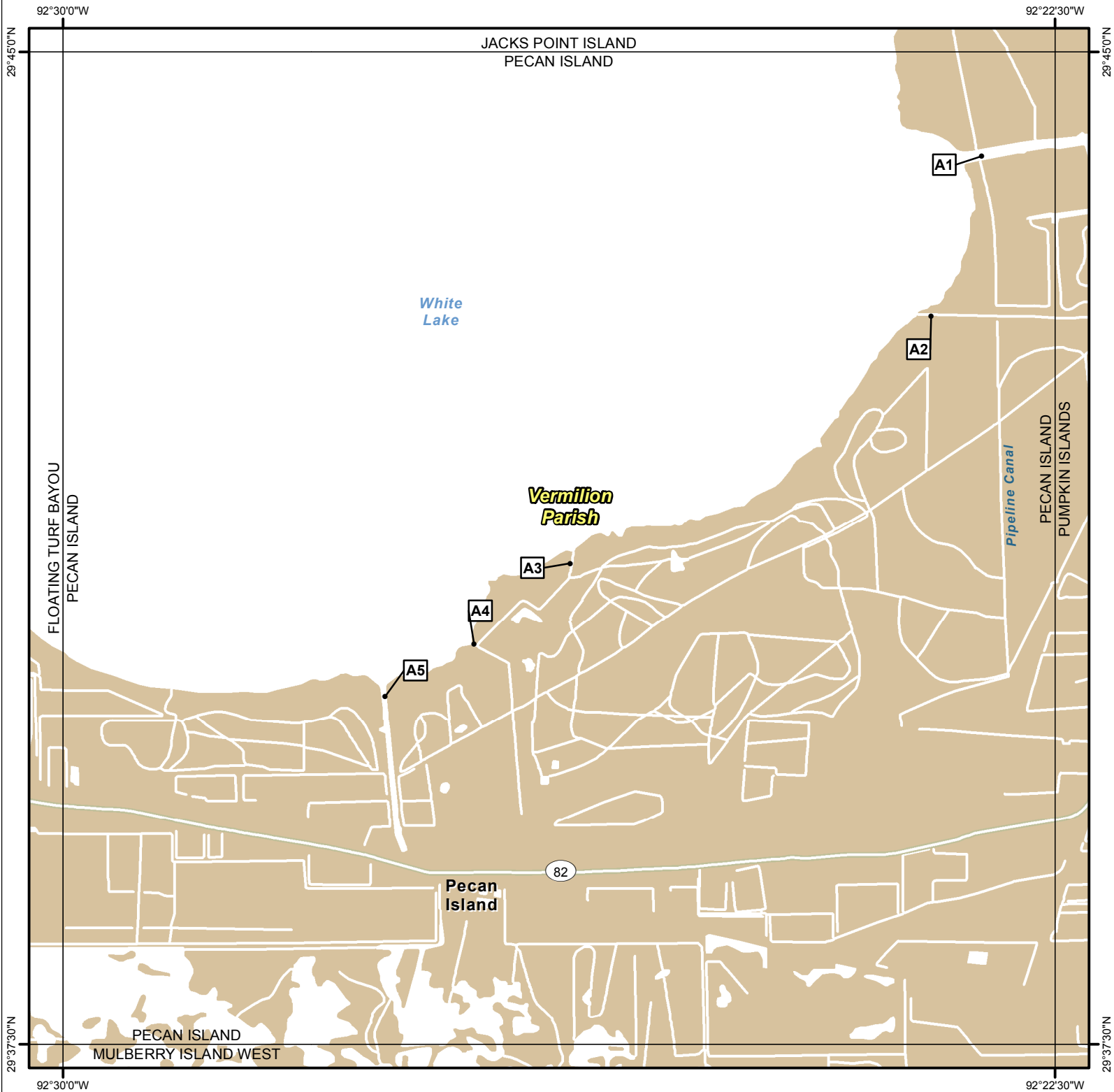
Site Information: A2		Location Information	
Name: Pond (south)	Parish: Vermilion	Quad Name: Floating Turf Bayou	
Priority: A	Quad Number: 2909220		
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?: N		
Site Description: Sensitive Habitat	Latitude: 29° 42' 51.568" N		
	Longitude: 92° 34' 01.280" W		
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Bayou		Parish:	Vermilion
		Quad Name:	Floating Turf Bayou
Priority: A		Quad Number:	2909220
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)? : N	
Site Description: Sensitive Habitat		Latitude:	29° 42' 47.859" N
		Longitude:	92° 35' 14.892" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A4		Location Information	
Name: Rockefeller Refuge (west)		Parish:	Vermilion
		Quad Name:	Floating Turf Bayou
Priority: A		Quad Number:	2909220
Site Alias: None		Mile Marker:	
		Managed (Y/N)?:	Y - Wildlife Area
Site Description: Wildlife Preserve		Latitude:	29° 38' 11.938" N
		Longitude:	92° 34' 03.075" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments: Notify LDWF site manager.	
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action: Breaking Waves <1.5 ft and Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Wildlife Preserve	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact: Notify LDWF site manager.	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: B1		Location Information	
Name: Rockefeller Refuge (east)		Parish:	Vermilion
		Quad Name:	Floating Turf Bayou
Priority: B		Quad Number:	2909220
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: Wildlife Preserve		Latitude:	29° 38' 12.236" N
		Longitude:	92° 31' 15.266" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Wildlife Preserve	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

PECAN ISLAND QUAD

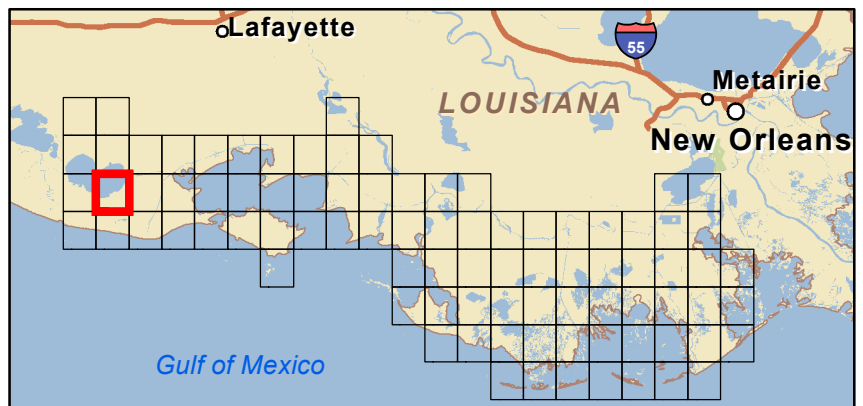


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: White Lake		Parish:	Vermilion
		Quad Name:	Pecan Island
Priority: A		Quad Number:	2909221
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
		Latitude:	29° 44' 12.818" N
Site Description: Primary Inlet south of LDWF's White Lake Wetland Conservation Area		Longitude:	92° 23' 03.205" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
		Whooping Crain Sanctuary	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Rebecca Broussard		State Submitter: DEQ/Vermilion Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies Concur with point	

Site Information: A2		Location Information	
Name: Canal at White Lake		Parish:	Vermilion
		Quad Name:	Pecan Island
Priority: A		Quad Number: 2909221	
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 43' 00.422" N
		Longitude:	92° 23' 26.143" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments:	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Canals at White Lake (north)	Parish:	Vermilion	
	Quad Name:	Pecan Island	
Priority: A	Quad Number:	2909221	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 41' 08.028" N	
Site Description: Sensitive Habitat	Longitude:	92° 26' 09.933" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A4		Location Information	
Name: Canals at White Lake (central)	Parish:	Vermilion	
	Quad Name:	Pecan Island	
Priority: A	Quad Number:	2909221	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 40' 31.476" N	
Site Description: Sensitive Habitat	Longitude:	92° 26' 53.564" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A5		Location Information	
Name: Canals at White Lake (south)	Parish:	Vermilion	
	Quad Name:	Pecan Island	
Priority: A	Quad Number:	2909221	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 40' 07.706" N	
Site Description: Sensitive Habitat	Longitude:	92° 27' 33.867" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

PUMPKIN ISLANDS QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

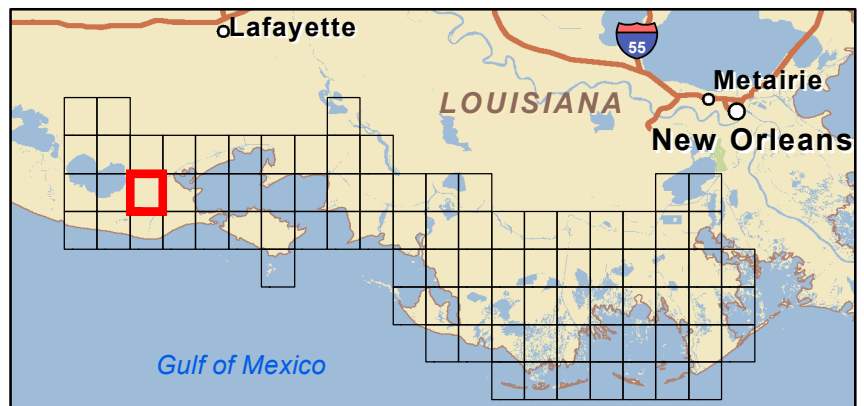


Kilometers

0 0.5 1 2 3

Miles

0 0.5 1 2 3



Site Information: A1		Location Information	
Name: Bayous at Schooner Bayou	Parish:	Vermilion	
	Quad Name:	Pumpkin Islands	
Priority: A	Quad Number:	2909222	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 44' 51.867" N	
Site Description: Sensitive Habitat	Longitude:	92° 18' 28.349" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Canal at Schooner Bayou (north)	Parish:	Vermilion	
	Quad Name:	Pumpkin Islands	
Priority: A	Quad Number:	2909222	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 44' 35.734" N	
Site Description: Sensitive Habitat	Longitude:	92° 20' 58.462" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Mouth of Little Bear Lake		Parish:	Vermilion
		Quad Name:	Pumpkin Islands
Priority: A		Quad Number:	2909222
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 44' 30.492" N
		Longitude:	92° 20' 39.796" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A4		Location Information	
Name: Canal at Schooner Bayou (central north)	Parish:	Vermilion	
	Quad Name:	Pumpkin Islands	
Priority: A	Quad Number:	2909222	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 44' 27.399" N	
Site Description: Sensitive Habitat	Longitude:	92° 20' 59.480" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Negligable			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A5		Location Information	
Name: Canal at Schooner Bayou (central south)	Parish:	Vermilion	
	Quad Name:	Pumpkin Islands	
Priority: A	Quad Number:	2909222	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 44' 23.897" N	
Site Description: Sensitive Habitat	Longitude:	92° 21' 26.516" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A6		Location Information	
Name: Canal at Schooner Bayou (south)	Parish:	Vermilion	
	Quad Name:	Pumpkin Islands	
Priority: A	Quad Number:	2909222	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 44' 17.243" N	
Site Description: Sensitive Habitat	Longitude:	92° 22' 15.452" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments:	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A7		Location Information	
Name: East and West Bayous (north)	Parish:	Vermilion	
	Quad Name:	Pumpkin Islands	
Priority: A	Quad Number:	2909222	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 39' 56.359" N	
Site Description: Sensitive Habitat	Longitude:	92° 15' 27.377" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A8		Location Information	
Name: East and West Bayous (south)	Parish:	Vermilion	
	Quad Name:	Pumpkin Islands	
Priority: A	Quad Number:	2909222	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 39' 52.725" N	
Site Description: Sensitive Habitat	Longitude:	92° 15' 19.117" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

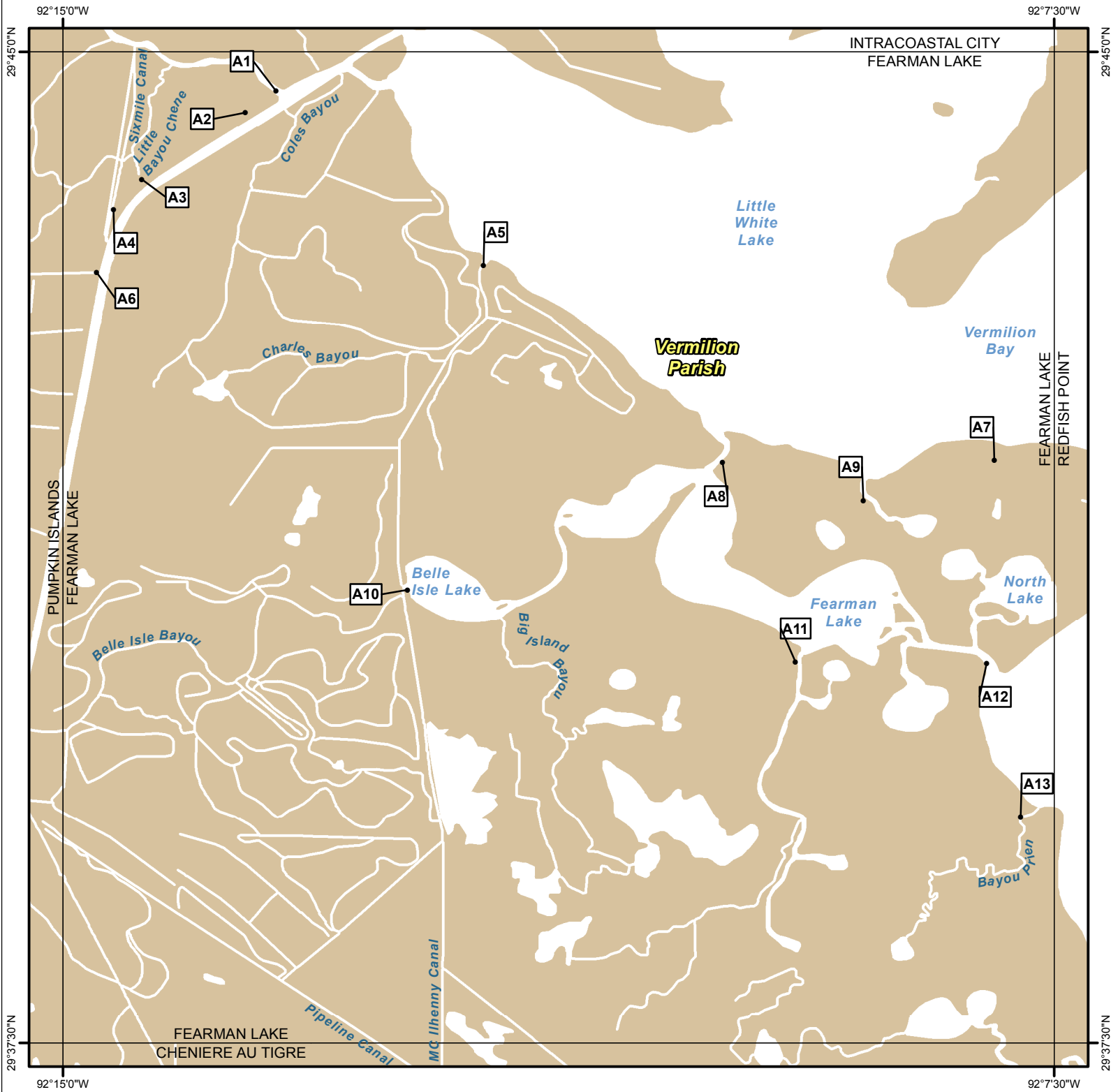
Site Information: A9		Location Information	
Name: Canal at Freshwater Bayou	Parish:	Vermilion	
	Quad Name:	Pumpkin Islands	
Priority: A	Quad Number:	2909222	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 39' 21.589" N	
Site Description: Sensitive Habitat	Longitude:	92° 15' 30.815" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A10		Location Information	
Name: Bayou at Freshwater Bayou (north)	Parish:	Vermilion	
	Quad Name:	Pumpkin Islands	
Priority: A	Quad Number:	2909222	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 37' 52.754" N	
Site Description: Sensitive Habitat	Longitude:	92° 16' 00.304" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A11		Location Information	
Name: Bayou at Freshwater Bayou (south)	Parish:	Vermilion	
	Quad Name:	Pumpkin Islands	
Priority: A	Quad Number:	2909222	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 37' 36.336" N	
Site Description: Sensitive Habitat	Longitude:	92° 16' 06.656" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

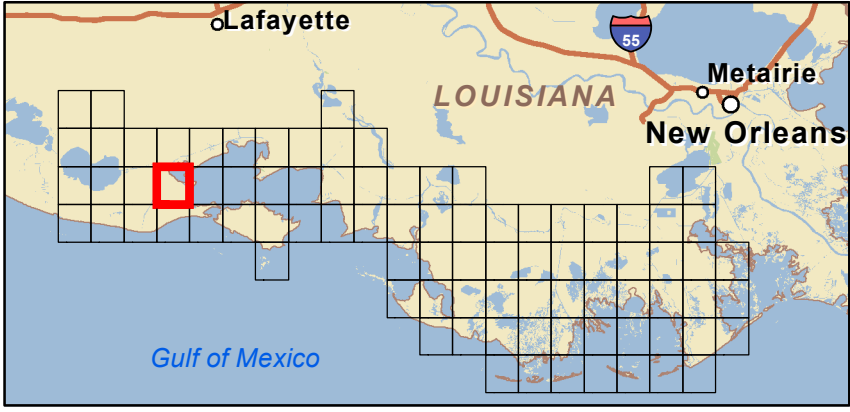
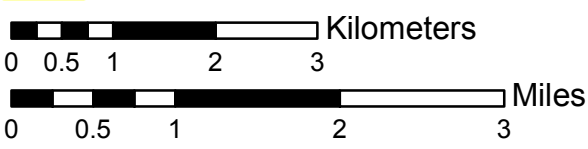
Site Information: B1		Location Information	
Name: Industrial Area		Parish:	Vermilion
		Quad Name:	Pumpkin Islands
Priority:	B	Quad Number:	2909222
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Industrial Area		Latitude:	29° 44' 44.480" N
		Longitude:	92° 19' 47.584" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10B		Resources At Risk Comments:	
ESI Description 10B: Freshwater marshes			
Industrial Area			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Industrial Area	

FEARMAN LAKE QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: A1		Location Information	
Name: Bayou off Schooner Bayou		Parish:	Vermilion
		Quad Name:	Fearman Lake
Priority: A		Quad Number:	2909223
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 44' 42.293" N
		Longitude:	92° 13' 23.314" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10C		Resources At Risk Comments:	
ESI Description 10C: Freshwater swamps			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Canal off Schooner Bayou (north)		Parish:	Vermilion
		Quad Name:	Fearman Lake
Priority: A		Quad Number:	2909223
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 44' 32.487" N
		Longitude:	92° 13' 37.321" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Canal off Schooner Bayou (central north)	Parish:	Vermilion	
	Quad Name:	Fearman Lake	
Priority: A	Quad Number:	2909223	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 44' 02.229" N	
Site Description: Sensitive Habitat	Longitude:	92° 14' 24.338" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A4		Location Information	
Name: Canal off Schooner Bayou (central south)	Parish:	Vermilion	
	Quad Name:	Fearman Lake	
Priority: A	Quad Number:	2909223	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 43' 48.454" N	
Site Description: Sensitive Habitat	Longitude:	92° 14' 37.221" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A5		Location Information	
Name: Belle Canal at Vermilion Bay		Parish:	Vermilion
		Quad Name:	Fearman Lake
Priority: A		Quad Number:	2909223
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive Habitat		Latitude:	29° 43' 23.139" N
		Longitude:	92° 11' 49.129" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Wildlife Preserve	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish/LDEQ	
Submit Date: 2013.04.16		State Comments:	

Site Information: A6		Location Information	
Name: Canal off Schooner Bayou (south)	Parish:	Vermilion	
	Quad Name:	Fearman Lake	
Priority: A	Quad Number:	2909223	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 43' 20.035" N	
Site Description: Sensitive Habitat	Longitude:	92° 14' 44.939" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A7		Location Information	
Name: East Shallow Bayou at Vermilion Bay		Parish:	Vermilion
		Quad Name:	Fearman Lake
Priority: A		Quad Number:	2909223
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 41' 54.534" N
Site Description: State Property part of State Wildlife Refuge		Longitude:	92° 07' 57.065" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish/LDEQ	
Submit Date: 2013.04.16		State Comments:	

Site Information: A8		Location Information	
Name: Fearman Lake / Primary Inlet	Parish: Vermilion	Quad Name: Fearman Lake	
	Quad Number: 2909223		
Priority: A	Mile Marker:		
Site Alias: None	Managed (Y/N)?: Y - Wildlife Refuge		
	Latitude: 29° 41' 53.499" N		
	Longitude: 92° 10' 00.560" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat / Paul Rainey Wildlife Sanctuary	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Rebecca Broussard		State Submitter: DEQ/Vermilion Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies Concur with point	

Site Information: A9		Location Information	
Name: Shallow Bayou at Vermilion Bay		Parish:	Vermilion
		Quad Name:	Fearman Lake
Priority:	A	Quad Number:	2909223
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
Site Description: State Property part of State Wildlife Refuge		Latitude:	29° 41' 36.407" N
		Longitude:	92° 08' 56.637" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

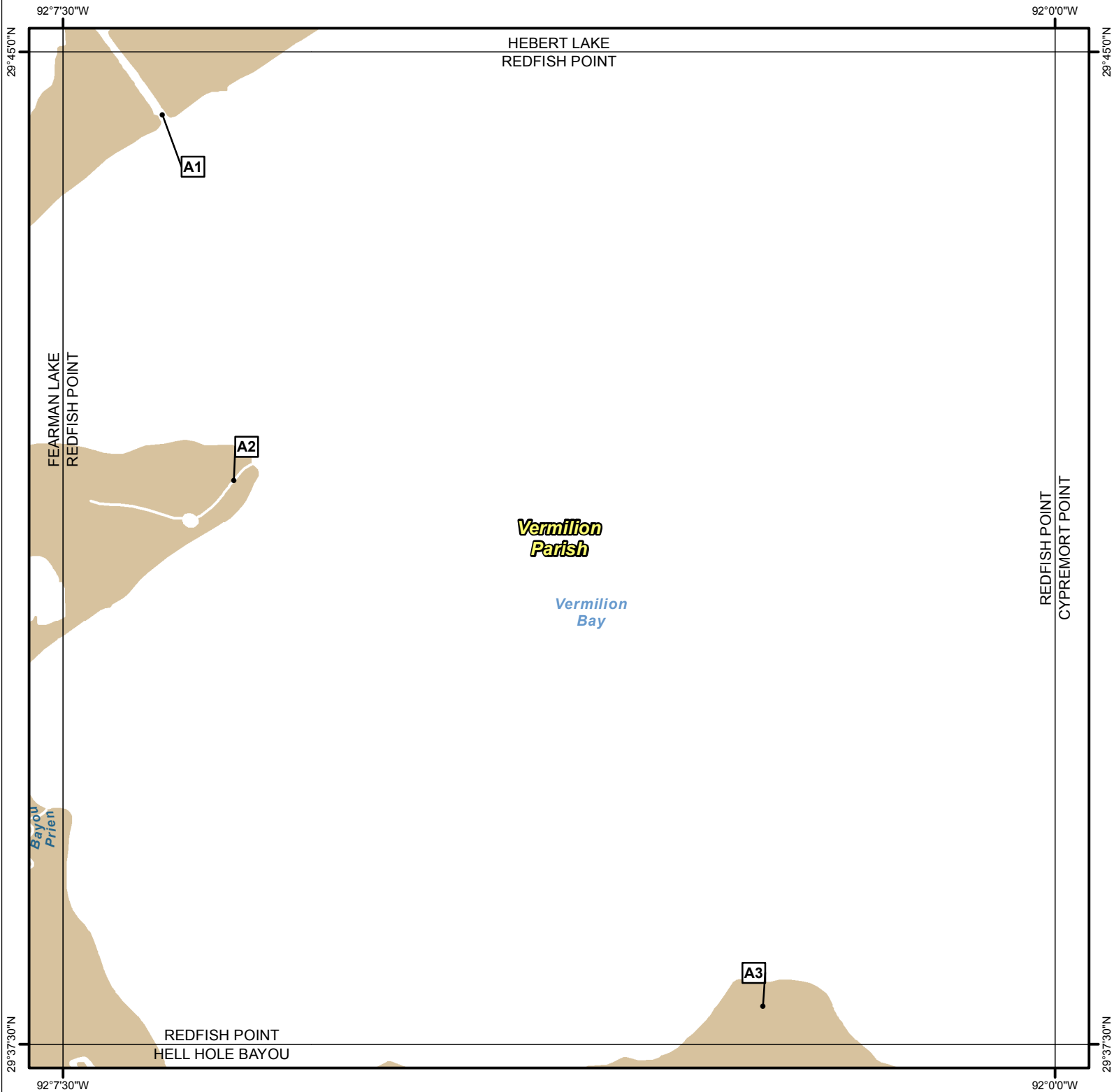
Site Information: A10		Location Information	
Name: Belle Lake Rookery		Parish:	Vermilion
		Quad Name:	Fearman Lake
Priority:	A	Quad Number:	2909223
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Sensitive habitat		Latitude:	29° 40' 55.690" N
		Longitude:	92° 12' 23.558" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Wading Bird Rookery / Public Preserve	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A11		Location Information	
Name: Toms Bayou at Fearman Lake		Parish:	Vermilion
		Quad Name:	Fearman Lake
Priority:	A	Quad Number:	2909223
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?:	Y - Wildlife Refuge
Site Description: State Property part of State Wildlife Refuge		Latitude:	29° 40' 23.110" N
		Longitude:	92° 09' 27.355" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish/LDEQ	
Submit Date: 2013.04.16		State Comments:	

Site Information: A12		Location Information	
Name: Inlet for Fearman Lake		Parish:	Vermilion
		Quad Name:	Fearman Lake
Priority: A		Quad Number:	2909223
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 40' 22.351" N
Site Description: State Property part of State Wildlife Refuge		Longitude:	92° 08' 00.540" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat / Paul Rainey Wildlife Sanctuary	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Rebecca Broussard		State Submitter: DEQ/Vermilion Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies Concur with point	

Site Information: A13		Location Information	
Name: Bayou Prien at Vermilion Bay		Parish:	Vermilion
		Quad Name:	Fearman Lake
Priority: A		Quad Number:	2909223
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 39' 12.682" N
Site Description: State Property part of State Wildlife Refuge		Longitude:	92° 07' 45.212" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish/LDEQ	
Submit Date: 2013.04.16		State Comments:	

REDFISH POINT QUAD

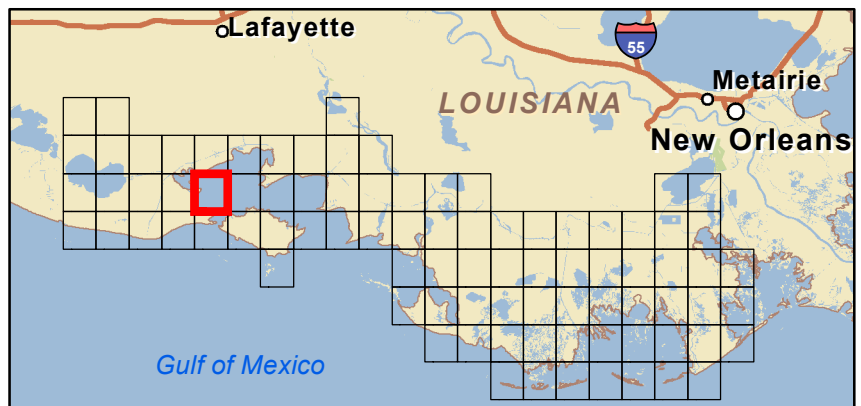


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles

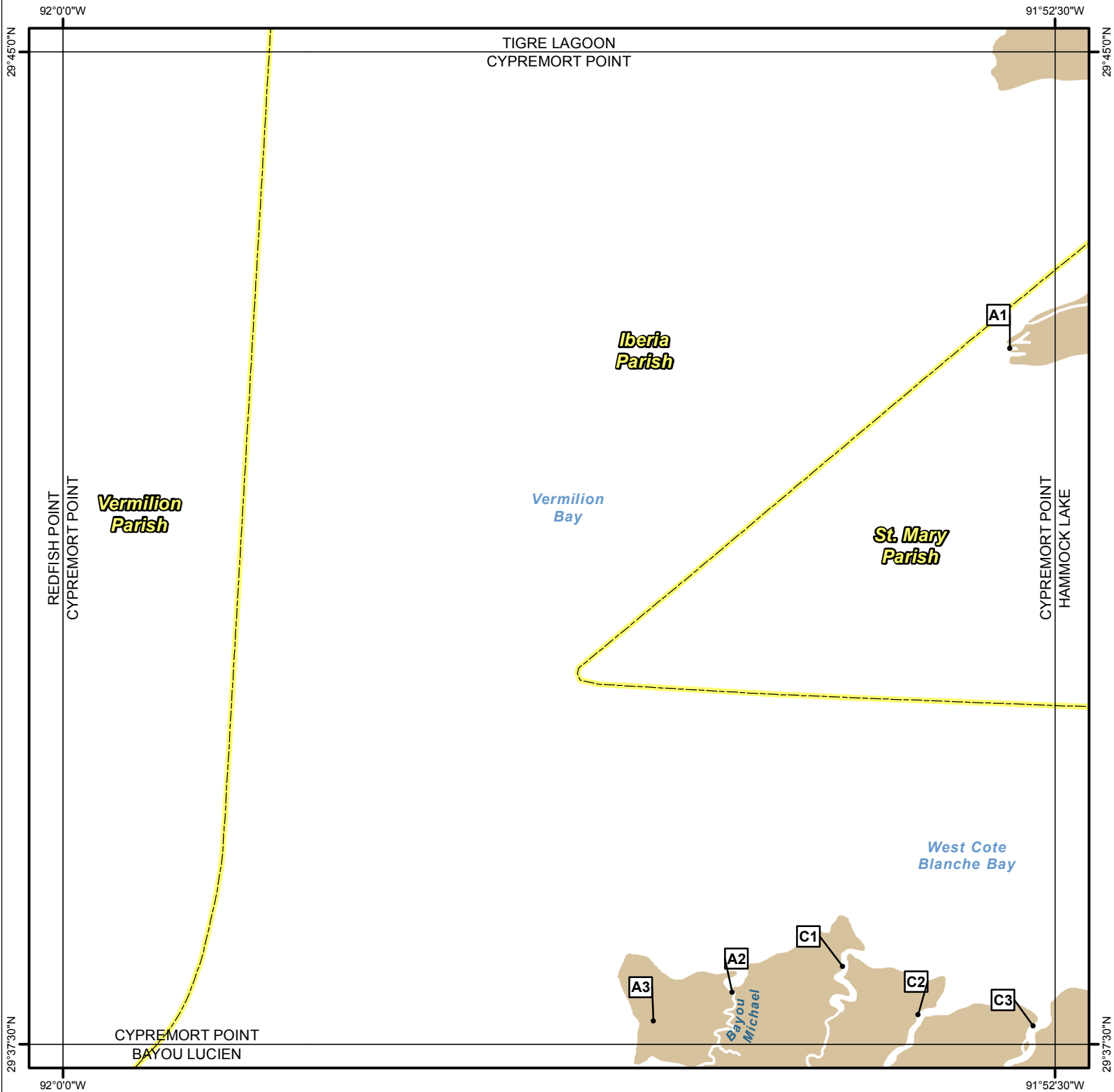


Site Information: A1		Location Information	
Name: Mouth of 4-Mile Cut	Parish: Vermilion		
	Quad Name: Redfish Point		
Priority: A	Quad Number: 2909224		
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?: N		
Site Description: Sensitive Habitat	Latitude: 29° 44' 31.709" N		
	Longitude: 92° 06' 45.099" W		
Response Considerations			
Site Strategy: Deflection Booming	Site Strategy Comments:		
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A	Resources At Risk Comments: Sensitive Habitat		
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A	Special Contact:		
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio	State Submitter: DEQ-Shane Miller and Steve Lorio		
Submit Date: 2013.04.16	State Comments: Sensitive Habitat		

Site Information: A2		Location Information	
Name: Redfish Point Inlet at Vermilion Bay	Parish: Vermilion	Quad Name: Redfish Point	
Priority: A	Quad Number: 2909224		
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?: Y - Wildlife Refuge		
	Latitude: 29° 41' 45.921" N		
Site Description: State Refuge part of Marsh Island Refuge	Longitude: 92° 06' 12.480" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish/LDEQ	
Submit Date: 2013.04.16		State Comments:	

Site Information: A3		Location Information	
Name: Inlet To Refuge at Vermilion Bay	Parish:	Vermilion	
	Quad Name:	Redfish Point	
Priority: A	Quad Number:	2909224	
Site Alias: N/A Site Description: State Refuge part of Marsh Island Refuge	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 37' 47.258" N	
	Longitude:	92° 02' 12.442" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish/LDEQ	
Submit Date: 2013.04.16		State Comments:	

CYPREMORT POINT QUAD

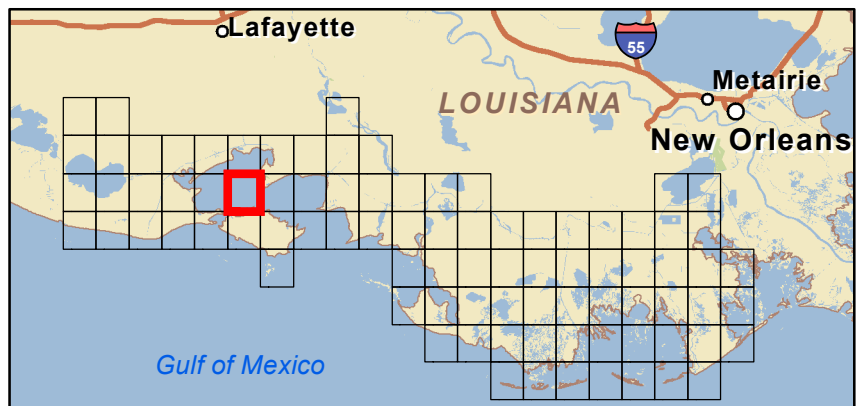


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Cypremort Point Business & Residences		Parish:	St. Mary
		Quad Name:	Cypremort Point
Priority: A		Quad Number:	2909117
Site Alias: Cypremort Point Residential Recreation Area (Submitted by State)		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Residential/Rec Area		Latitude:	29° 42' 45.634" N
		Longitude:	91° 52' 50.419" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Two inlets to be considered	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By EOC		State Submitter: DEQ/ St Mary Parish/DNR/CPRA	
Submit Date: 2012.10.01		State Comments: State Concurs with Parish	

Site Information: A2		Location Information	
Name: Bayou Michel	Parish: Iberia	Quad Name: Cypremort Point	
Priority: A	Quad Number: 2909117		
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?: Y - Wildlife Refuge		
	Latitude: 29° 37' 53.688" N		
Site Description: State Refuge part of Marsh Island Refuge	Longitude: 91° 54' 56.372" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish/LDEQ	
Submit Date: 2013.04.16		State Comments:	

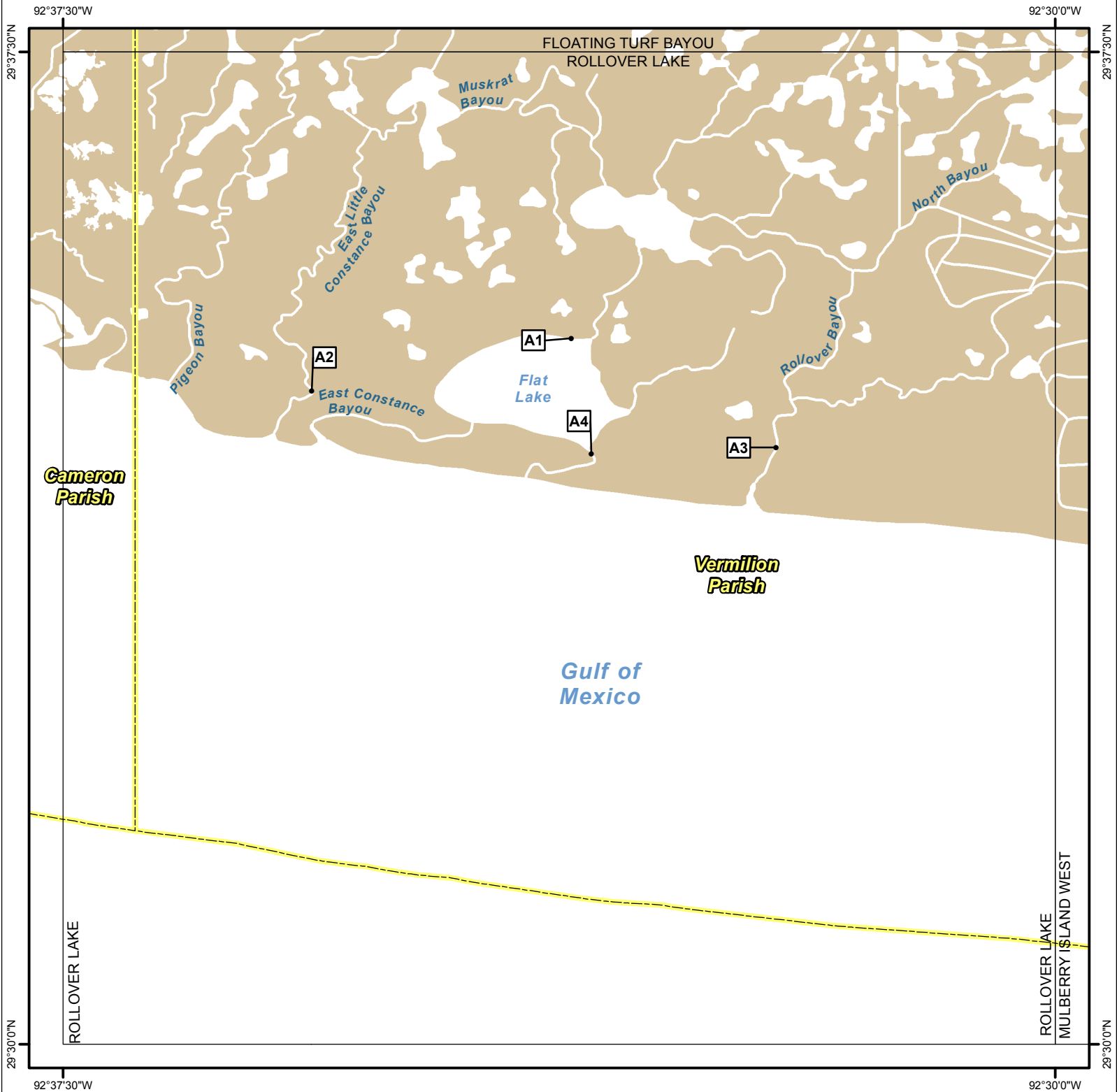
Site Information: A3		Location Information	
Name: Multiple Bayous	Parish: Iberia	Quad Name: Cypremort Point	
	Priority: A	Quad Number: 2909117	
Site Alias: N/A Site Description: State Refuge part of Marsh Island Refuge	Mile Marker:		
	Managed (Y/N)?: Y - Wildlife Refuge		
	Latitude: 29° 37' 40.759" N Longitude: 91° 55' 32.247" W		
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A ESI Description 10A: Salt- and brackish-water marshes		Resources At Risk Comments: Sensitive habitat	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio Submit Date: 2013.04.16		State Submitter: DEQ-Shane Miller and Steve Lorio State Comments: Sensitive Habitat	

Site Information: C1		Location Information	
Name: Entrance to Lucien Bayou from Vermilion Bay	Parish:	Iberia	
	Quad Name:	Cypremort Point	
Priority: C	Quad Number:	2909117	
Site Alias: None Site Description: State Refuge part of Marsh Island Refuge	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 38' 05.334" N	
	Longitude:	91° 54' 06.247" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C2		Location Information	
Name: Entrance to Platte Bayou from Vermilion Bay	Parish:	Iberia	
	Quad Name:	Cypremort Point	
Priority: C	Quad Number:	2909117	
Site Alias: None Site Description: State Refuge part of Marsh Island Refuge	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 37' 43.236" N	
	Longitude:	91° 53' 32.074" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C3		Location Information	
Name: LDWF Marsh Island Station		Parish:	Iberia
		Quad Name:	Cypremort Point
Priority:	C	Quad Number:	2909117
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 37' 38.264" N
Site Description: State Refuge part of Marsh Island Refuge		Longitude:	91° 52' 39.850" W
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive habitat	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

ROLLOVER LAKE QUAD

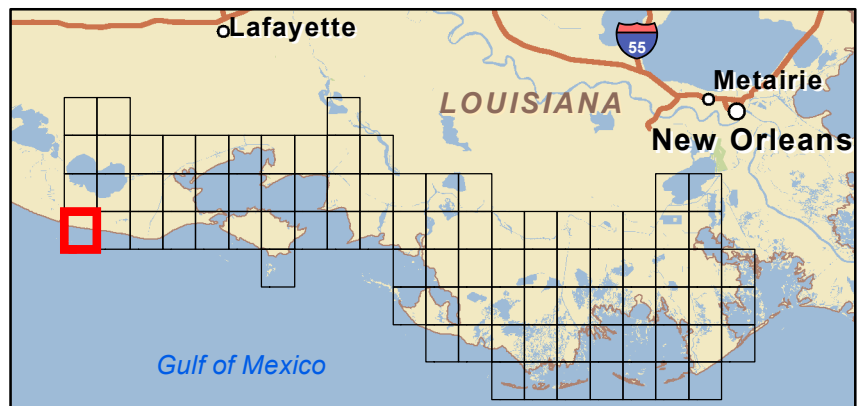


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Bayou connecting Flat Lake with Rollover Lake	Parish:	Vermilion	
	Quad Name:	Rollover Lake	
Priority: A	Quad Number:	2909228	
Site Alias: N/A Site Description: State Refuge part of Rockefeller Refuge	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 35' 20.278" N	
	Longitude:	92° 33' 39.594" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A/9A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes / 9A: Sheltered tidal flats			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Connects Flat Lake with Rollover Lake	

Site Information: A2		Location Information	
Name: Inlet To Marsh at GOM		Parish:	Vermilion
		Quad Name:	Rollover Lake
Priority: A		Quad Number:	2909228
Site Alias: N/A Site Description: State Refuge part of Rockefeller Refuge		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 34' 56.406" N
		Longitude:	92° 35' 37.188" W
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A/5/2A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes / 5: Mixed sand and gravel beaches / 2A: Exposed Wave-cut Platform in clay			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish/LDEQ	
Submit Date: 2013.04.16		State Comments:	

Site Information: A3		Location Information	
Name: Rockefeller Inlet		Parish:	Vermilion
		Quad Name:	Rollover Lake
Priority: A		Quad Number:	2909228
Site Alias: N/A Site Description: State Refuge part of Rockefeller Refuge		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 34' 30.653" N
		Longitude:	92° 32' 06.493" W
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A/5/2A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes / 5: Mixed sand and gravel beaches / 2A: Exposed Wave-cut Platform in clay			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DNR/CPRA		State Submitter: DNR/CPRA	
Submit Date: 2013.04.16		State Comments:	

Site Information: A4		Location Information	
Name: Rollover Primary Inlet		Parish:	Vermilion
		Quad Name:	Rollover Lake
Priority: A		Quad Number:	2909228
Site Alias: None Site Description: State Refuge part of Rockefeller Refuge		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 34' 27.547" N
		Longitude:	92° 33' 30.330" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: >2500 ft			
Resources At Risk			
ESI Code: 10A/2A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes / 2A: Exposed Wave-cut Platform in clay			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Rebecca Broussard		State Submitter: DEQ/Vermilion Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies Concur with point	

MULBERRY ISLAND WEST QUAD

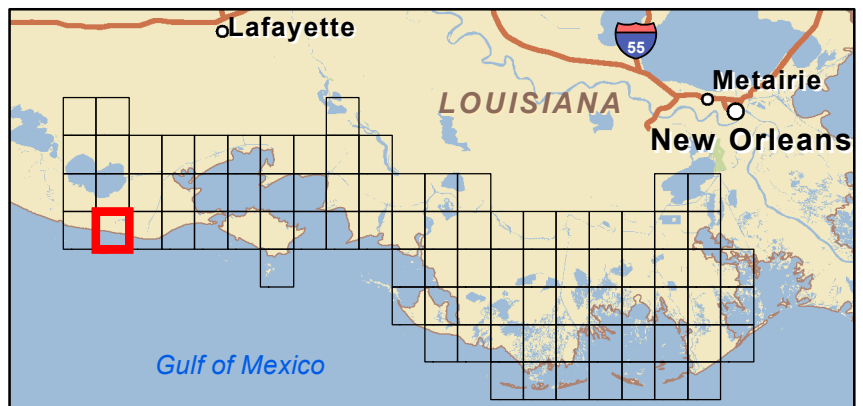


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

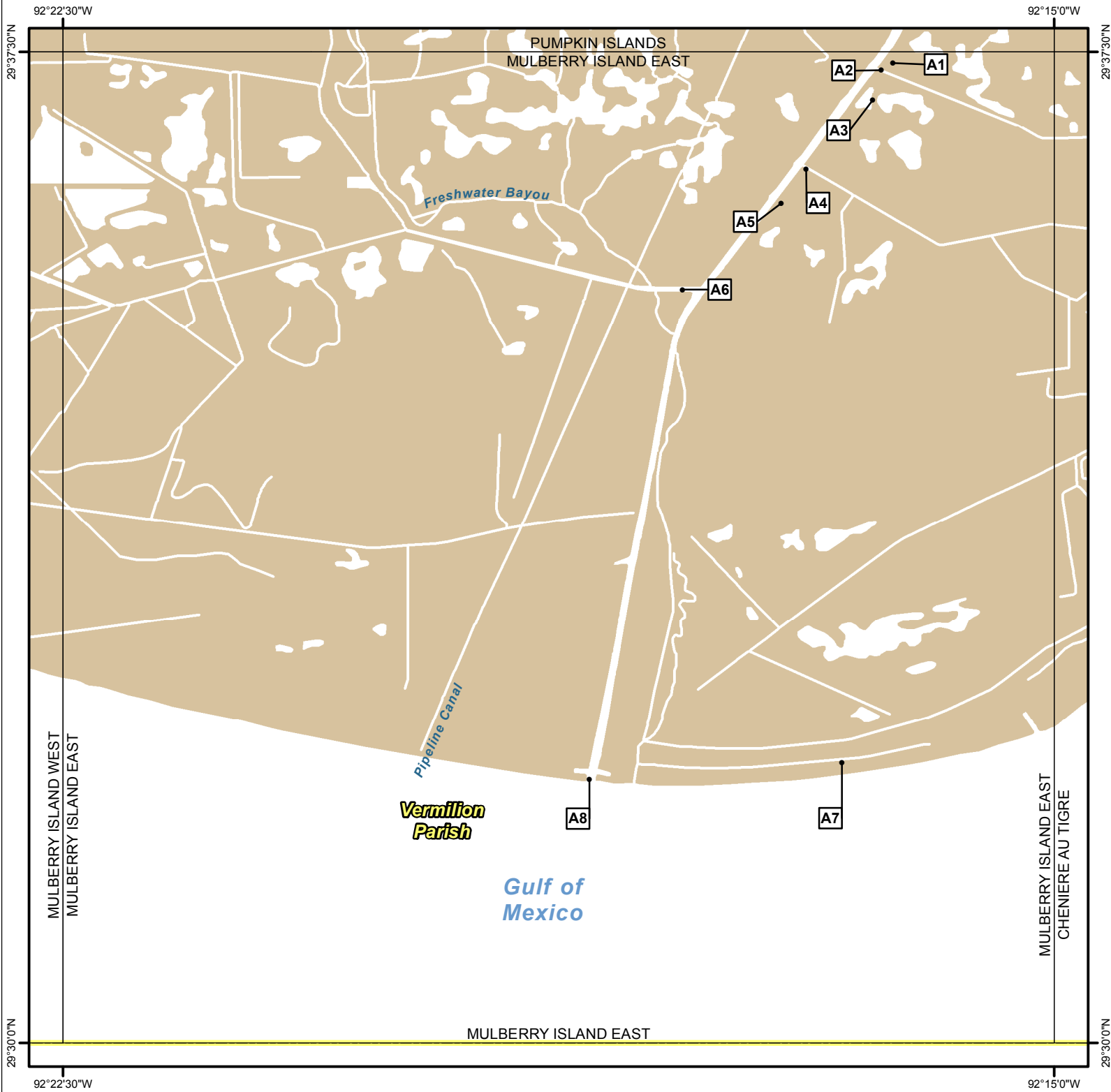
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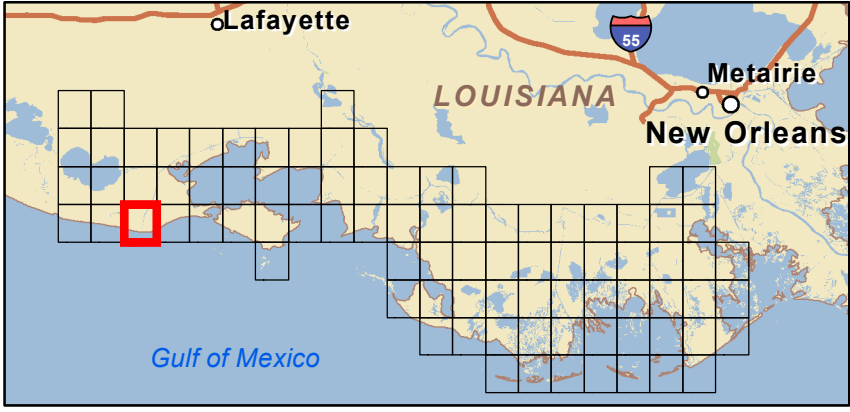
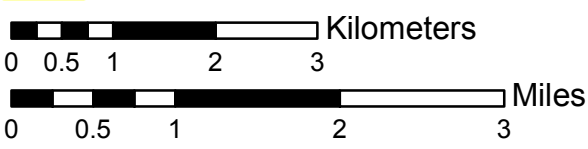
Site Information: A1		Location Information	
Name: Canal juncture	Parish: Vermilion	Quad Name: Mulberry Island West	
Priority: A	Quad Number: 2909229		
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?: N		
Site Description: Sensitive Habitat	Latitude: 29° 36' 10.576" N		
	Longitude: 92° 23' 34.814" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

MULBERRY ISLAND EAST QUAD



Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



Site Information: A1		Location Information	
Name: Breach	Parish:	Vermilion	
	Quad Name:	Mulberry Island East	
Priority: A	Quad Number:	2909230	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
Site Description: Sensitive Habitat	Latitude:	29° 37' 24.922" N	
	Longitude:	92° 16' 13.128" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Bayous at Freshwater Bayou (north)	Parish:	Vermilion	
	Quad Name:	Mulberry Island East	
Priority: A	Quad Number:	2909230	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 37' 21.685" N	
Site Description: Sensitive Habitat	Longitude:	92° 16' 18.478" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Bayous at Freshwater Bayou (south)	Parish:	Vermilion	
	Quad Name:	Mulberry Island East	
Priority: A	Quad Number:	2909230	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 37' 08.179" N	
Site Description: Sensitive Habitat	Longitude:	92° 16' 22.276" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A4		Location Information	
Name: Canal at Freshwater Bayou (north)	Parish:	Vermilion	
	Quad Name:	Mulberry Island East	
Priority: A	Quad Number:	2909230	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 36' 36.711" N	
Site Description: Sensitive Habitat	Longitude:	92° 16' 52.492" W	
Response Considerations			
Site Strategy: Diversion Booming to Collection Point		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

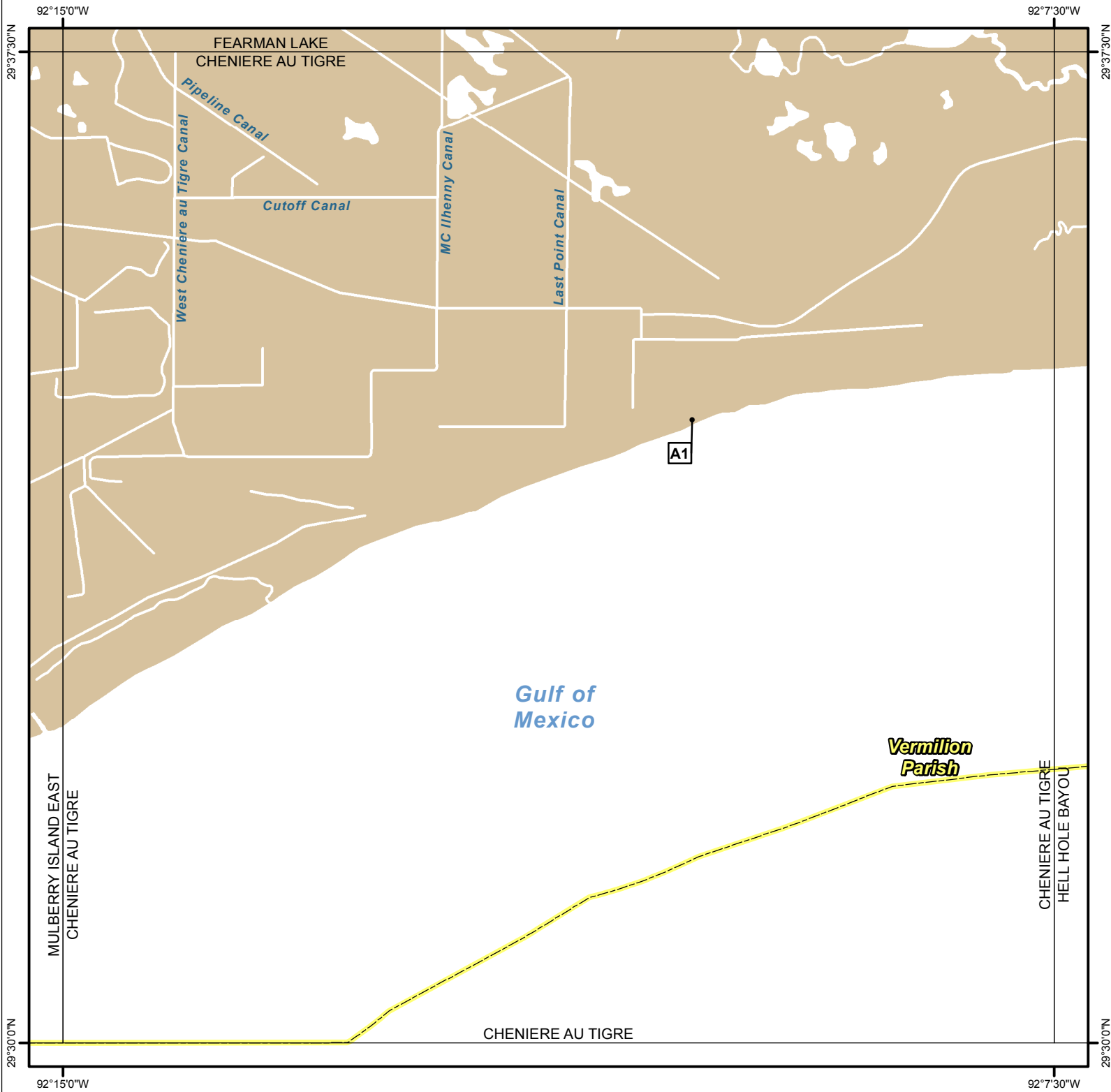
Site Information: A5		Location Information	
Name: Canal at Freshwater Bayou (central)	Parish:	Vermilion	
	Quad Name:	Mulberry Island East	
Priority: A	Quad Number:	2909230	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 36' 21.182" N	
Site Description: Sensitive Habitat	Longitude:	92° 17' 03.982" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A6		Location Information	
Name: Canal at Freshwater Bayou (south)	Parish:	Vermilion	
	Quad Name:	Mulberry Island East	
Priority: A	Quad Number:	2909230	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 35' 42.113" N	
Site Description: Sensitive Habitat	Longitude:	92° 17' 48.872" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A7		Location Information	
Name: Cheniere Au Tirge	Parish:	Vermilion	
	Quad Name:	Mulberry Island East	
Priority: A	Quad Number:	2909230	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 32' 07.362" N	
Site Description: Shorebird Nesting/Loafing	Longitude:	92° 16' 36.318" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 5/2A/7		Resources At Risk Comments:	
ESI Description 5: Mixed sand and gravel beaches / 2A: Exposed Wave-cut Platform in clay / 7: Exposed tidal flats			
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

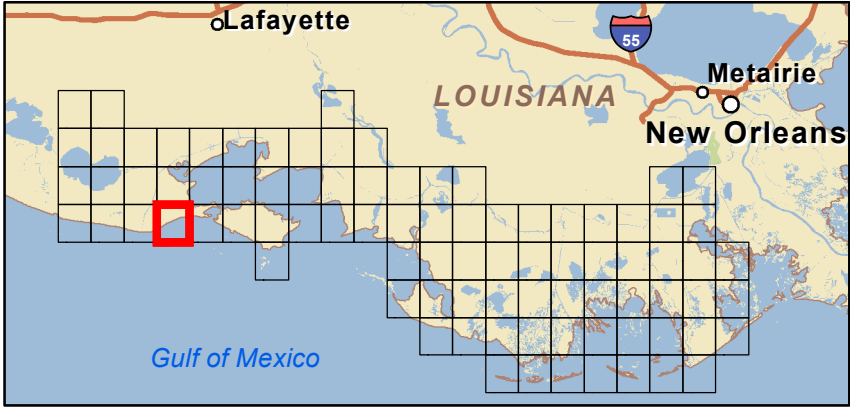
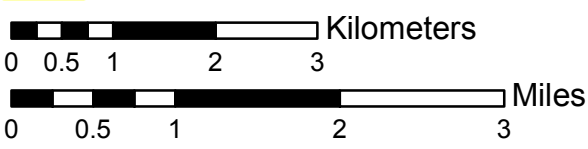
Site Information: A8		Location Information	
Name: Freshwater City	Parish:	Vermilion	
	Quad Name:	Mulberry Island East	
Priority: A	Quad Number:	2909230	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 31' 59.604" N	
Site Description: Primary Inlet	Longitude:	92° 18' 31.019" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		High Economic Values	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By Rebecca Broussard		State Submitter: DEQ/Vermilion Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies Concur with point	

CHENIERE AU TIGRE QUAD



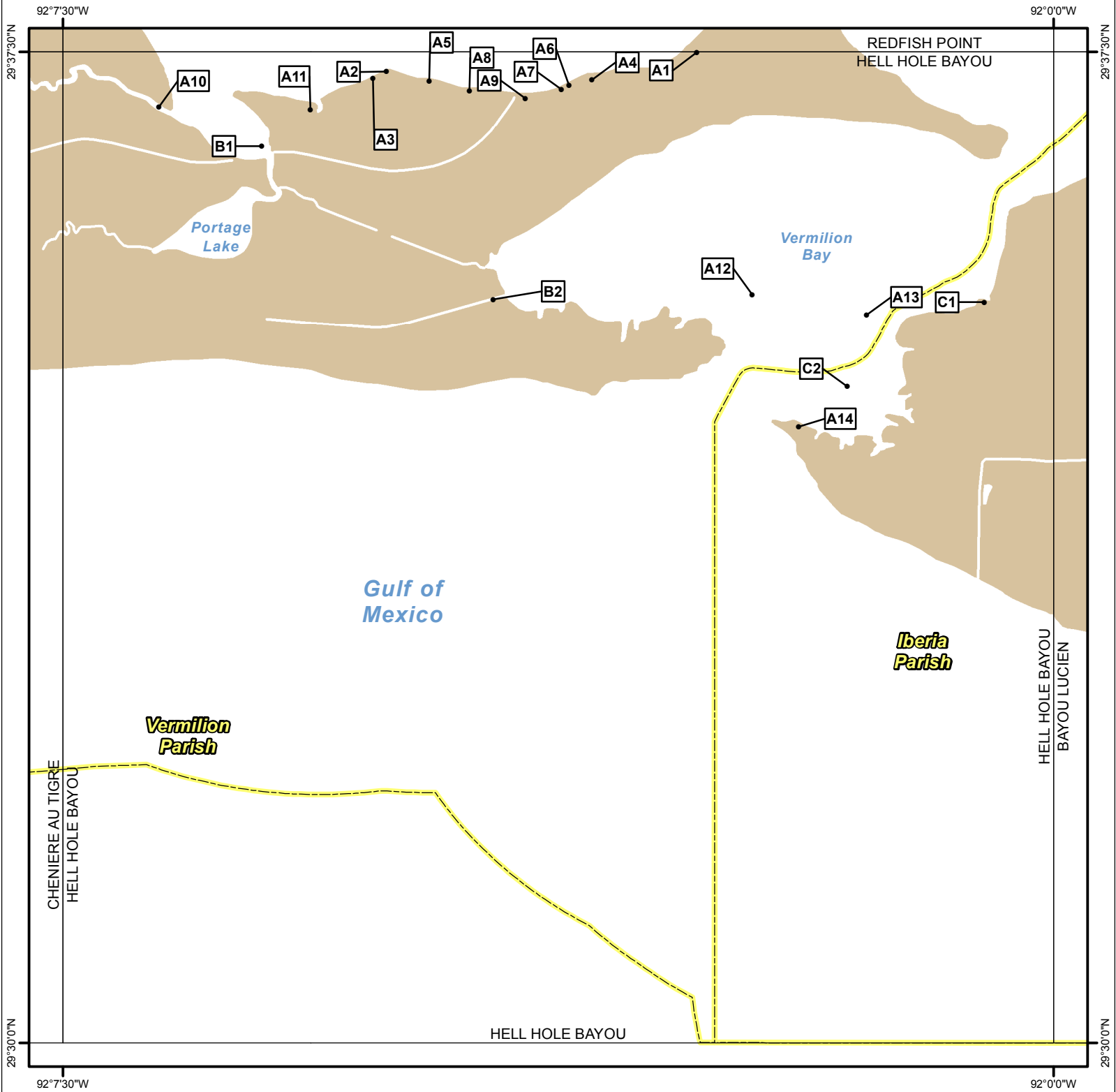
Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries



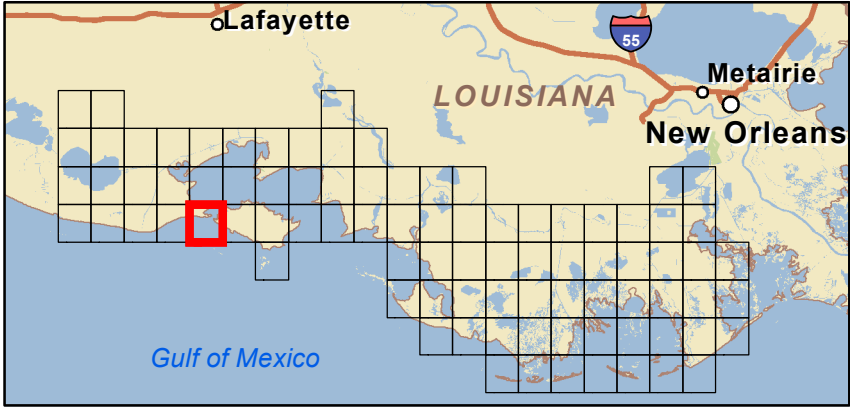
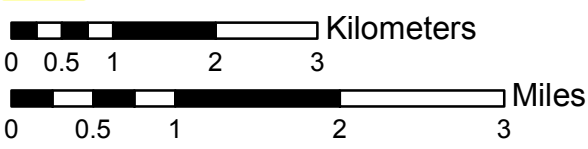
Site Information: A1		Location Information	
Name: Dead Man Island		Parish:	Vermilion
		Quad Name:	Cheniere Au Tigre
Priority: A		Quad Number:	2909231
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: Nesting area along GOM		Latitude:	29° 34' 43.038" N
		Longitude:	92° 10' 14.247" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 5/7		Resources At Risk Comments: Paul J. Rainey Sanctuary	
ESI Description 5: Mixed sand and gravel beaches / 7: Exposed tidal flats			
Contact Information			
Contact: National Audubon Society		Special Contact:	
Site Statistics			
Submitted By Rebecca Broussard		State Submitter: DEQ/Vermilion Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies Concur with point	

HELL HOLE BAYOU QUAD



Legend

- GRP Sites
- Quad Boundaries
- ▭ Parish Boundaries



Site Information: A1		Location Information	
Name: Bayou 10 south Vermilion Bay	Parish:	Vermilion	
	Quad Name:	Hell Hole Bayou	
Priority: A	Quad Number:	2909232	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 37' 29.830" N	
Site Description: Sensitive Habitat	Longitude:	92° 02' 42.114" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: National Audubon Society		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A2		Location Information	
Name: Bayou 03 south Vermilion Bay	Parish:	Vermilion	
	Quad Name:	Hell Hole Bayou	
Priority: A	Quad Number:	2909232	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 37' 21.103" N	
Site Description: State Area part of State Wildlife Refuge	Longitude:	92° 05' 03.173" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A3		Location Information	
Name: Bayou 02 south Vermilion Bay	Parish:	Vermilion	
	Quad Name:	Hell Hole Bayou	
Priority: A	Quad Number:	2909232	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 37' 18.113" N	
Site Description: State Area part of State Wildlife Refuge	Longitude:	92° 05' 09.151" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A4		Location Information	
Name: Bayou 09 south Vermilion Bay	Parish:	Vermilion	
	Quad Name:	Hell Hole Bayou	
Priority: A	Quad Number:	2909232	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 37' 17.254" N	
Site Description: State Area part of State Wildlife Refuge	Longitude:	92° 03' 29.758" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A5		Location Information	
Name: Bayou 04 south Vermilion Bay		Parish:	Vermilion
		Quad Name:	Hell Hole Bayou
Priority: A		Quad Number:	2909232
Site Alias: N/A Site Description: State Area part of State Wildlife Refuge		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 37' 16.741" N
		Longitude:	92° 04' 43.707" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A6		Location Information	
Name: Bayou 08 south Vermilion Bay		Parish:	Vermilion
		Quad Name:	Hell Hole Bayou
Priority: A		Quad Number:	2909232
Site Alias: N/A Site Description: State Area part of State Wildlife Refuge		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 37' 14.942" N
		Longitude:	92° 03' 40.152" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A7		Location Information	
Name: Bayou 07 south Vermilion Bay		Parish:	Vermilion
		Quad Name:	Hell Hole Bayou
Priority: A		Quad Number:	2909232
Site Alias: N/A Site Description: State Area part of State Wildlife Refuge		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 37' 12.956" N
		Longitude:	92° 03' 43.551" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A8		Location Information	
Name: Bayou 05 south Vermilion Bay	Parish:	Vermilion	
	Quad Name:	Hell Hole Bayou	
Priority: A	Quad Number:	2909232	
Site Alias: N/A Site Description: State Area part of State Wildlife Refuge	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 37' 12.349" N	
	Longitude:	92° 04' 25.394" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A9		Location Information	
Name: Bayou 06 south Vermilion Bay	Parish:	Vermilion	
	Quad Name:	Hell Hole Bayou	
Priority: A	Quad Number:	2909232	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 37' 09.000" N	
Site Description: Sensitive Habitat	Longitude:	92° 04' 00.076" W	
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive Habitat	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A10		Location Information	
Name: Hog Bayou Inlet at Vermilion Bay	Parish:	Vermilion	
	Quad Name:	Hell Hole Bayou	
Priority: A	Quad Number:	2909232	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 37' 05.124" N	
Site Description: State Area part of State Wildlife Refuge	Longitude:	92° 06' 46.363" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Sensitive habitat	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A11		Location Information	
Name: Bayou 01 south Vermilion Bay		Parish:	Vermilion
		Quad Name:	Hell Hole Bayou
Priority: A		Quad Number:	2909232
Site Alias: N/A Site Description: State Area part of State Wildlife Refuge		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 37' 03.855" N
		Longitude:	92° 05' 37.623" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive Habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By DEQ-Shane Miller and Steve Lorio		State Submitter: DEQ-Shane Miller and Steve Lorio	
Submit Date: 2013.04.16		State Comments: Sensitive Habitat	

Site Information: A12		Location Information	
Name: Bird Rookery SW Pass		Parish:	Vermilion
		Quad Name:	Hell Hole Bayou
Priority: A		Quad Number:	2909232
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: N	
Site Description: Wading bird rookery		Latitude:	29° 35' 39.893" N
		Longitude:	92° 02' 16.964" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10D		Resources At Risk Comments:	
ESI Description 10D: Scrub-shrub wetlands			
Contact Information			
Contact: National Audubon Society		Special Contact:	
Site Statistics			
Submitted By Preexisting Parish Assessment		State Submitter: DEQ/Vermilion Parish/LDWF/DNR/CPRA	
Submit Date: 2012.03.13		State Comments: Agencies Concur with point	

Site Information: A13		Location Information	
Name: Shell Reefs SW Pass / Island in Vermilion Bay	Parish:	Vermilion	
	Quad Name:	Hell Hole Bayou	
Priority: A	Quad Number:	2909232	
Site Alias: N/A	Mile Marker:		
	Managed (Y/N)?:	N	
	Latitude:	29° 35' 30.588" N	
Site Description: Bird nesting area	Longitude:	92° 01' 24.911" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Loafing and nesting area for a variety of bird species	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A14		Location Information	
Name: Lighthouse Point / Island		Parish:	Iberia
		Quad Name:	Hell Hole Bayou
Priority:	A	Quad Number:	2909232
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
Site Description: State Refuge part of Marsh Island Refuge		Latitude:	29° 34' 39.766" N
		Longitude:	92° 01' 55.797" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 6A		Resources At Risk Comments: Tern nesting area	
ESI Description 6A: Gravel beaches			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

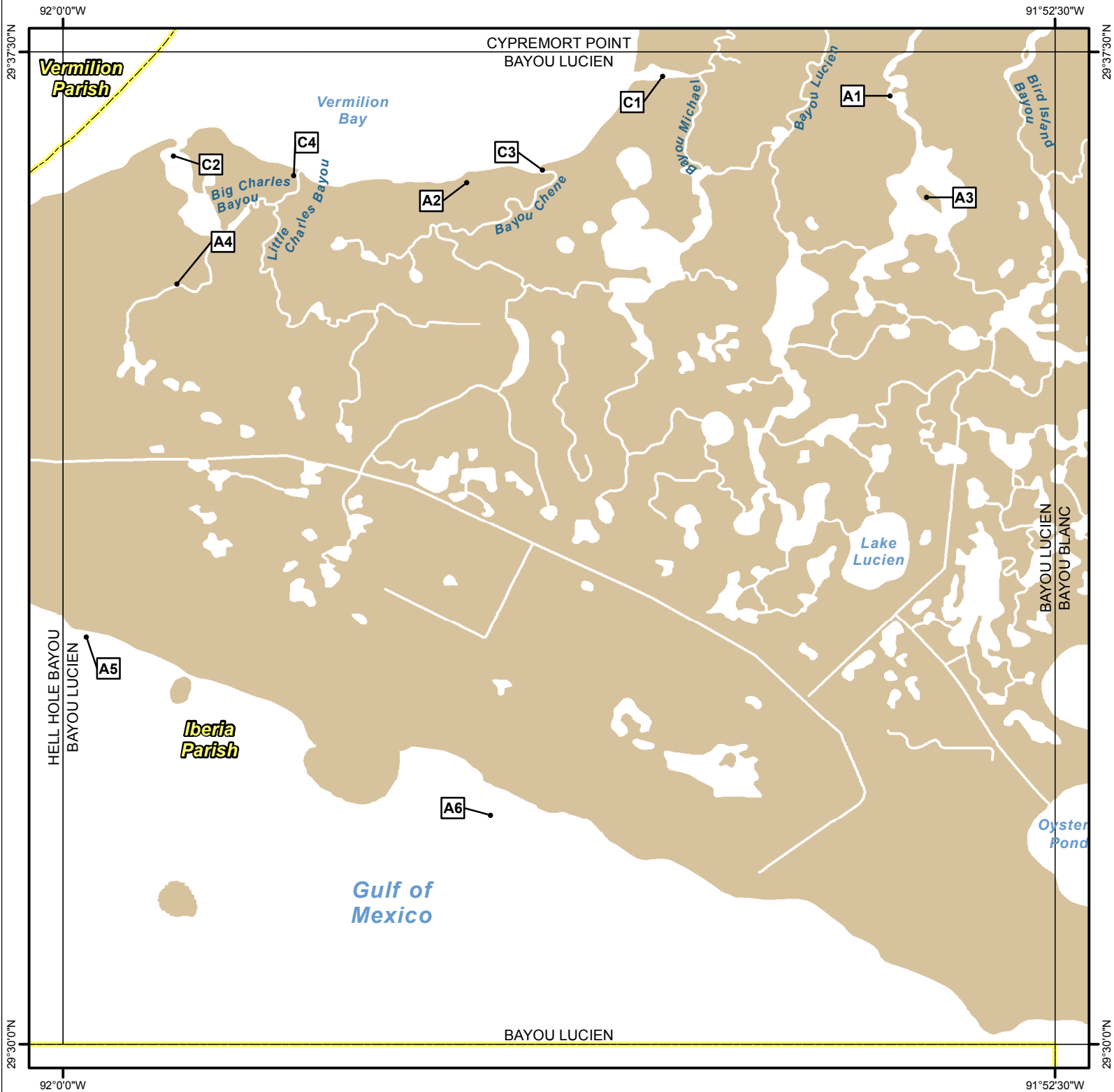
Site Information: B1		Location Information	
Name: Portage Lake Primary Inlet	Parish: Vermilion	Quad Name: Hell Hole Bayou	
Priority: B	Quad Number: 2909232		
Site Alias: None	Mile Marker:		
	Managed (Y/N)?: Y - Wildlife Refuge		
	Latitude: 29° 36' 47.325" N		
Site Description: State Area part of State Wildlife Refuge	Longitude: 92° 05' 59.802" W		
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat / Paul J. Rainey Sanctuary	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Rebecca Broussard		State Submitter: DEQ/Vermilion Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies Concur with point	

Site Information: B2		Location Information	
Name: Canal		Parish:	Vermilion
		Quad Name:	Hell Hole Bayou
Priority: B		Quad Number:	2909232
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: Primary Inlet		Latitude:	29° 35' 37.552" N
		Longitude:	92° 04' 14.608" W
Response Considerations			
Site Strategy: Exclusion Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Currents <1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Paul Rainey Sanctuary	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: National Audubon Society		Special Contact:	
Site Statistics			
Submitted By Rebecca Broussard		State Submitter: DEQ/Vermilion Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies Concur with point	

Site Information: C1		Location Information	
Name: Shell Reefs SW Pass / Porpoise Point		Parish:	Iberia
		Quad Name:	Hell Hole Bayou
Priority:	C	Quad Number:	2909232
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: Sensitive Habitat		Latitude:	29° 35' 36.434" N
		Longitude:	92° 00' 31.330" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat - many small inlets to refuge marshes	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C2		Location Information	
Name: Lighthouse Point		Parish:	Iberia
		Quad Name:	Hell Hole Bayou
Priority: C		Quad Number:	2909232
Site Alias: None		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Area	
Site Description: Sensitive Habitat		Latitude:	29° 34' 58.154" N
		Longitude:	92° 01' 33.766" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
		Sensitive habitat - many small inlets to refuge marshes	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By: Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

BAYOU LUCIEN QUAD

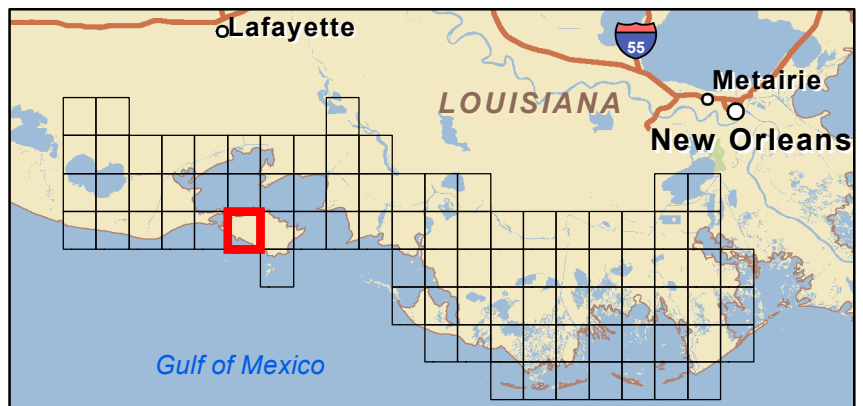


Legend

- GRP Sites
- Quad Boundaries
- Parish Boundaries

0 0.5 1 2 3 Kilometers

0 0.5 1 2 3 Miles



Site Information: A1		Location Information	
Name: Small Bird Island in Platte Bayou	Parish:	Iberia	
	Quad Name:	Bayou Lucien	
Priority: A	Quad Number:	2909125	
Site Alias: N/A Site Description: State Refuge part of Marsh Island Refuge	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 37' 10.229" N	
	Longitude:	91° 53' 44.794" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves <1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Bird nesting island - gulls, skimmers, and terns	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A2		Location Information	
Name: West Bayou Chene / Multiple Tidal Inlets	Parish:	Iberia	
	Quad Name:	Bayou Lucien	
Priority: A	Quad Number:	2909125	
Site Alias: N/A Site Description: State Refuge part of Marsh Island Refuge	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 36' 30.717" N	
	Longitude:	91° 56' 56.736" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish/LDEQ	
Submit Date: 2013.04.16		State Comments:	

Site Information: A3		Location Information	
Name: Large Bird Island in Platte Bayou		Parish:	Iberia
		Quad Name:	Bayou Lucien
Priority:	A	Quad Number:	2909125
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 36' 24.084" N
Site Description: State Refuge part of Marsh Island Refuge		Longitude:	91° 53' 28.167" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves <1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Bird nesting island - gulls, skimmers, and terns	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A4		Location Information	
Name: Big Charles Bayou		Parish:	Iberia
		Quad Name:	Bayou Lucien
Priority:	A	Quad Number:	2909125
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?: Y - Wildlife Refuge	
		Latitude:	29° 35' 45.030" N
Site Description: State Refuge part of Marsh Island Refuge		Longitude:	91° 59' 08.389" W
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes			
		Wading bird nesting colony	
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A5		Location Information	
Name: Sandy Beach		Parish:	Iberia
		Quad Name:	Bayou Lucien
Priority: A		Quad Number:	2909125
Site Alias: None		Mile Marker:	
		Managed (Y/N)?:	Y - Wildlife Area
Site Description: Sensitive Habitat		Latitude:	29° 33' 04.755" N
		Longitude:	91° 59' 49.524" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code: 10A/5/2A		Resources At Risk Comments:	
ESI Description 10A: Salt- and brackish-water marshes / 5: Mixed sand and gravel beaches / 2A: Exposed Wave-cut Platform in clay			
		Wilson Plover	
Contact Information			
Contact: N/A		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: A6		Location Information	
Name: Exposed shell reefs / Island at GOM		Parish:	Iberia
		Quad Name:	Bayou Lucien
Priority:	A	Quad Number:	2909125
Site Alias: N/A		Mile Marker:	
		Managed (Y/N)?:	N
Site Description: State Refuge just south of Marsh Island Refuge shoreline		Latitude:	29° 31' 43.838" N
		Longitude:	91° 56' 46.135" W
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Straight Coastline			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: Not Applicable			
Resources At Risk			
ESI Code:		Resources At Risk Comments:	
ESI Description			
Bird loafing area			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By LDWF-DJ Garland and Cassidy Lejeune		State Submitter: LDWF/Lafourche Parish	
Submit Date: 2013.04.16		State Comments:	

Site Information: C1		Location Information	
Name: Entrance to Bayou Michael from Vermilion Bay	Parish:	Iberia	
	Quad Name:	Bayou Lucien	
Priority: C	Quad Number:	2909125	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 37' 19.180" N	
Site Description: State Refuge part of Marsh Island Refuge	Longitude:	91° 55' 28.007" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat / Marshland and fisheries	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C2		Location Information	
Name: Entrance to Big Charles Bayou from Vermilion Bay	Parish:	Iberia	
	Quad Name:	Bayou Lucien	
Priority: C	Quad Number:	2909125	
Site Alias: None	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 36' 42.903" N	
Site Description: State Refuge part of Marsh Island Refuge	Longitude:	91° 59' 10.002" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: 1000-1500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat / Marshland and fisheries	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C3		Location Information	
Name: Entrance to Bayou Chene from Vermilion Bay	Parish:	Iberia	
	Quad Name:	Bayou Lucien	
Priority: C	Quad Number:	2909125	
Site Alias: None Site Description: State Refuge part of Marsh Island Refuge	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 36' 36.487" N	
	Longitude:	91° 56' 22.591" W	
Response Considerations			
Site Strategy: Deflection Booming		Site Strategy Comments:	
Site Waterbody Type: Narrow Tidal Channel			
Current Wave Action: Current >1 kt			
Waterbody Opening: < 500 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat / Marshland and fisheries	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Site Information: C4		Location Information	
Name: Entrance to Little Charles Bayou from Vermilion Bay	Parish:	Iberia	
	Quad Name:	Bayou Lucien	
Priority: C	Quad Number:	2909125	
Site Alias: None Site Description: State Refuge part of Marsh Island Refuge	Mile Marker:		
	Managed (Y/N)?:	Y - Wildlife Refuge	
	Latitude:	29° 36' 33.884" N	
	Longitude:	91° 58' 15.252" W	
Response Considerations			
Site Strategy: Deferred Action		Site Strategy Comments:	
Site Waterbody Type: Entrance to Bays, etc			
Current Wave Action: Breaking Waves >1.5 ft			
Waterbody Opening: 500-1000 ft			
Resources At Risk			
ESI Code: 10A		Resources At Risk Comments: Sensitive habitat / Marshland and fisheries	
ESI Description 10A: Salt- and brackish-water marshes			
Contact Information			
Contact: LDWF		Special Contact:	
Site Statistics			
Submitted By Prescott Marshall		State Submitter: DEQ/Iberia Parish/LDWF/DNR/CPRA	
Submit Date: 2012.09.12		State Comments: Agencies concur with point	

Appendix A: GRP Content Contributors

Captain Peter Gautier	Federal On-Scene Coordinator
Captain David McClellan	Federal On-Scene Coordinator
Captain Jonathan Burton	Federal On-Scene Coordinator
Brian Wynn	Louisiana Oil Spill Coordinators Office
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Chris Boudreaux	Lafourche Parish OEP
Duval Arthur	Saint Mary Parish OEP
Earl Eues	Terrebonne Parish OEP
Prescott Marshall	Iberia Parish OEP
Todd Folse	Coastal Protection and Restoration Authority
Ann Howard	Coastal Protection and Restoration Authority
Chip McGimsey	State Historic Preservation Officer
Kyle Jellison	National Oceanic and Atmospheric Administration
Jeff Dauzat	Louisiana Department of Environmental Quality
Laura Carver	Louisiana Department of Wildlife and Fisheries
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LCDR Keith Smith	U.S. Coast Guard
LCDR Chance Greene	U.S. Coast Guard
LCDR Lushan Hannah	U.S. Coast Guard
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Tanner Kneese	The Response Group
Fernando Terceros	The Response Group
Sarah Clavo	The Response Group
Terry Posey	Oil Mop Environmental Services
Ronald Johnson	Oil Mop Environmental Services
Cliff Collins	Oil Mop Environmental Services

Appendix B: GRP Comments/Corrections/Suggestions

If you have any questions regarding this document or find any errors, please notify the following agency:

U.S. Coast Guard

MSU Morgan City

Phone number: (985) 380-5330

Internet/E-mail Address: brian.k.black@uscg.mil

Address: Commander
U.S. Coast Guard
800 David Drive
Morgan City, LA 70380
Attn: Brian Black

Comments/Corrections/Suggestions Form

Directions: Fill in your name, address, agency, and phone number. Fill in the blanks regarding the location of information in the plan being commented on. Make Comments in space provided. Add extra sheets as necessary.

Name:	_____	Title:	_____	Agency:	_____
Address:	_____				
City:	_____	State/Province:	___	Zip/Postal Code:	_____
Phone:	(____)	E-Mail:	_____		

Site:	_____	Page:	_____
Location on page (Chapter, section, paragraph) (e.g. 2.1, paragraph 3):			

Comments:	_____

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Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix R Area Response Resource Inventory



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Southeast Louisiana Area Contingency Plan

Appendix T
MOUs/MOAs

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Termination.....	5
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MOU/MOA Policy

Introduction

A MOU is a document that describes very broad concepts of mutual understanding, goals and plans shared by the parties. In contrast, a MOA is a document describing in detail the specific responsibilities of, and actions to be taken by, each of the parties so that their goals may be accomplished. A MOA may also indicate the goals of the parties, to help explain their actions and responsibilities.

Every MOU/MOA that the Coast Guard is a party to must be consistent with the Coast Guard mission and be authorized by federal law, regulations and funding constraints. Additionally, the existence of a MOU or MOA does not eliminate or diminish the need for additional contracts, documents, or agreements to execute the activities contemplated by the parties. An MOU/MOA cannot be used as the sole authority or means to acquire or procure goods or services, exchange funds or property, or transfer or assign personnel. The originating offices shall ensure that all interested program offices and the servicing legal office have reviewed the MOU/MOA.

MOU's/MOA's that involve the Coast Guard must have an appropriately designated approving official that has the authority to commit the Coast Guard to the agreement.

For additional information regarding Coast Guard MOU/MOA guidance please review COMDTINST 5216.18.

MOU/MOA Contents

Every MOU/MOA should include the following basic information:

Parties

The parties to be bound by the agreement must be identified.

Authority.

The legal authority for the agreement must be cited. Federal law, applicable DOT Orders, Commandant Instructions or other directives are referenced.

Purpose

The purpose or reason for entering the agreement must be stated.

Responsibilities

A description of the duties and responsibilities of the parties must be provided. The description should be as specific and detailed as necessary. Extreme details may be provided in an appendix rather than the body of the MOU/MOA.

Reporting and Documentation

The MOU/MOA must specify whether follow-up reports or documentation of actions taken are required and state how often and to whom they are to be submitted.

Points of Contact

Points of Contact for all parties are provided, including names, office symbols, addresses and phone numbers. Fax numbers, e-mail and Internet addresses should also be provided if available.

Modification

A provision stating how to modify or amend the agreement is included. Modifications can be formal (written) or informal (oral). They can be approved by the Points of Contact, by the signatories, or other appropriate individuals. While it is often appropriate for those at the working level to make modifications, either orally or in writing, modifications that change central provisions of the agreement should normally be made in writing and agreed to by the individuals who originally approved the MOU/MOA or their successors.

Effective Date

The date the MOU/MOA becomes effective must be stated. This may be a specified date after the MOU/MOA is signed by all parties or it may be the date the last party signs the agreement.

Termination

The MOU/MOA must contain several provisions regarding termination. The document will indicate that it will terminate on a certain date, upon the accomplishment of its purpose, or upon agreement of the parties. The MOU/MOA will also contain a provision indicating whether the duration of the agreement may be extended and, if so, the extension mechanism (e.g. by written agreement of the parties). Finally, the agreement will indicate whether a party may terminate the agreement early (usually by written notice to the other parties).

Current MOU's/MOA's

This appendix contains the following Memorandum of Understanding/Agreement:

- ☐ U.S. Coast Guard and EPA Region VI Memorandum of Agreement
- ☐ U.S. Coast Guard and the Bureau of Safety and Environmental Enforcement Memorandum of Agreement
- ☐ Endangered Species Act Memorandum of Agreement

**MEMORANDUM OF AGREEMENT
BETWEEN
U. S. ENVIRONMENTAL PROTECTION AGENCY, REGION 6
AND
U. S. COAST GUARD
EIGHTH COAST GUARD DISTRICT, NEW ORLEANS, LA
REGARDING
RESPONSE BOUNDARIES FOR OIL AND HAZARDOUS SUBSTANCES
POLLUTION INCIDENTS AND
FEDERAL ON SCENE COORDINATOR RESPONSIBILITIES**

Purpose

The purpose of this document is to delineate the Region 6 Inland and Coastal Zone geographical boundaries establishing responsibility for the pre-designation of On-Scene Coordinators (OSCs) for pollution response pursuant to the National Oil and Hazardous Substances Contingency Plan (NCP), Title 40, Code of Federal Regulations, Part 300.120 (40 CFR § 300.120).

Definitions

The following definitions will apply to this Memorandum of Agreement (MOA).

Commercial Vessels. Commercial vessels are vessels in commercial service that conduct any type of trade or business involving the transportation of goods or individuals, except combatant vessels. This includes tank vessels (ships and barges); freight vessels and barges; commercial fishing vessels; passenger vessels; and towing vessels. This definition excludes recreational vessels and permanently moored structures which, while they may appear to be vessels are not inspected by the Coast Guard, i.e. barges moored at facilities effectively used as part of a non-transportation-related facility complex.

Marine Transportation-Related Facility (MTR Facility). Any onshore facility or portion of a facility complex, as defined in 40 CFR 112.2, including piping and any structure used or intended to be used to transfer oil to or from a vessel. The marine transportation-related portion of the complex extends from the facility oil transfer system's connection with the vessel to the first valve inside the secondary containment surrounding tanks in the non-transportation-related portion of the facility or, in the absence of secondary containment, to the valve or manifold adjacent to the tanks comprising the non-transportation-related portion of the facility, unless another location has been agreed to by the U.S. Coast Guard (USCG) Captain of the Port (COTP) and the appropriate Federal official. (33 C.F.R. § 154.1020)

Inland Zone Boundary Designation

The U.S. Environmental Protection Agency (EPA) Region 6, provides the pre-designated OSC for pollution response in the Inland Zone. All discharges or releases, or a substantial threat of such discharges or releases of oil or hazardous substances originating within the Inland Zone are the responsibility of the EPA. Included are discharges and releases from unknown sources or those classified as "mystery spills." EPA Region 6 responsibilities for the Mississippi and Pearl Rivers are shared with EPA Region 4 as described in a Memorandum of Understanding between the two regions.

The EPA OSC is the pre-designated OSC for all areas or pollution incidents within Region 6 that are not specifically addressed by the following Coastal Zone boundary designation descriptions, the general response provisions delineated within this document, or the EPA Region 4 MOU.

Coastal Zone Boundary Designations

The cognizant USCG COTP is the pre-designated OSC for pollution response in the Coastal Zone. All discharges or releases, or a substantial threat of such discharges or releases of oil or hazardous substances originating within the Coastal Zone are the responsibility of the USCG OSC. Included are discharges and releases from unknown sources or those classified as "mystery spills."

The Coastal Zone description for the USCG OSCs located within Federal Region 6 includes everything coastal of a line:

- Commencing at the intersection of U.S. 90 and the Mississippi state line, westerly along U.S. 90. Continuing along U.S. 90 southwesterly to the intersection with I-510. Then south on I-510 and primary State Road 47 to the levee on the Left Descending Bank (LDB) of the Mississippi River. Then continuing upriver on the LDB to the U.S. 90 Highway Bridge (Crescent City Connection). Then across the U.S. 90 bridge to the levee on the Right Descending Bank (RDB) of the Mississippi River. Then upriver on the RDB to the Harvey Locks on the Gulf Intracoastal Waterway (GIWW).
- Then south and westerly along the GIWW to Morgan City, Louisiana including the Atchafalaya River Basin from the East Atchafalaya Basin Protection Levee north to its intersection Highway 190. Then west to Krotz Springs, Louisiana. Then south following the levee along the right descending bank of the main channel of the Atchafalaya until it ends at Lake La Rose. Then south westerly until the West Atchafalaya Basin Protection Levee at Catahoula, Louisiana, then south to Morgan City.

- Continuing westerly from the junction of the GIWW and the Atchafalya River at Morgan City to the Calcasieu River, into and including Sabine Lake, and the Neches River to its intersection with I-10 in Beaumont, Texas. Then along the GIWW towards Port Arthur, Texas including Taylors Bayou south of Highway 73. From Port Arthur, Texas, along the GIWW to, and including, East Bay, Galveston Bay, Trinity Bay, Double Bayou to Eagle Ferry Road, Clear Lake including its tributaries North to Highway 528, West to Highway 270, South to Highway 518, Dickinson Bay to Highway 3, Moses Lake, Swan Lake, Jones Lake, and the Houston Ship Channel, to the turning basin in Houston, Texas. The Houston Ship Channel includes: Buffalo Bayou to Highway 59, Brays Bayou to the Broadway Street Bridge, Sims Bayou to Highway 225, Vince Bayou to North Ritchie Street, Cotton Patch Bayou to the first county outfall, Hunting Bayou to I-10, Greens Bayou to I-10, Boggy Bayou to Highway 225, Tucker Bayou to Old Battleground Road, Carpenter's Bayou to Sheldon Road, San Jacinto River to I-10, Spring Bayou, Goose Creek to Highway 146, and Cedar Bayou to Spur 55. Continuing at the junction of West Bay and the GIWW in Galveston, Texas, westerly along the GIWW to the Port of Freeport, Texas, including: Chocolate Bay, the Old Brazos River, and the New Brazos River up to the Missouri-Pacific Railroad Bridge in Brazoria, Texas.
- Then southerly along the GIWW through and including: the Colorado River to 28-52N Latitude, Lavaca River to 28-50N Latitude, Chocolate Bay to 96-40W Longitude, Cox Bay, Keller Bay, Lavaca Bay to 96-40W Longitude, Turtle Bay, Culver Cut (West Branch Colorado River to 28-42N Latitude and entire Middle Branch), Robinsons Lake, Crab Lake, Mad Island Lake, Salt Lake, Carancahua Bay, Tres Palacios Bay to 28-47N Latitude, Oyster Lake, Blind Bayou, Powderhorn Lake, La Salle Bayou, Broad Bayou, Boggy Bayou, and Matagorda Bay.
- Continuing southerly through San Antonio Bay including: Corey Bay, Victoria Barge Canal, Guadalupe River to 28-30N Latitude, Goff Bayou, Hog Bayou, Green Lake, Buffalo Lake, Alligator Slide Lake, Mission Lake, Guadalupe Bay, Hynes Bay, Twin Lake, Mustang Lake, and Jones Lake.
- Then, continuing through Mesquite Bay including: Dunham Bay, Long Lake, and Sundown Bay.
- Continuing southerly through St. Charles Bay including: Burgentine Creek to 28-17N Latitude, Salt Creek to 28-16N Latitude, and Cavaso Creek to 97-01W Longitude.

- Then, through Copano Bay including: Mission River, Mission Bay, Chiltipin Creek to 97-18W Longitude, Aransas River to 97-18W Longitude, Swan Lake, Copano Creek, Port Bay, and Salt Lake. Then southerly including: Little Bay, Aransas Bay, Conn Brown Harbor, Redfish Cove, Redfish Bay, LaQuinta Channel, Nueces River to U.S. 77, Rincon Industrial Channel, Rincon Bayou, Nueces Bay, Tule Lake, Corpus Christi Inner Harbor, Oso Creek, Oso Bay, and Corpus Christi Bay.
- Continuing southerly, through and including: Packery Channel, Cayo Del Grullo, Cayo Del Infiernillo, Laguna De Los Olmos, Laguna Salada, Petrolina Creek, Comitas Lake, Alazan Bay, Baffin Bay, Port Mansfield Harbor, Four Mile Slough, Arroyo Colorado River to 26-12N Latitude, Callo Atascosa, Arroyo Colorado Cutoff, Laguna Vista Cove, South Bay, Vadia Ancha, Bahia Grande, San Martin Lake, and the Brownsville Ship Channel.
- Where the Coastal Area is defined by a body of water such as a bay or lake, it includes small bays or lakes encompassed therein, but does not include waters tributary thereto unless specifically named.

The Coastal Zone also includes the Lower Mississippi River, commencing from mile marker (MM) 303 south to the Coastal boundary at New Orleans (down-river of which will be considered USCG jurisdiction entirely), encompassing the area riverward between the levee on the RDB and the LDB, and including Lake Pontchartrain.

General Response Provisions

These provisions apply to all EPA OSCs and USCG COTP/OSCs serving Federal Region 6.

The USCG, through the cognizant COTP and the inland zone pre-designated EPA OSC will assist each other consistent with agency responsibilities and authorities.

Such assistance will be provided based on formal notification and mutual consent that the assistance is desirable and necessary to respond to a release or threat of a release of oil or hazardous substances that poses imminent and substantial endangerment to public health or the environment. Notification will be provided by the COTP to the EPA OSC, or by the EPA OSC to the COTP, whenever a spill is discovered that appears to warrant the provision of mutual assistance. When it is mutually agreed that the provision of such assistance is beneficial, an OSC from either organization may serve as the OSC for that incident, serve as the Federal On-Scene Coordinator Representative (FOSCR) for the pre-designated OSC, or perform OSC duties only until such time as the pre-designated OSC may take over the response action.

The pre-designated OSC will be advised of the response actions taken by the assisting OSC or FOSCR via periodic verbal reports and pollution reports (POLREPS) as appropriate.

The EPA Region 6 predesignates the COTP as the OSC in response to an incident in the inland zone when it involves; a commercial vessel, or an oil or hazardous material transfer operation on the marine transportation-related portion of a MTR facility. The incident must result in an actual discharge or threatened discharge of oil or hazardous substances into or on navigable waters of the United States, its shoreline or the riverbank within the USCG Eighth District's Area of Responsibility in EPA Region 6 as defined in 33 CFR 3.40-1. The COTP in each Zone shall provide annually a list of fixed MTR facilities located in the inland zone of their area of responsibility to the Co-Chair of the RRT. The EPA shall be advised of any response actions performed by the COTP within the inland zone via verbal notification and Pollution Reports (POLREPS). When the COTP is not notified via National Response Center, EPA shall notify the COTP for all commercial vessel and MTR spills or releases in the inland zone.

In addition, EPA Region 6 will notify the Eighth Coast Guard District of any Regional Contingency Plan (RCP) meetings for the participation of Coast Guard units in the regional contingency planning process.

The proposed boundary lines do not preclude mutual assistance between the two agencies. In addition to 40 CFR 300.135(b), in this Federal region, the EPA and the USCG will carry out agency and specific pollution response responsibilities under the NCP, the RCP, and the applicable Area Contingency Plan, and will assist each other to the fullest extent possible to prevent or minimize the impacts of an actual discharge or release, or a substantial threat of such a discharge or release, of an oil or hazardous substance into or on the waters of the United States or adjacent shorelines where each respective agency has jurisdiction.

When spills originate in the inland or coastal zones that appear to threaten the adjoining zone, the OSCs responsible for both zones will coordinate to determine the most effective response strategy. Prime consideration shall be given to the area vulnerable to the greatest threat, in determining which agency should provide the OSC. Options available for OSC assignment are as stated previously in this section.

This MOA will typically serve as the basis for response actions when the Environmental Protection Agency and/or the United States Coast Guard are activated as Emergency Support Function #10 (ESF #10) in support of the National Response Framework (NRF). However, when responding as ESF #10 under the NRF some procedures in the NCP may be streamlined or may not apply. Therefore, this MOA may be modified on an incident-specific basis by mutual agreement between the Environmental Protection Agency and United States Coast Guard during periods of activation as ESF #10.

Other Provisions.

Nothing in this MOA is intended to conflict with current law or regulation or the directives of the USCG or the EPA. If a term of this agreement is inconsistent with such authority, then that term shall be invalid, but the remaining terms and conditions of this agreement shall remain in full force and effect.

Amendments and Effective Date

This agreement will be subject to review and amendment coincident with each periodic review of the Regional, Area, and other applicable contingency plans and any other time at the request of any of the parties. The agreement will become effective on the date both parties have signed the agreement. It will remain in effect until modified or terminated by mutual agreement of the parties.

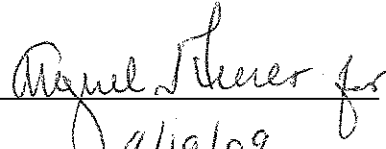
Points of contact for the coordination, support, and implementation of this agreement are as follows:

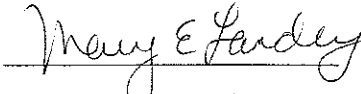
- EPA Region 6 – Chief, Prevention and Response Branch, Dallas, TX at (214) 665-2270 ;
- Eighth Coast Guard District – Chief, Response Management Branch, New Orleans, LA at (504) 671-2231.

Regional and Area Contingency Plans of the signatory agencies will be amended to reflect the geographical boundaries established herein. This MOA supersedes other MOAs and/or MOUs previously enacted concerning the Federal predesignated OSC boundaries for purposes of pollution response within Federal Region 6. This document is effective upon the date of each respective signatory official from EPA Region 6 or the Eighth Coast Guard District.

Lawrence E. Starfield
Acting Regional Administrator
U. S. Environmental Protection Agency
Region 6 (6XA)
1445 Ross Avenue
Dallas, TX 75020-2733

Mary E. Landry
Rear Admiral, U. S. Coast Guard
Commander
Eighth Coast Guard District
500 Poydras Street
New Orleans, LA 70130-3396

Signature: 
Date: 8/19/09

Signature: 
Date: SEP 4 2009

Appendix 1

Delineation of Area Committees

USCG District VIII Captain of the Port Areas

The following are the Coastal Zone COTP descriptions for each respective USCG OSC that is located within Federal Region 6:

Sector Lower Mississippi

See General Response Provisions

Sector New Orleans, LA

USCG COTP, New Orleans, LA will be the pre-designated OSC in the following areas within Region 6. When a roadway is used to delineate a boundary, that boundary shall be to, but shall not include, the roadway.

Eastern boundary commencing at the intersection of U.S. 90 and the Mississippi state line, 30-14.34N 089-36.88W, westerly along U.S. 90. Continuing along U.S. 90 southwesterly to the intersection with I-510. Then south on I-510 and primary State Road 47 to the levee on the LDB of the Mississippi River. Then continuing upriver on the LDB to the U.S. 90 Highway Bridge (Crescent City Connection). Then across the U.S. 90 bridge to the levee on the RDB of the Mississippi River. Then upriver on the RDB to the Harvey Locks on the GIWW to MM 44.2, 29-15.54N 089-57.15W.

The Coastal Zone also includes the Lower Mississippi River, commencing from MM 303 south to the Coastal boundary at New Orleans (down-river of which will be considered USCG jurisdiction entirely), encompassing the area riverward between the levee on the RDB and the LDB, and including the New Orleans Industrial Canal and Lake Pontchartrain. Also included are the Atchafalaya River from the Texas and the Pacific Railroad Bridge at Melville, Louisiana, south to the intersection of boundaries with Captain of the Port Zone Morgan City.

Where the Coastal Zone is defined by a body of water such as a bay or lake, it includes small bays or lakes encompassed therein, but does not include waters tributary thereto unless specifically named.

Marine Safety Unit Morgan City, LA

U.S. Coast Guard COTP Morgan City, LA will be the pre-designated OSC in the following areas within Region 6. When a roadway is used to delineate a boundary, that boundary shall be to, but shall not include, the roadway.

From MM 20, 29-41.04N 090-11.38W, on the GIWW, then south and westerly along the GIWW to Morgan City, Louisiana including the Atchafalaya River Basin from the East Atchafalaya Basin Protection Levee north to its intersection Highway 190 then west to Krotz Springs, Louisiana, then south following the levee along the right descending bank of the main channel of the Atchafalaya until it ends at Lake La Rose, then south westerly until the West Atchafalaya Basin Protection Levee at Catahoula, Louisiana, then south to Morgan City. Then continuing westerly from the junction of the GIWW and the Atchafalaya River at Morgan City to MM 190.5 GIWW - 29-55.16N 092-36.9W.

Where the Coastal Zone is defined by a body of water such as a bay or lake, it includes small bays or lakes encompassed therein, but does not include waters tributary thereto unless specifically named.

Marine Safety Unit Port Arthur, TX

USCG COTP Port Arthur, TX will be the pre-designated OSC in the following areas within Region 6. When a roadway is used to delineate a boundary, that boundary shall be to, but shall not include, the roadway.

From MM 190.5 GIWW - 29-55.16N 092-36.9W continuing westerly from the junction of the GIWW and the Atchafalaya River at Morgan City to the Calcasieu River, into and including Sabine Lake, and the Neches River to its intersection with I-10 in Beaumont, Texas. Then along the GIWW towards Port Arthur, Texas including Taylors Bayou south of Highway 73. From Port Arthur, Texas along the GIWW to MM 316.5 GIWW - 29-36.67N 094-21.27W.

Where the Coastal Zone is defined by a body of water such as a bay or lake, it includes small bays or lakes encompassed therein, but does not include waters tributary thereto unless specifically named.

Sector Houston-Galveston, TX

USCG COTP Houston-Galveston, TX will be the pre-designated OSC in the following areas within Region 6. When a roadway is used to delineate a boundary, that boundary shall be to, but shall not include, the roadway.

From 316.5 GIWW - 29-36.67N 094-21.27W, including, East Bay, Galveston Bay, Clear Lake, Dickinson Bay, Moses Lake, Swan Lake, Jones Lake, Trinity Bay, and the Houston Ship Channel includes: Buffalo Bayou to Highway 59,

Brays Bayou to the Broadway Street Bridge, Sims Bayou to Highway 225, Vince Bayou to North Ritchie Street, Hunting Bayou to I-10, Greens Bayou to I-10, Boggy Bayou to Highway 225, Tucker Bayou to Old Battleground road, Carpenter's Bayou to Sheldon Road, San Jacinto River to I-10, Spring Bayou, Goose Creek to Highway 146, and Cedar Bayou to Spur 55. Continuing at the junction of West Bay and the GIWW in Galveston, Texas, westerly along the GIWW to the Port of Freeport, Texas, including Chocolate Bay, the Old Brazos River and the New Brazos River up to the Missouri-Pacific Railroad Bridge in Brazoria, Texas. Then southerly along the GIWW to MM 441.2, West Branch Colorado River to 28-42N Latitude and entire Middle Branch.

Where the Coastal Zone is defined by a body of water such as a bay or lake, it includes small bays or lakes encompassed therein, but does not include waters tributary thereto unless specifically named.

Sector Corpus Christi, TX

USCG COTP Corpus Christi, TX will be the pre-designated OSC in the following areas within Region 6. When a roadway is used to delineate a boundary, that boundary shall be to, but shall not include, the roadway.

From the GIWW to MM 441.2, West Branch of the Colorado River to 28-52N Latitude, Chocolate Bay to 96-40W Longitude, Cox Bay, Keller Bay, Lavaca Bay to 96-40W Longitude, Turtle Bay, Culver Cut (West Branch Colorado River to 28-42N Latitude and entire Middle Branch), Robinsons Lake, Crab Lake, Mad Island Lake, Salt Lake, Carancahua Bay, Tres Palacios Bay to 28-47N Latitude, Oyster Lake, Blind Bayou, Powderhorn Lake, La Salle Bayou, Broad Bayou, Boggy Bayou, and Matagorda Bay.

- Continuing south through San Antonio Bay including: Corey Bay, Victoria Barge Canal, Guadalupe River to 28-30N Latitude, Goff Bayou, Hog Bayou, Green Lake, Buffalo Lake, Alligator Slide Lake, Mission Lake, Guadalupe Bay, Hynes Bay, Twin Lake, Mustang Lake, and Jones Lake.
- Then, continuing through Mesquite Bay including: Dunham Bay, Long Lake, and Sundown Bay.
- Continuing southerly through St. Charles Bay including: Burgentine Creek to 28-17N Latitude, Salt Creek to 28-16N Latitude, and Cavaso Creek to 97-01W Longitude.
- Then, through Copano Bay including: Mission River, Mission Bay, Chiltipin Creek to 97-18W Longitude, Aransas River to 97-18W Longitude, Swan Lake, Copano Creek, Port Bay, and Salt Lake. Then southerly including:

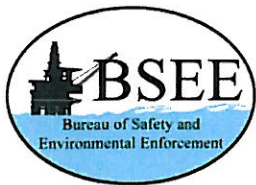
Little Bay, Aransas Bay, Conn Brown Harbor, Redfish Cove, Redfish Bay, LaQuinta Channel, Nueces River to U.S. 77, Rincon Industrial Channel, Rincon Bayou, Nueces Bay, Tule Lake, Corpus Christi Inner Harbor, Oso Creek, Oso Bay, and Corpus Christi Bay.

- Continuing south, through and including: Packery Channel, Cayo Del Grullo, Cayo Del Infiernillo, Laguna De Los Olmos, Laguna Salada, Petrolina Creek, Comitas Lake, Alazan Bay, Baffin Bay, Port Mansfield Harbor, Four Mile Slough, Arroyo Colorado River to 26-12N Latitude, Callo Atascosa, Arroyo Colorado Cutoff, Laguna Vista Cove, South Bay, Vadia Ancha, Bahia Grande, San Martin Lake, and the Brownsville Ship Channel to the U.S Border at 25-59.23N 097-08.75W.

EPA Inland Geographic Response Planning Areas

Houston / Galveston Area

The EPA FOSC responsible for this area is EPA FOSC who is permanently outposted in Houston, TX. The Houston / Galveston Geographic Response Planning Area coincides with the boundaries for the Texas Council on Environmental Quality Region 12, and includes the counties of Walker, Montgomery, Austin, Waller, Harris, Liberty, Colorado, Fort Bend, Chambers, Matagorda, Wharton, Brazoria, and Galveston. The area extends to, but does not include the area contained within the USCG Sector Houston – Galveston COTP area.



**MEMORANDA OF AGREEMENT
BETWEEN THE
BUREAU OF SAFETY AND ENVIRONMENTAL ENFORCEMENT
– U.S. DEPARTMENT OF THE INTERIOR
AND THE
U.S. COAST GUARD – U.S. DEPARTMENT OF HOMELAND SECURITY**

BSEE/USCG MOA: OCS-03

Effective Date: April 3, 2012

SUBJECT: OIL DISCHARGE PLANNING, PREPAREDNESS, AND RESPONSE

A. PURPOSE

The purpose of this Memorandum of Agreement (MOA) is to clarify the roles and responsibilities of the Bureau of Safety and Environmental Enforcement (BSEE) and the U.S. Coast Guard (USCG) for oil discharge research, planning, preparedness, response, and abatement activities for any artificial island, installation, pipeline, or other device permanently or temporarily attached to the seabed seaward of the coastline¹ (hereafter, “facilities” or “offshore facilities”), and certain vessels that may be used for the purpose of responding to discharges or substantial threats of discharges. The facilities and vessels subject to this MOA may include, but are not limited to, mobile offshore drilling units (MODUs), support vessels for subsea containment, and floating production, storage, and offloading (FPSO) (or similar) vessels, located in state and federal waters seaward of the coastline.

This MOA:

- Replaces MMS (BSEE)/USCG MOA OCS-03 (Oil Discharge Planning, Preparedness, and Response), effective 23 May 2007, and
- Updates the following portions of MMS (BSEE)/USCG MOA OCS-01 (Agency Responsibilities), effective 30 September 2004:
 - Section C. 1. (Communications and Contacts), for purposes of this MOA.
 - Section C. 4. (Oil Spill Preparedness and Response Planning), and
 - Section C. 5. (Oil Spill Response)

Implementation of this MOA will be in accordance with the MMS (BSEE)/USCG Memorandum of Understanding (MOU) (interagency consistency in the regulation of the Outer Continental Shelf (OCS), effective 30 September 2004, Section J (Memorandum of Agreements – Development and Implementation). The participating agencies will review their internal procedures and, where appropriate, revise them to accommodate the provisions of this MOA.

¹ Pub. Law 99-272 § 8005(c) (May 22, 1953) as amended, codified 43 USC § 1301 (c); see also, “Memorandum of Understanding Establishing Jurisdictional Responsibilities for Offshore Facilities,” 59 Fed. Reg. 9494 (Feb. 28, 1994).

B. STATUTORY AUTHORITIES

The USCG enters this agreement under the authority of: 14 USC (U.S. Code) §§ 93(a)(20), 141; 43 USC §§ 1347, 1348(a) - the Outer Continental Shelf Lands Act (OCSLA), as amended, 43 USC §§ 1331 *et seq.*; 33 USC § 2712(a)(5)(A) – the Oil Pollution Act of 1990; 33 USC §1321- the Federal Water Pollution Control Act, also known as Section 311 of the Clean Water Act; and Executive Order 12777. Applicable USCG regulations are found under parts of Titles 33 (Navigation and Navigable Waters and 46 (Shipping) of the CFR, as well as under the National Contingency Plan, 40 CFR Part 300.

The BSEE enters into this agreement in accordance with delegated legal authorities including: the Oil Pollution Act of 1990, 33 USC § 1321- the Federal Water Pollution Control Act, also known as Section 311 of the Clean Water Act; Executive Order 12777; Title 30 (Mineral Resources) of the CFR; Mineral Leasing Act of February 25, 1920 (41 Stat. 437), as amended and supplemented (30 USC §§ 181-287); the Mineral Leasing Act for Acquired Lands, as amended (30 USC §§ 351-359); the OCSLA, as amended (43 USC §§ 1331 *et seq.*); and the Clean Air Act (42 USC §§ 7401, *et seq.*).

C. JURISDICTION

The BSEE, within the U.S. Department of the Interior (DOI), is responsible for the development, oversight, and enforcement of safety and environmental standards for offshore energy and mineral operations. Under the OPA, BSEE is responsible for federal oversight of oil discharge planning and preparedness activities for regulated facilities located in both state and federal offshore waters. The geographic boundaries for these activities include the area extending seaward of the coastline, and encompass all offshore waters. These responsibilities include review and approval of Oil Spill Response Plans (OSRP), inspections of offshore oil spill response equipment, and unannounced exercises to test plan holder readiness.

The USCG serves as the pre-designated Federal On-Scene Coordinator (FOSC) for oil and hazardous substance pollution incidents that occur, or have the potential to occur, within the coastal zone of the U.S., as defined in 40 CFR 300. The USCG FOSC must respond to, investigate, and ensure effective and immediate removal action for any oil or hazardous substance release regardless of its source (except hazardous substance releases from Department of Defense facilities). The Coast Guard leads oil spill planning efforts for the coastal zone at the Regional Response Team (RRT) and local Area Committee levels with the whole of community to identify, assess and verify threats (spill potential), risk of harm to waters, shoreline and natural resources, and strategies necessary to mitigate the threats, minimize the risk and respond to and recover from an incident or event should it occur.

In the event of an oil discharge or substantial threat of an oil discharge from an offshore facility seaward of the coastline, BSEE has primary responsibility for monitoring and directing all efforts related to securing the source of the discharge and reestablishing source control. The Coast Guard has primary responsibility for directing and monitoring all response efforts with regard to removal of a discharge, and mitigation or prevention of a substantial threat of a discharge, of oil into or on the navigable waters, adjoining shorelines, the exclusive economic zone or that may affect U.S. natural resources. The Coast Guard will have primary responsibility for recovering oil discharged, and for mitigating adverse impacts from the discharge. While recognizing each agency has separate authorities and responsibilities for preparedness, the USCG and BSEE will coordinate execution of these responsibilities as closely as possible.

D. USCG AND BSEE FUNCTIONS

For purposes of this MOA, the functions of USCG and BSEE with respect to oil discharge and substantial threats of such discharges associated with different types of facilities in state and federal offshore waters are set forth below. This table does not alter either agency's statutory mandates and authorities, nor does it preclude either the USCG or BSEE from participating in activities related to these functions for purposes of coordinating an effective and immediate response.

USCG and BSEE Functions Table

	Planning ¹	Preparedness ²	Response ³	Discharge Abatement ⁴
Fixed ^a	BSEE	BSEE	USCG/BSEE ^(LWC)	BSEE
Floating ^b	BSEE	BSEE	USCG/BSEE ^(LWC)	BSEE/USCG
Co-located Uses ^c	BSEE/USCG	BSEE/USCG	USCG/BSEE ^(LWC)	BSEE/USCG
MODUs ^d	BSEE/USCG	BSEE/USCG	USCG/BSEE ^(LWC)	USCG
FPSOs/FSOs ^e	BSEE/USCG	BSEE/USCG	USCG/BSEE ^(LWC)	USCG
Shuttle Tankers ^f	USCG	USCG	USCG	USCG
Storage Barges ^g	USCG	USCG	USCG	USCG

Legend

¹ Planning – Authority to approve oil spill response plans, after review for compliance with applicable regulations.

² Preparedness – Federal oversight and initiation of unannounced oil spill drills, oil discharge response and subsea containment equipment inspection, and spill management team and oil spill removal organization training monitoring.

³ Response – Includes all action taken to control, contain, and clean up oil discharges.

LWC - Loss of well control.

⁴ Discharge Abatement – A subcategory of “Response” that focuses on actions taken to reduce and/or eliminate the continued discharge of oil. Abatement, as used in this MOA, does not refer to pursuit of judicial relief delegated to the Attorney General under Executive Order 12777.

Definitions

^a Fixed – Fixed Facility; A bottom founded facility permanently or temporarily attached to the seabed or subsoil seaward of the U.S. coastline, including platforms, guyed towers, articulated gravity platforms, or other structures. This definition includes gravel and ice islands and caisson-retained islands used in OCS activities for drilling, production, or both.

^b Floating – Floating Facility; A buoyant facility securely and substantially moored so that it cannot be moved without a special effort. This term includes tension leg platforms, spars, semi-submersibles, and shipshape hulls.

^c Co-located Uses – Simultaneous use of a facility for the purpose for which it was designed as well as another use provided for by regulation.

- ^d MODUs – Mobile offshore drilling units; Vessels capable of engaging in drilling operations for exploring or exploiting subsea oil, gas, or other mineral resources.
- ^e FPSOs/FSOs – Floating, production, storage, offloading (FPSO)/Floating, storage, offloading (FSO) or other similar facilities.
- ^f Shuttle Tankers – Cargo ships designed to carry crude oil in bulk on short trips traveling back and forth between two points.
- ^g Storage barge – Any non-self propelled watercraft that is principally used for storage of bulk cargoes and not principally used for waterborne transportation purposes.

E. AGENCY RESPONSIBILITIES

1. COMMUNICATIONS AND CONTACTS

Agency staff responsible for implementation and maintenance of this MOA and attendant National policy matters are:

- a. Agency staff responsible for implementation and maintenance of this MOA and attendant National policy matters are:
 - 1. BSEE
 - Chief – Oil Spill Response Division
 - Bureau of Safety and Environmental Enforcement
 - 381 Elden Street – HE 3327
 - Herndon, Virginia 20170
 - 2. USCG
 - Chief – Office of Incident Management and Preparedness (CG-533)
 - U.S. Coast Guard Headquarters
 - 2100 2nd Street, S.W.
 - Washington, D.C. 20593
- b. Agency staffs that are responsible for field coordination of oil discharge planning, preparedness, response, and abatement activities are:
 - 1. BSEE Oil Spill Response Division
 - Gulf of Mexico Region Branch (Covers both Gulf of Mexico and Atlantic areas)
 - Supervisor
 - 1201 Elmwood Park Boulevard
 - New Orleans, Louisiana 70123
 - BSEE Oil Spill Response Division
 - Pacific Region Unit
 - Senior Analyst
 - 770 Paseo Camarillo, 2nd Floor – CE 215
 - Camarillo, California 93010

BSEE Oil Spill Response Division
 Alaska Region Unit
 Senior Analyst
 3801 Centerpoint Drive, Suite 500 – AE 500
 Anchorage, Alaska 99503-5820

2. USCG

Eighth Coast Guard District
 District Response Management
 Environmental Specialist and Regional Response Team Coordinator
 500 Poydras Street
 New Orleans, Louisiana 70130-3396

Eleventh Coast Guard District
 Contingency Planning Branch
 Oil and HAZMAT Group Supervisor
 Coast Guard Island, Building 51-1
 Alameda, California 94501-5100

Seventeenth Coast Guard District
 District Response Management
 Juneau Federal Bldg. Room 661
 709 W. 9th St.
 Juneau, Alaska 99802-5517

National Strike Force Coordination Center (NSFCC)
 NSFCC Operations Department
 1461 N. Road St (US 17N)
 Elizabeth City, North Carolina 27909-3241

The participating agencies will identify in writing representatives and contact information for the purposes of keeping each other informed of issues, relevant applications, routine policy determinations, and to coordinate joint activities. For the USCG, the Office of Incident Management and Preparedness (CG-533) is responsible for identifying headquarters and district representatives. For BSEE, the Oil Spill Response Division (OSRD) is responsible for identifying appropriate headquarters and regional representatives.

2. REGIONAL RESPONSE TEAMS (RRT) AND AREA COMMITTEES (AC)

Regional Response Teams (RRT) support FOSCs and are a focal point for interagency contingency planning, providing detailed information on response procedures, priorities, and appropriate countermeasures. Regional Contingency Plans (RCP) are written by RRTs and establish overarching response strategies for their region, such as the use of alternative countermeasures. RRTs are co-chaired by the Environmental Protection Agency (EPA) and USCG.

BSEE will participate in RRTs in Regions that include facilities in their boundaries and, at scheduled RRT meetings will, as appropriate, provide updates on agency activities affecting oil spill research, planning, preparedness, containment, and response, to keep RRT members informed.

Area Committees are a focal point of contingency planning, providing detailed information on response procedures, priorities, and appropriate countermeasures. Area Committee (AC), as provided for by Clean Water Act sections 311(a)(18) and (j)(4), means the entity appointed by the President

consisting of members selected from qualified personnel of federal, state, and local agencies with responsibilities that include preparing an area contingency plan for an area designated by the President. Area Contingency Plans (ACPs) are developed by ACs, which are comprised of personnel from government agencies and industry with pollution responsibilities and capabilities. The committees are chaired by the FOSC from the USCG, who has the lead federal spill response authority for the planning area in the coastal zone. FOSCs that have covered facilities in their area of responsibility shall endeavor to create an offshore subcommittee within their AC.

The BSEE will provide regional staff to serve as Chair for each offshore subcommittee. Staff of the BSEE will, to the maximum extent practicable and subject to the availability of appropriated funds, participate in AC meetings and actively support development and maintenance of portions of the ACP directly related to spills from regulated offshore facilities and ensure increased visibility of Worst Case Discharge (WCD) scenarios for offshore facilities.

Every six months BSEE staff will prepare and submit a report to the USCG, sorted by Captain of the Port (COTP) zone that reflects the WCD volumes for all scenarios in Oil Spill Response Plans (OSRPs). USCG COTPs will rely upon BSEE WCD reports in order to reflect the highest WCD volumes in ACPs and to revise plan response strategies as appropriate.

3. OIL SPILL RESPONSE PLANS

The final rule governing oil spill response plans (OSRPs) and related requirements for facilities located seaward of the coast line, including those located in both state and federal waters, became effective June 23, 1997.² The regulation, 30 CFR Part 254, whose authority is derived from OPA 90 and Executive Order 12777, requires that owners and operators of oil handling, storage, and transportation facilities that are located seaward of the coast line submit spill response plans to BSEE for approval and that they be periodically updated. The OSRPs are reviewed to ensure consistency with the National Contingency Plan (NCP) and local ACPs. This regulation does not cover vessels in navigation, but may include vessels permanently or temporarily attached to the seabed of the OCS. Clarification of BSEE OSRP requirements can be found in applicable Notices to Lessees located on BSEE web sites (www.BSEE.gov).

Digital copies of BSEE-approved regional, sub-regional, and site-specific OSRPs are maintained at the GOM Region Branch, Pacific Region Unit, and Alaska Region Unit offices in New Orleans, Louisiana; Camarillo, California; and Anchorage, Alaska, respectively.

The BSEE will notify and provide the USCG with access to digital copies of OSRPs consistent with established procedures and will incorporate USCG suggested revisions to plans, to the extent practicable. The subset of OSRPs that will prompt USCG notification and review include: a) initial plans for operations in state and/or federal offshore waters; b) plans that have been revised to reflect an increase to the highest volume WCD scenario contained in the plan, or c) plans that have been revised to reflect a decrease in oil spill removal organization and/or response capabilities for the highest volume worst case scenario. BSEE will apply subset review criteria to OSRPs residing within each USCG Captain of the Port area of responsibility.

The BSEE decision making processes may be critically informed by information provided by the USCG based on expertise gained during its role as the legally designated FOSC and approval authority for national response system oil spill contingency plans. The USCG may choose to review select information in OSRPs and provide BSEE with comments on those response plans consistent

² 62 Fed. Reg. 13,996 (March 25, 1997).

with BSEE established procedures and internal review timelines. BSEE will, as determined appropriate by the BSEE reviewer, communicate any USCG comments to the plan submitter and request modification of the plan prior to approval. The Coast Guard will also ensure that the WCD information contained in the OSRPs is consistent with those in the relevant RCPs and ACPs. Notwithstanding the foregoing, nothing in this MOA is intended to alter BSEE's legal authority with respect to review and approval of OSRPs for offshore facilities.

4. NATIONAL PREPAREDNESS FOR RESPONSE EXERCISE PROGRAM (PREP)

The National Preparedness for Response Exercise Program (PREP) was developed to establish a workable exercise program which meets the intent of OPA 90 (Pub. Law 101-380, § 4202 (January 23, 1990), 33 USC 1321 (j)(7) ("Area Drills")). The PREP was developed to provide a mechanism for compliance with the exercise and training requirements, while being economically feasible for the Government and industry to adopt and sustain. The PREP is administered by the USCG; EPA; Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Pipeline Safety (OPS) of the DOT; and BSEE.

The BSEE will designate a representative to serve on the PREP National Schedule Coordinating Committee, which is chaired by the USCG, to assist in development of national triennial exercise schedules; review and modify PREP guidelines, as necessary; and participate in periodic public meetings on the PREP. The representative will also assist the other PREP agencies in reviewing and making recommendations on formal requests to receive exercise credit as proven through documentation on responses to an actual spill event.

5. UNANNOUNCED DRILLS

The goals of interagency drill coordination are to facilitate and coordinate participation in exercises to improve understanding of OSRPs, train toward more efficient spill response, and identify and reduce response planning gaps. Additional goals are to avoid conflicts in Agency activities, prevent duplication of response exercise efforts, and optimize exercise training opportunities for agency personnel.

The BSEE conducts approximately 40 unannounced oil spill response drills annually on offshore facilities. Drills may include a table top component as well as equipment deployment. BSEE region staff will provide the appropriate FOSC reasonable advance notification of scheduled unannounced BSEE-led drills. FOSCs should participate in at least one BSEE-initiated unannounced exercise annually, preferably a complex table top exercise that involves deployment of major response assets.

The USCG FOSC will advise the appropriate OSRD region branch/unit staff two months in advance of USCG-led spill response exercises, drills, or activities involving facilities. Participation in USCG drills and exercises by BSEE staff will be at the discretion of the BSEE OSRD Chief.

6. EQUIPMENT INSPECTIONS

The BSEE jurisdiction includes the inspection of all oil discharge response and subsea containment equipment that is cited in BSEE-approved OSRPs and applications for permits to drill, which will be used in the event of an oil discharge from a BSEE-regulated facility. Inspection is authorized by OCSLA³ and equipment inspections are unannounced and conducted by BSEE in order to verify compliance with 30 CFR 254.43 (a) and (b) (lessee inspection of response equipment and recordkeeping). The inspections encompass areas of equipment availability, operational readiness, equipment maintenance, and recordkeeping. Types of equipment inspected may include but are not

³ 43 USC §§ 1337(p)(4), 1348(b)(3).

limited to, boom, fire boom, skimmers, pumps, hoses, storage tanks, vessels, barges, temporary storage devices, subsea containment and control equipment, dispersant stockpiles, dispersant application equipment, and other equipment listed in approved plans.

The USCG National Strike Force Coordination Center (NSFCC) conducts preparedness assessment visits that entail the inspection of oil spill response equipment within a defined area where a PREP exercise will be held. Inspections occur approximately three months prior to the planned exercise, with inspection planning taking place approximately six months prior to the exercise.

Each agency will provide reasonable advance notification of planned equipment inspections to attempt, to the greatest extent possible, to conduct joint inspections of identical oil spill response resources.

In the event equipment inspections cannot be coordinated, each agency will conduct scheduled and unannounced oil spill removal equipment inspections to ensure compliance with its own requirements. If an inspector notices deficiencies that fall within the responsibility of the other agency, the deficiency will be reported to the other agency for action. However, if the deficiency may cause serious or irreparable harm to persons, property, or the environment, the inspector may take the necessary preventative action. The preventative action will then be reported to the responsible agency.

The NSFCC maintains the Response Resource Inventory database. The BSEE, to the extent practicable, will assist the USCG with verifying that off-shore response and containment equipment is accurately captured within the database for equipment listed in OSRPs and subject to inspection.

7. OIL SPILL RESPONSE TRAINING

BSEE is responsible for ensuring that OSRPs include sufficient evidence that staffs of oil spill removal organizations (OSROs), spill response operating teams, and oil spill response cooperatives are trained in the use of oil discharge response equipment and techniques to respond to an oil spill. Whenever practicable, BSEE and USCG will, jointly or independently, attend and audit the training that OSRO and response personnel receive, and provide feedback for improvement of operational readiness.

8. SPILL MANAGEMENT TEAM TRAINING

Owners or operators of offshore facilities have dedicated spill management teams (SMTs) as described in their OSRP, organizations that are capable of orchestrating an effective, sustained response to a WCD from their facilities. Members of the SMT must undergo annual training and participate in table-top exercises. Whenever practicable, BSEE and USCG personnel will, jointly or independently, attend the training and drills to ensure that the teams are thoroughly familiar with their approved OSRP and to provide input for continual improvement of the team and make members aware of any new agency requirements or clarifications of existing requirements.

9. OIL DISCHARGE REPORTING

The FWPCA and 33 CFR 153.203 require that the person in charge of a vessel, onshore facility, or offshore facility report all discharges to the National Response Center (NRC), regardless of volume. The NRC provides notification to the appropriate agencies and State offices. The USCG will develop and maintain computer programs that, based upon the needs of BSEE, provide daily digital downloads of data related to offshore spills to BSEE, at no charge.

Additionally, owners or operators of offshore facilities are required to report oil discharges of one barrel or more, or discharges of an unknown size but thought to be one barrel or more, to the BSEE OCS Regional Supervisor (RS).

10. OIL DISCHARGE RESPONSE

The USCG provides pre-designated FOSCs in accordance with the NCP for the coastal zone. Each USCG District identified in this MOA will provide up-to-date FOSC listings to the corresponding regional OSRD contacts.

The USCG FOSC has the authority to direct Federal, State, and private actions. A primary duty of the FOSC during oil discharge events is to ensure that the response is swift and safe, and that impacts to the environment are minimized. To do this the FOSC serves as a coordinator of responsible party (RP), government, and private actions and interests and is encouraged to work closely with the RP and BSEE in developing appropriate response strategies.

The BSEE, upon request from the FOSC or as dictated by exigencies of the type of discharge incident, will provide engineering, technical, and scientific expertise to support responses to reportable oil discharges from offshore facilities. Assistance may include remote help such as identification of RPs using BSEE regional databases and mapping programs, or on-site help at Joint Field Offices or Unified Command Posts. In cooperation with the FOSC, BSEE may deploy Regional and/or District engineering, scientific, or technical staff to support the response and participate in USCG over flights to assist assessing damage to offshore facilities.

The USCG will deploy personnel to integrate into the BSEE Incident Management Team whenever it is activated during emergencies (e.g. hurricanes in the Gulf of Mexico) involving offshore energy infrastructure. The goal of this integration of BSEE and USCG personnel is to prevent duplication of efforts, optimize the use of resources, ensure consistency in data collection and reporting, and to expedite search and rescue and oil discharge response operations.

For all offshore oil discharges greater than 50 barrels, whenever requested by BSEE, the FOSC will provide BSEE with documentation generated during a response from an offshore facility, for the purpose of validating the response activities per the appropriate ACP, RCP, and BSEE-approved OSRP. The FOSC may also invite the BSEE to participate in critiques of a response and may make recommendations for revisions to the OSRP or other response plans.

11. DISCHARGE ABATEMENT AND PRODUCTION RESUMPTION

The RS or designated individual will direct measures to abate (stop and/or minimize) sources of pollution from regulated offshore facilities to ensure minimal release of oil and to prevent unwarranted shutdown of unaffected production and pipeline systems. However, if an oil discharge poses a serious threat to public health, welfare, or the environment, in accordance with Public Law 101-380 (OPA) Sec. 4201, the FOSC may take action for effective and immediate removal of a discharge and to ensure mitigation or prevention of a substantial threat of a discharge of oil. The FOSC should notify the BSEE RS as soon as possible thereafter.

Following facility and system repairs, as approved by BSEE, or the determination that the shut-in facility is not the source of a reported oil discharge, BSEE will authorize the return of a regulated facility to operation. All necessary precautions will be taken by BSEE to ensure verification of system integrity prior to resumption of production operations.

12. POLLUTION EVENTS DATA BASES

The USCG maintains a database that includes information on all oil discharges that impact the coastal zone. This database, called MISLE (Marine Information for Safety and Law Enforcement), serves as

the primary system for tracking resource hours, maintaining vessel and facility regulatory and incident histories, and conducting vessel and facility inspections.

The BSEE maintains a detailed database on offshore incidents, oil discharges, and enforcement actions. Unclassified data from the database, referred to as TIMS (Technical Information Management System), is made available to the public on the BSEE web site.

To the greatest extent possible, BSEE and the USCG will coordinate data collection efforts related to platform evacuations, oil discharge volume estimates, facility damage, and production recovery, and will share digital information on offshore operators and oil discharges in order to improve offshore safety performance, and dissemination of data for public consumption.

13. ENFORCEMENT

Any oil discharge of a harmful quantity, or a hazardous substance release that meets or exceeds a reportable quantity, may result in an enforcement action as authorized under the FWPCA. The USCG considers many factors in the determination of an appropriate enforcement/compliance action, such as the oil discharge history and the volume of discharge. To assist the USCG in determining an appropriate enforcement/compliance action, upon request, the BSEE will provide the USCG with available information on the affected facility and/or RP.

Should the USCG complete an enforcement/compliance action against a person engaged in operations on a BSEE-regulated facility for an oil discharge or substantial threat of discharge, the USCG shall notify BSEE and the OSRD of the type of action taken. The USCG will also provide the cause for such action, and any additional information that BSEE should be aware of when analyzing aggregate operational and safety records of the RP during periodic operator assessments.

Should the BSEE pursue an enforcement/compliance action against a person engaged in operations on offshore facilities, the USCG will provide BSEE with available information on the affected facility and/or RP, and as otherwise consistent with BSEE/USCG MOA OCS-02 (Civil Penalties). Matters where input from the USCG is warranted include those when a person engaged in offshore operations has engaged in acts or omissions that cause a discharge or substantial threat of a discharge, or where such person failed to take reasonable precautions to prevent oil discharges, or deviated from BSEE-approved OSRPs during response to a discharge event.

14. INTER-AGENCY TRAINING

The BSEE OSRD oversees Ohmsett – The National Oil Spill Response and Renewable Energy Test Facility in Leonardo, New Jersey. Operations at the facility include the testing of existing mechanical equipment such as booms and skimmers, prototypes of new response equipment, oil dispersants, and in-situ burn equipment and protocol. Additionally, Ohmsett is the site of both classroom and hands-on tank instruction on the use of oil discharge response equipment. The BSEE also oversees the National Offshore Training and Learning Center (NOTLC) whose mission is to support the Bureau's goals by providing upfront and ongoing contemporary learning and development opportunities. The BSEE will notify the USCG of upcoming BSEE-sponsored training both at Ohmsett and the NOTLC to make staff aware of and, where possible and subject to the availability of appropriations, provide USCG opportunities to attend training on a space available basis.

The USCG will notify BSEE of upcoming training opportunities for the Incident Command System (ICS), On-Scene Coordinator crisis management, and spill response technical courses. Training will be provided on a space available basis and subject to the availability of appropriations. The USCG will support the NOTLC by providing subject matter experts to conduct classes on USCG functions,

responsibilities, policies, and procedures that affect offshore operations or intersect with BSEE authorities.

15. RESEARCH AND DEVELOPMENT (R&D)

BSEE conducts research on oil spill planning, preparedness, and response through the Response Research Unit of the OSRD. The USCG conducts research on oil spill planning and preparedness through the USCG Research and Development Center. The USCG and BSEE will coordinate research activities in partnership or through the Inter-agency Coordinating Committee on Oil Pollution Research. BSEE and USCG will collaborate, to the maximum extent practicable, in identifying research priorities, co-funding projects, and sharing information and best practices.

E. GENERAL PROVISIONS

Nothing in this MOA alters, amends, or affects in any way, the statutory or regulatory authority of the BSEE or the USCG. This MOA cannot be used to obligate or commit funds, or as the basis for the transfer of funds. All provisions in this MOA are subject to the availability of personnel and funds. This MOA is not intended to, nor does it, create any right, benefit, or trust responsibility, substantive or procedural, enforceable at law or equity by any person or party against the U.S., its agencies, its officers, or any other person. This MOA neither expands nor is in derogation of those powers and authorities vested in the participating agencies by applicable law. It is the intent of the parties that the MOA remain in force even if a portion of it is determined to be unlawful, provided the remaining portion can be read coherently and understood.

F. REPORTING DOCUMENTATION

No follow-up reports or documentation of actions are required as a result of this MOA.

G. AMENDMENTS TO THE MOA

This MOA may be amended by mutual agreement of the participating agencies as described in Section P, of the MMS (BSEE)/USCG MOU dated 30 September 2004.

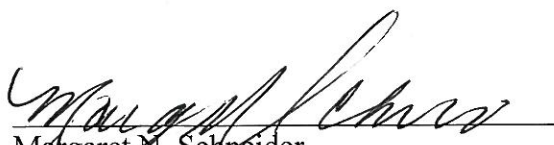
H. EFFECTIVE DATE

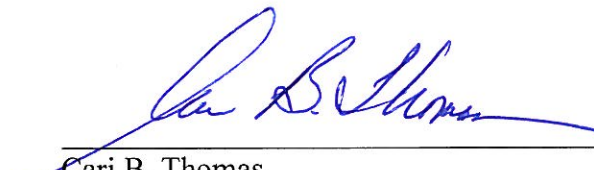
The terms of this agreement become effective upon signature by both parties.

I. TERMINATION

The MOA may be terminated by either agency upon a 30-day advance written notification.

Signed on 3 April 2012, U.S. Department of the Interior, Main Interior Building, Washington, D.C.


Margaret N. Schneider
Deputy Director
Bureau of Safety and Environmental
Enforcement
U.S. Department of the Interior


Cari B. Thomas
Rear Admiral, U. S. Coast Guard
Director of Response Policy
U.S. Department of Homeland Security

bc: BSEE Gen. File

Official File

OSRD Chron. File

Chief, OSRD

SOL/DMR

LMS:OSRD:MSHE3313A:DMoore:cb:1/20/12;(703)787-1702

**Inter-agency Memorandum of Agreement Regarding Oil Spill Planning and
Response Activities Under the Federal Water Pollution Control Act's
National Oil and Hazardous Substances Pollution Contingency Plan and the
Endangered Species Act**

I. INTRODUCTION

- A. Parties. The Parties to this agreement are the U.S. Coast Guard (USCG), the U.S. Environmental Protection Agency (USEPA), the Department of the Interior (DOI) Office of Environmental Policy and Compliance, the U.S. Fish and Wildlife Service (USFWS), and the National Oceanic and Atmospheric Administration's (NOAA's) - National Marine Fisheries Service (NMFS) and National Ocean Service (NOS).
- B. The Parties have conducted a review of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and associated oil spill response activities to coordinate their actions under Section 1321(d) of the Clean Water Act and Section 7(a)(1) of the Endangered Species Act, as amended (16 U.S.C. 1531 *et seq.*) (ESA). Section 1321(d) of the Clean Water Act establishes the NCP and assigns responsibilities to Federal agencies in mitigating damage from oil and hazardous materials spills, including the conservation of fish and wildlife. Section 7(a)(1) of the ESA requires all Federal agencies, in consultation with and with the assistance of the Secretaries of the Interior or Commerce, as appropriate, to review their programs and utilize their authorities in furtherance of the purposes of the ESA by carrying out programs for the conservation of listed species. As a result of this review, recommended procedures have been developed that will achieve better conservation of listed species and critical habitat during implementation of oil spill response activities.
- C. This agreement provides a general framework for cooperation and participation among the Parties in the exercise of their oil spill planning and response responsibilities. Following the recommended procedures presented in this agreement will better provide for the conservation of listed species, improve the oil spill planning and response procedures delineated in the NCP, and ultimately streamline the process required by Section 7(a)(2) of the ESA.

II. PURPOSE

- A. This agreement is intended to be used at the area committee level primarily to identify and incorporate plans and procedures to protect listed species and designated critical habitat during spill planning and response activities. Proactive regional planning may also take into consideration concerns for proposed and candidate species, as well as listed species' habitat not yet designated as critical.¹

¹ Adverse effects on non-designated critical habitat used by listed species has a potential for having an adverse affect on these listed species. Therefore, planners should consider these areas if information is available.

- B. This agreement coordinates the consultation requirements specified in the ESA regulations, 50 CFR 402, with the pollution response responsibilities outlined in the NCP, 40 CFR 300. It addresses three areas of oil spill response activities: pre-spill planning activities, spill response event activities, and post-spill activities. The agreement identifies the roles and responsibilities of each agency under each activity. By working proactively before a spill to identify potential effects of oil spill response activities on listed species and critical habitat, and jointly developing response plans and countermeasures (response strategies) to minimize or avoid adverse effects, impacts to listed species and critical habitat should be reduced or avoided completely. Should a spill occur, response plans and countermeasures will be used to implement response actions to minimize damage from oil discharges in a manner that reduces or eliminates impacts to listed species and critical habitat. In the event that oil spill response actions may result in effects on listed species or critical habitat, the agreement provides guidance on how to conduct emergency consultation under the ESA. It also describes the steps for completing formal consultation, if necessary, after the case is closed, if listed species or critical habitat have been adversely affected.
- C. The goal of this agreement is to engage in informal consultation wherever possible during planning and response. With adequate planning and ongoing, active involvement by all participants, impacts to listed species and critical habitat and the resulting need to conduct subsequent ESA Section 7(a)(2) consultations will be minimized or obviated.

III. LEGAL AUTHORITIES

- A. The Federal Water Pollution Control Act (FWPCA), 33 U.S.C. § 1321, requires that when a spill occurs, the President take such action as necessary to ensure effective and immediate removal of a discharge, and mitigation or prevention of a substantial risk of a discharge of oil into the waters of the United States. The National Contingency Plan (NCP), 40 CFR Part 300, prepared in accordance with the FWPCA, assigns duties to Federal agencies to protect the public health and welfare, including fish, wildlife, natural resources and the public. The NCP designates the Federal On Scene Coordinator (FOSC) as the person responsible for coordinating an oil spill response. (The abbreviation OSC is used in the NCP, while the abbreviation for Federal On Scene Coordinator is FOSC in this agreement.) Nothing in this agreement limits the authority of the Federal On Scene Coordinator as defined in the NCP.
- B. The Endangered Species Act of 1973 (ESA), as amended, 16 U.S.C. §1531 et seq., provides a means to protect threatened and endangered species and the ecosystems upon which they depend. The ESA requires that Federal agencies insure that the actions they authorize, fund, or carry out do not jeopardize listed species or adversely modify their designated critical habitat. Regulations for conducting Section 7 consultation are set forth in 50 CFR Part 402.

IV. DEFINITIONS

The following definitions apply to this agreement and are taken from the definitions contained in either the NCP or the March 1998 USFWS & NMFS Endangered Species Consultation Handbook. For definitions of terms not listed below, refer to the USFWS & NMFS Endangered Species Consultation Handbook and the NCP as appropriate.

Area Committee - the entity appointed by the President consisting of members from qualified personnel of Federal, state, and local agencies with responsibilities that include preparing an area contingency plan for an area designated by the President. The chairs of the Area Committee are the USCG for coastal and Great Lakes plans, and the USEPA for inland plans. In some instances the Regional Response Team (RRT) may act as the Area Committee. In this MOA, the term Area Committee also includes the RRT acting as the Area Committee.

Area Contingency Plan (ACP) - the plan prepared by an Area Committee (or the RRT acting as the Area Committee) that is developed to be implemented in conjunction with the NCP and Regional Contingency Plan (RCP), in part to address removal of a worst case discharge and to mitigate or prevent a substantial threat of such a discharge from a vessel, offshore facility, or onshore facility operating in or near an area designated by the President. A detailed annex containing a Fish and Wildlife and Sensitive Environments Plan prepared in consultation with the USFWS, NOAA, and other interested natural resource management agencies should be incorporated into each ACP. In this MOA, the term ACP also includes sub-area ACP's, sub-area contingency plans, geographic response plans and geographic response strategies as per 40 CFR 300.210.

Biological Assessment - information prepared by or under the direction of the Federal action agency (USCG or USEPA) regarding: 1) listed and proposed species and designated critical habitat that may be affected by proposed actions; and, (2) the evaluation of potential effects of the proposed actions on such species and habitat.

Biological Opinion - document which includes: (1) the opinion of the USFWS or NMFS as to whether or not a Federal action is likely to jeopardize the continued existence of listed species, or result in the destruction or adverse modification of designated critical habitat; (2) a summary of the information on which the opinion is based; and (3) a detailed discussion of the effects of the action on listed species or designated critical habitat. This document will also contain an incidental take statement, that, if appropriate, exempts the Federal actions from the ESA Section 9 take prohibitions.

Candidate species – plant and animal taxa considered for possible addition to the List of Threatened and Endangered Species.

Case is Closed – When removal operations are complete in accordance with 40 CFR 300.320(b).

Critical habitat - areas designated by the USFWS and NMFS pursuant to Section 4 of the ESA for the purposes of identifying areas essential for the conservation of a threatened or endangered species and which may require special management considerations.

Emergency Consultation – an expedited consultation process that takes place during an emergency (natural disaster or other calamity) (50 CFR 402.05). The Services have determined that oil spill response activities qualify as an emergency action. The consultation may be initiated informally. The emergency continues to exist until the removal operations are completed and the case is closed in accordance with 40 CFR 300.320(b). The FOSC will continue to conduct emergency consultations, if needed, until the emergency is over and the case is closed. Formal, or informal, consultation is initiated after the emergency is over, at which time the USFWS and/or NMFS evaluates the nature of the emergency actions, the justification for the expedited consultation, and any impacts to listed species and their habitats.

Federal On Scene Coordinator (FOSC) - the Federal official predesignated by USEPA or the USCG to coordinate and direct responses under the FWPCA as defined in the NCP.

*Formal Consultation*² - a process between USFWS or NMFS and the Federal action agency (USCG or USEPA) that: (1) determines whether a proposed Federal action is likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat; (2) begins with a Federal agency's written request and submission of a complete Section 7 consultation initiation package; and (3) concludes with the issuance of a biological opinion and incidental take statement, as appropriate, by either of the Services. If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required (except when the Services concur, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat. See informal consultation).

Incidental Take - take of listed fish or wildlife species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by a Federal agency or applicant.

Informal Consultation - an optional process that includes all discussions and correspondence between the USFWS or NMFS and the Federal agency (USCG or USEPA) or designated non-Federal representative, prior to formal consultation, to determine whether a proposed Federal action may affect listed species or critical habitat. This process allows the Federal agency to utilize the Services' expertise to evaluate the agency's assessment of potential effects or to suggest possible modifications to the proposed action, which could avoid potential adverse effects. If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required (except when the Services concur, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat).

² Formal consultation can occur during planning or after the conclusion of emergency consultation if listed species or critical habitat have been affected.

Listed Species – for the purposes of this MOA, any species of fish, wildlife or plant, which has been determined to be endangered or threatened under Section 4 of the ESA.

National Contingency Plan (NCP) – National Oil and Hazardous Substances Pollution Contingency Plan. The NCP is a national plan that provides the organizational structure and procedures for preparing for and responding to discharges of oil and releases of hazardous substances, pollutants and contaminants. The NCP is set forth in 40 CFR 300.

National Response Team (NRT) - a national team, defined under the NCP, responsible for national planning, policy, and coordination for hazardous substance and oil spill preparedness and response, consisting of representatives from agencies named in 40 CFR 300.175(b).

Regional Response Team (RRT) - a regional team of agency representatives that acts in two modes: the standing RRT and incident specific RRT. The Co-chairs are the USCG and USEPA. The standing team is comprised of designated representatives from each participating Federal agency, state governments and local governments (as agreed upon by the states). Incident-specific teams are formed from the standing team when activated for a response. The role of the standing RRT includes establishing regional communications and procedures, planning, coordination, training, evaluation, preparedness and related matters on a region-wide basis. It also includes assisting Area Committees in coordinating these functions in areas within their specific regions. The role and composition of the incident-specific team is determined by the operational requirements of the response. During an incident, it is chaired by the agency providing the FOSC.

Services – Term used to refer to both the USFWS and NMFS.

V. PROCEDURES

Oil spill planning and response procedures are set forth in the NCP. This agreement is intended to facilitate compliance with the ESA without degrading the quality of the response conducted by the FOSC, to improve the oil spill planning and response process, and ensure continued inter-agency cooperation to protect, where possible, listed species and critical habitat.

A. PRE-SPILL PLANNING

- (1) While drafting Area Contingency Plans themselves may not result in effects to listed species, actions implemented under the plans may. It is essential that the Area Committee engage USFWS and NMFS during the ACP planning process while developing or modifying the ACP and response strategies. This informal consultation can be used to determine the presence of listed species or critical habitat, and the effects of countermeasures, and to ensure that measures to reduce or avoid impacts to listed species and critical habitats during oil spill response activities are developed. By consulting on the anticipated effects prior to implementing response actions, decisions can be made rapidly during the spill, harm from response actions can be

minimized, and implementation of response strategies specifically designed to protect listed species and critical habitat can be achieved.

- (2) The pre-spill planning process is shown as a flow chart in Appendix A. The Area Committee Chair will request, in writing, that endangered species expertise and a species list be provided by the Services.³ The request should also describe the area and include a general description of the countermeasures being considered and the planning process to be used (e.g., a workgroup). In order to document the request for consultation and planning involvement, the request shall be sent to both NOAA and USFWS. To obtain NMFS assistance, a request should be sent to the Department of Commerce (DOC) RRT representative, with a copy to the NOAA Scientific Support Coordinator (SSC) and the NMFS Regional Field Office. For USFWS support, a request should be sent to the local USFWS field office(s), with a copy to the USFWS Regional Response Coordinator (RRC) at the appropriate USFWS Regional Office(s) and the DOI RRT representative. It is the responsibility of the USFWS RRC, acting through the Ecological Services Assistant Regional Director, and the NOAA SSC to act as a liaison between the respective Service and the Area Committee. USFWS and NMFS will orally respond to the request within 30 days of receipt and provide a written response within 60 days. The response should include designation of a listed species expert to assist the Area Committee.
- (3) If listed species or critical habitat are present in the planning area being considered the Area Committee should use a planning process that ensures engagement of Service experts.⁴ This process shall ensure that the appropriate participants jointly gather and analyze the information needed to complete the Planning Template in Appendix C. This planning process constitutes informal consultation.⁵ The goals of this planning process are to identify the potential for oil spill response activities to adversely affect listed species and critical habitat and to identify for inclusion in the ACP information on sensitive areas, emergency response notification contacts, and any other information needed. Methods should be developed to minimize identified adverse effects and, where necessary, the plan should be modified accordingly. If specific sources of potential adverse effects are identified and removed, the Services will provide a concurrence letter and Section 7(a)(2) requirements will be deemed to have been met.⁶
- (4) If, after the process in Appendix C has been followed, it cannot be determined that adverse effects will not occur during a response action, the USCG or USEPA, as appropriate, will initiate formal consultation using the information gathered in Appendix C; this information will be used by the Services to complete formal

³ 40 CFR 300.170(a).

⁴ Process options include using an informal workgroup; formal workgroup, Environmental Risk Assessment process, or other process based on Area Committee needs.

⁵ This process does not negate any regional consultations that have already occurred, nor alter the strategies/procedures in the ACP until the ACP is officially modified in consultation with USFWS or NMFS.

⁶ Letter is required for the administrative record. See Appendix E.

consultation.⁷ This will be a programmatic consultation that generally addresses oil spill response activities at issue in the plan area. At times when specific information is available about certain oil spill response methods and listed species and critical habitat, it may be possible to pre-approve particular activities that may be implemented in the event there is insufficient time to initiate emergency consultation before the need to take action.⁸

- (5) All parties recognize that development and modification of the ACP is an ongoing process. Changes, including modifications to response actions or changes to the species list, should be addressed regularly through a dynamic planning process. The Services should contact the Area Committee or workgroup if they become aware of newly listed species that may be affected by planned response activities. The Area Committee should likewise notify the Services of changes to planned response activities. The Area Committee or workgroup should evaluate any changes and assess the need for additional consultation as needed.

B. OIL SPILL RESPONSE

During an oil spill event which may affect listed species and/or critical habitat, emergency consultations under the ESA are implemented (50 CFR 402.05) for oil spill response actions.⁹ Emergency consultation may be conducted informally through the procedures that follow (See Appendix A). Emergency consultation procedures allow the FOSC to incorporate listed species concerns into response actions during an emergency. “Response” is defined in this agreement as the actions taken by the FOSC in accordance with the NCP. The FOSC conducts response operations in accordance with the NCP and agreement established in the ACP.

- (1) As per the NCP and ACP, the FOSC will notify the RRT representatives of DOI and DOC through the established notification process regardless of whether listed species or critical habitat is present. Upon notification, the DOC and DOI representatives shall contact the NOAA SSC and RRC, respectively, and other appropriate Service contacts as provided in internal DOC or DOI plans, guidance, or other documents. If established in the ACP, the FOSC may also contact the Service regional or field offices directly (see Section V(A)(3) above). If listed species and/or critical habitat are present or could be present, the FOSC shall initiate emergency consultation by contacting the Services. The NOAA SSC and RRC shall coordinate appropriate listed species expertise. This may require timely on-scene expertise from the Services’ local field offices. These Service representatives may, as appropriate, be asked by the FOSC to participate within the FOSC’s Incident Command System and provide information to the FOSC.¹⁰

⁷ Letter is required for the administrative record. See Appendix E.

⁸ Due to time constraints associated with spill response, this does not mean that immediate spill response actions cannot occur to meet the requirements of 40 CFR 300.317. However, planning should address specific procedures for initiating emergency consultation for activities that are pre-approved and for those that have not been pre-approved.

⁹ Based on pre-spill planning or discovered during the response.

¹⁰ 40 CFR 300.175(b)(7) & (b)(9); 40 CFR 300.305(e).

- (2) The ACP, including any agreed upon references cited in the ACP, should form the basis for immediate information on response actions. As part of emergency consultation, the Services shall provide the FOSC with any timely recommendations to avoid and/or minimize impacts to listed species and critical habitat.¹¹ The NOAA SSC should also be involved in these communications as appropriate. If incidental take is anticipated, and if no means of reducing or avoiding this take are apparent, the FOSC should also be advised and the incidental take documented. If available, the FOSC should consider this information in conjunction with the national response priorities established in the NCP.¹² The FOSC makes the final determination of appropriate actions.
- (3) It is the responsibility of both the FOSC and the Services' listed species representatives to maintain a record of written and oral communications during the oil spill response. The checklist contained in Appendix B is information required to initiate a formal consultation in those instances where listed species and/or critical habitat have been adversely affected by response actions.¹³ If it is anticipated that listed species and/or critical habitat may be affected, the FOSC may request that the USFWS and/or NMFS representative to the Incident Command System oversee and be responsible for the gathering of the required information in Appendix B while the response is still ongoing.¹⁴ The FOSC may also choose to designate another individual to be responsible for collecting the information.¹⁵ Although in some instances the drafting of information for Appendix B may be completed after field removal operations have ceased, it is anticipated that collection of the information should be complete before the case is officially closed and that no further studies will be necessary.
- (4) It is the responsibility of the FOSC to notify the Services' representatives in the Incident Command System of changes in response operations due to weather, extended operations, or some other circumstance. It is the responsibility of the Services to notify the FOSC of seasonal variances (e.g., bird migration), or other natural occurrences affecting the resource. If there is no Service representative in the Incident Command System, the FOSC will ensure that the NOAA SSC and/or DOI representative to the RRT remains apprised of the situation. The Services will continue to offer recommendations, taking into account any changes, to avoid jeopardizing the continued existence of listed species or adversely modifying critical habitat, and to minimize the take of listed species associated with spill response activities.

¹¹ See Section 8.1 of the USFWS & NMFS Endangered Species Consultation Handbook (<http://endangered.fws.gov/consultations/s7hndbk/s7hndbk.htm>).

¹² 40 CFR 300.317 National Response Priorities.

¹³ See Section 8.2(B) of the USFWS & NMFS Endangered Species Consultation Handbook.

¹⁴ If requested by the FOSC, the NOAA Scientific Support Coordinator (SSC) may coordinate this data collection.

¹⁵ See Appendix D for example Pollution Removal Funding Authorization (PRFA) Statement of Work language.

C. POST RESPONSE

If listed species or critical habitat have been adversely affected by oil spill response activities, a formal consultation is required, as appropriate.¹⁶ Informal emergency consultation shall remain active until the case is closed. The FOSC will initiate consultation on the effect of oil spill response activities (not the spill itself) after the case is closed. Every effort shall be made to ensure that relevant information generated as part of the consultation process is made available for use in the Natural Resource Damage Assessment (NRDA) process. (Note: NRDA activities are separate from this consultation.)

- (1) After the FOSC determines that removal operations are complete in accordance with 40 CFR 300.320(b), the impacts of the response activities on listed species and critical habitat will be jointly evaluated by the FOSC and the Services.
- (2) If listed species or critical habitat were adversely affected by oil spill response activities, the FOSC will follow the procedural requirements of 50 CFR 402.05(b) (see Appendix A). The document developed by following Appendix B, information required to initiate a formal consultation following an emergency, should be included with a cover letter to the Services requesting consultation and signed by the FOSC. The FOSC will work with the Services and the NOAA SSC, as appropriate, to ensure that Appendix B is complete.¹⁷ This document comprises the FOSC's formal request for consultation.
- (3) The Services normally issue a biological opinion within 135 days of receipt of the Section 7 consultation request (50 CFR 402.14). When a longer period is necessary, and all agencies agree, the consultation period may be extended. The final biological opinion will be prepared by the Services and provided to the FOSC, USFWS RRC, NOAA SSC, DOI and DOC RRT members, and the Area Committee Chair so that recommendations can be reviewed by the Area Committee, and where appropriate, implemented to minimize and/or avoid effects to listed species and critical habitat from future oil spill response actions.¹⁸ The result of the consultation should be considered by the FOSC for inclusion in a lessons learned system so changes can be made to the ACP, as necessary, for the benefit of future oil spill response actions. If such changes to the ACP modify the anticipated effects to listed species or critical habitat, the Services should appropriately document the anticipated changes in future effects and complete any appropriate administrative steps.

¹⁶ If only proposed species or proposed critical habitat have been adversely affected, a formal consultation is not required; however, ESA conference procedures should be followed as appropriate. See the USFWS & NMFS Endangered Species Consultation Handbook for conference information.

¹⁷ The NOAA SSC may also assist.

¹⁸ Recommendations may also be provided for addressing effects caused by spill response actions. This information should be provided to the NRDA process as appropriate.

VI. Points of Contact. The following are the points of contact for each Party:

USCG: Chief, Office of Response, Coast Guard Headquarters (G-MOR), (202) 267-0516.

USEPA: Oil Program Center, U.S. Environmental Protection Agency, (703) 603-8823.

NOAA - NMFS: Section 7 Coordinator, Endangered Species Division, Office of Protected Resources, (301) 713-1401.

USFWS: National Spill Response Coordinator, U.S. Fish and Wildlife Service, Division of Environmental Quality, (703) 358-2148.

NOAA - NOS: Director, Office of Response and Restoration, (301) 713-2989 x101.

DOI: Office of Environmental Policy and Compliance, (202) 208-6304.

VII. Funding and Resources. This agreement is not a fiscal or funds obligation document. Nothing in this agreement shall be construed as obligating any of the Parties to the expenditure of funds in excess of appropriations authorized by law or otherwise commit any of the Parties to actions for which it lacks statutory authority. It is understood that the level of resources to be expended under this agreement will be consistent with the level of resources available to the Parties to support such efforts. Any activities involving reimbursement or contribution of funds between the Parties to this agreement will be handled in accordance with applicable laws, regulations and procedures. Such activities will be documented in separate agreements with specific projects between the Parties spelled out. The separate agreements will reference this general agreement.

VIII. Effective Date. The terms of this agreement are effective upon signature by all Parties.

IX. Modification. This agreement may be modified upon the mutual written consent of the Parties.

X. Termination. The terms of this agreement, as modified, with the consent of all Parties, will remain in effect until terminated. Any Party upon 60 days written notice to the other Parties may terminate their involvement in this agreement.


**Inter-agency Memorandum of Agreement Regarding Oil Spill Planning and
Response Activities Under the Federal Water Pollution Control Act's
National Oil and Hazardous Substances Pollution Contingency Plan and the
Endangered Species Act**

Approved By:

Date:


Assistant Commandant for Marine Safety
and Environmental Protection
U.S. Coast Guard

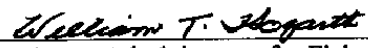
5/25/01


Acting Assistant Administrator
Office of Solid Waste and Emergency Response
U.S. Environmental Protection Agency

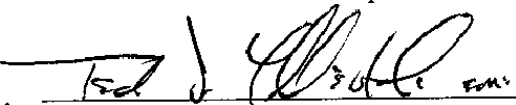
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Acting Director
U.S. Fish and Wildlife Service

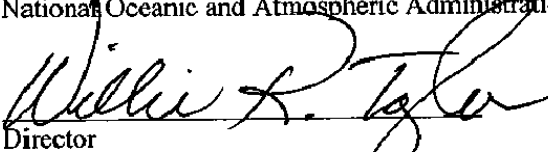
8 June 2001


~~Acting~~ Assistant Administrator for Fisheries
National Marine Fisheries Service
National Oceanic and Atmospheric Administration

5/15/01

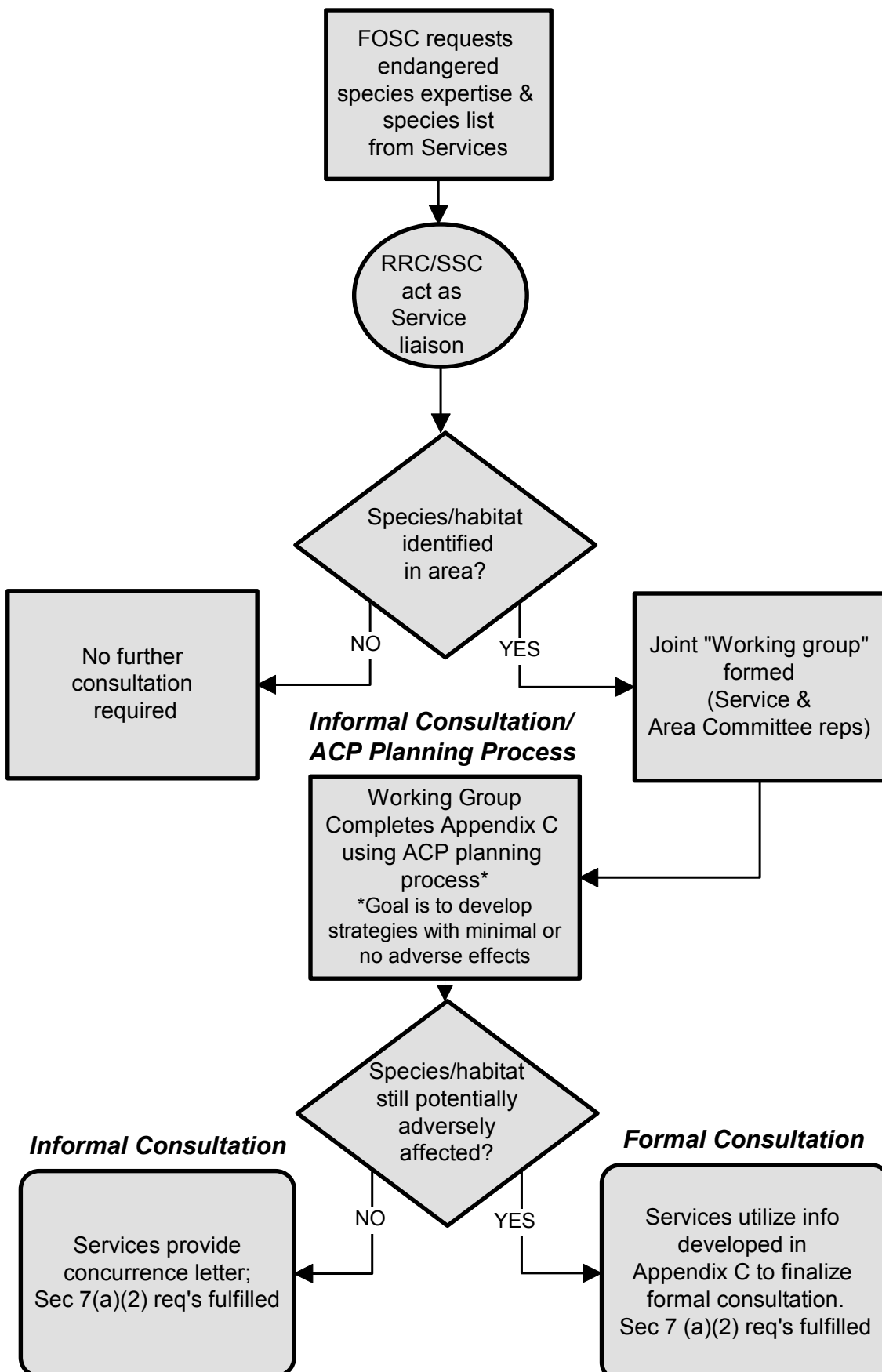

for Assistant Administrator
National Ocean Service
National Oceanic and Atmospheric Administration

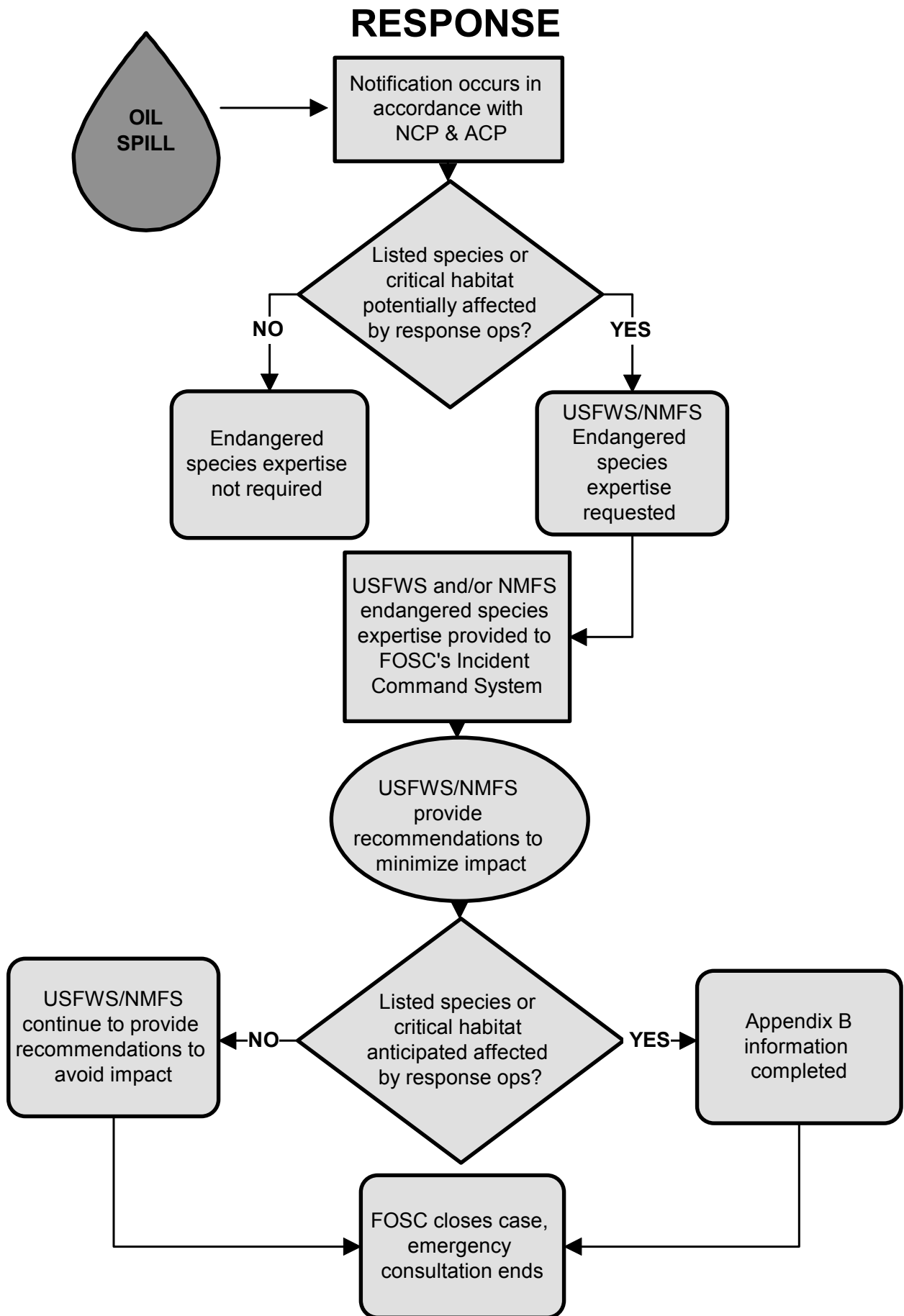
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Director
Office of Environmental Policy and Compliance
Department of the Interior

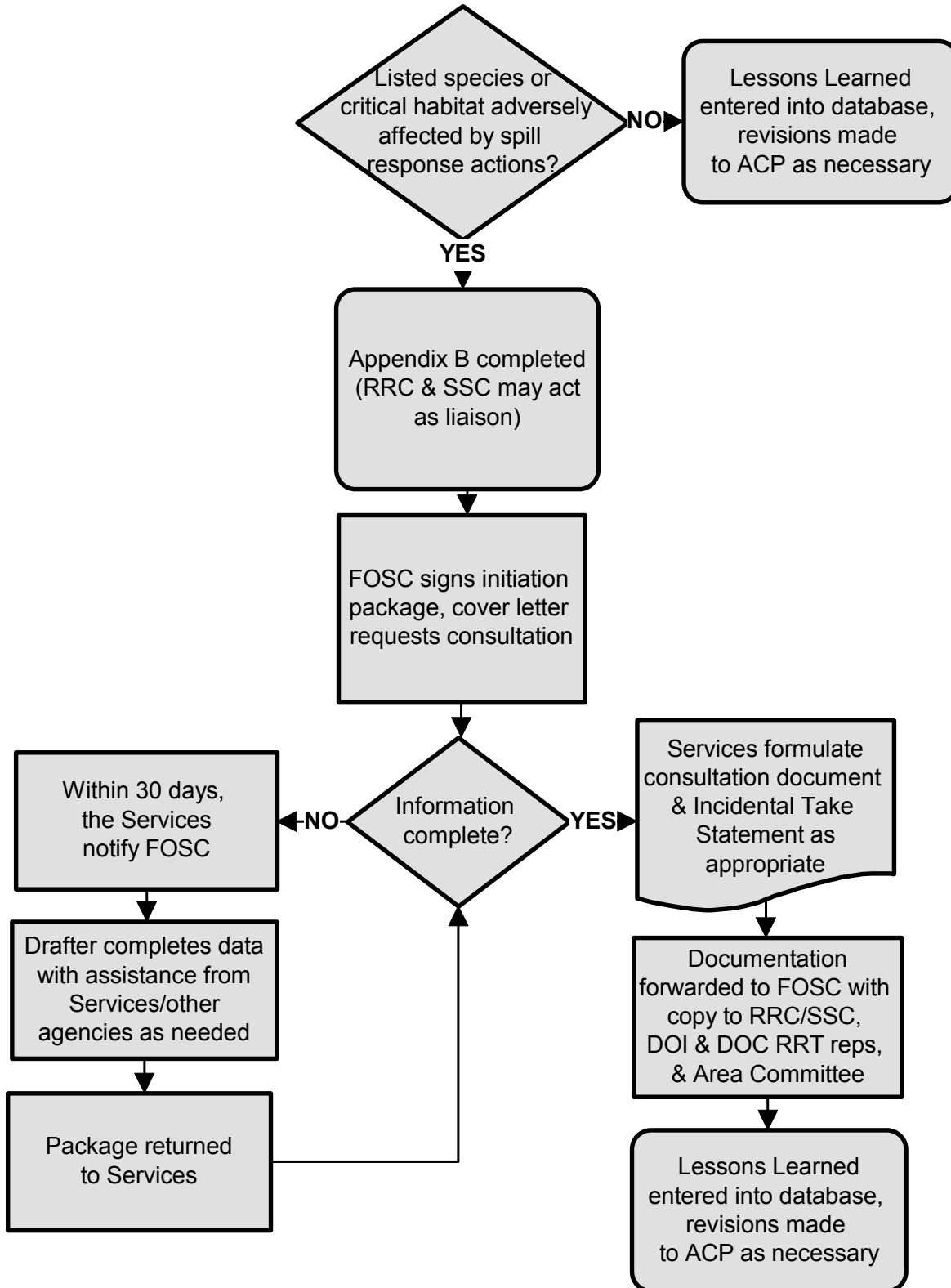
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PRE-SPILL PLANNING





POST RESPONSE



APPENDIX B**EMERGENCY CONSULTATION**
INFORMATION CHECKLIST IN ANTICIPATION OF FOLLOW-UP FORMAL
CONSULTATION (50 CFR 402.05)

As soon as practicable after the emergency is under control, which occurs when the case is closed, the FOSC initiates consultation (either formal or informal, as appropriate) with the Services if listed species and/or critical habitat have been affected. The FOSC should ensure that the following checklist is completed before the case is closed. After the case is closed, this information along with a cover letter requesting consultation will be sent to the Services.

1. Provide a description of the emergency (the oil spill response).
2. Provide an evaluation of the emergency response actions and their impacts on listed species and their habitats, including documentation of how the Services' recommendations were implemented, and the results of implementation in minimizing take.
3. Provide a comparison of the emergency response actions as described in #2 above with the pre-planned countermeasures and information in the ACP.

APPENDIX C

PLANNING TEMPLATE

One of the goals of the Area Contingency Plan (ACP) planning process is to develop strategies or actions that reduce the potential for planned oil spill response activities to adversely affect listed species and designated critical habitat. The planning process may also develop strategies that purposefully protect these resources. The following template is recommended for use by a working group of both Service and Area Committee representatives to develop a document that 1) is used to complete consultation pursuant to Section 7 (a)(2) of the Endangered Species Act of 1973, as amended, and 2) produces information to be included in the appropriate sections of the ACP. To streamline the consultation process, the various sections of this document could be drafted during the planning process and used to develop or modify the ACP.¹⁹ This development process will assist all parties in gaining a thorough understanding of the actions under review and provide opportunities for any Section 7 consultation related issues to be raised and addressed in the planning process, rather than during the oil spill response action.

This template is intended to guide the thought process of creating consultation documents and incorporates content requirements set forth in 50 CFR 402.12 as well as information pertinent to the National Contingency Plan requirements under the Fish and Wildlife Annex; not every item will be applicable to every situation.²⁰

Introduction

This section generally should be completed in one, or possibly two paragraphs.

- General overview of the response strategy including: (1) a brief description - one to two sentences; (2) background, history, etc. as appropriate; (3) purpose of the response strategy; (4) identification of the species and designated critical habitat that may be affected (for consultations that will address large numbers of species, it may be desirable to present this list in the form of a table either attached or presented in another section. Also, if species that may potentially occur in the area are not included in this document, explain why).

This should be developed jointly by the action agency and the Services.

Description of the Proposed Response Strategy

- Provide a description of the response strategy being considered. This is likely to be a detailed description taken substantially from the ACP. It should include how the

¹⁹ It is not required that this planning template be formally written or completed during informal consultation, especially if no modifications to the strategy are required. However, it can be very useful in documenting the [team's] thought process for the administrative record, serving as a guide, or providing additional documentation as needed.

²⁰ The guide on "Developing Consensus Ecological Risk Assessments" provides procedures which may be helpful in exploring and analyzing these issues. Copies can be obtained from USCG Headquarters (G-MOR-2).

response action will be implemented, including equipment and methods. Examples include use of dispersants to avoid shoreline impacts, and deployment of booms to protect sensitive areas. Include all known aspects of the action, such as time frames, why the action is appropriate, indirect effects, etc. An example of an indirect effect may be hauling boom on, or driving vehicles through, a sensitive dune area to gain access to a spill site.

This should be developed by the action agency with the assistance of the Services.

- Provide a description of specific area that may be affected by the response strategy (i.e. Sample Bay, 100-mile section of outer coastline, etc.). Include some measure of the area potentially impacted (i.e., “This plan addresses oil spill response activities that may be conducted out two miles from the coast throughout the 100 mile coastline area encompassed by this ACP”). If different activities are being proposed in different areas, identify this. The team should discuss the appropriateness of presenting this information in terms of the activities that will be conducted within each area, or the areas where each activity will be conducted. For example, “Dispersants may be applied throughout the 10 mile coastline length of Area A and the 25 mile coastline length of Area B.” Maps may be useful.

This should be developed mainly by the action agency; however, modifications may be made with the assistance of the Services and subject to the approval process for chemical countermeasures in the NCP as appropriate.

- Identify how to quickly obtain species/habitat information during a spill (i.e. first refer to ACP and site summary sheet, call State FWS, check website, etc.).
- Identify emergency response points of contact to be notified during a spill. Establish spill parameters for notification as necessary. These should be included in emergency notification numbers as well as on any site summary sheets, in geographic response plans, etc.

This should be developed jointly by the action agency and the Services.

Description of the Affected Environment

- Describe the listed species and designated critical habitat areas that may be affected by the action in terms of overall range and population status. Include the number and location of known subpopulations within and adjacent to the action area (i.e., identify the areas known to be used by the species and, if appropriate, identify the specific times periods of use, such as February - April). Discuss the action area in relation to the distribution of the entire population (e.g., edge of the range, center of population abundance, key reproductive area, etc.). Present views of Service recognized experts on the species, if appropriate.

This should be provided by the Services.

- Ensure that these sensitive areas are referenced in the ACP (i.e. via ESI maps, specially generated GIS maps, site summary sheets, or other digitized format, etc.).
This should be completed by the action agency.
- Provide biological data on listed species: historical use, presence, and potential use of habitat areas within the action area. Literature and other documents containing such information may be incorporated by reference. Provide species observation information, and recent results of species surveys, including, if appropriate, a description of methods, time of year surveys were performed, level of effort, and confidence intervals. Again, literature and other documents containing such information may be incorporated by reference. Maps may be useful to depict this information.
The Services should assist in developing this information. In many instances the Services will be able to supply this information from their records.
- Identify other designated sensitive areas, both adjacent to and within the proposed action area. These include National Wildlife Refuges, National Marine Sanctuaries, etc.
This should be developed jointly by the action agency and the Services.

Analysis of the Effects of the Action

- Describe all effects of the response strategy relative to the listed species of concern and its habitat, including designated critical habitat. This should include direct, indirect, beneficial, and cumulative effects as well as effects from interrelated and interdependent actions, if any.
This should be developed jointly by the action agency and the Services.
- Describe any measures that may avoid or lessen adverse effects as well as any measures that will enhance the species' present condition. If appropriate, delineate the locations of such measures. A discussion of environmental "tradeoffs" (including no action) may be appropriate. For example, "Dispersants may be toxic to the listed aquatic species when used in concentrations above 70%; however, oil coming ashore and smothering the listed species in tidal marshes is of greater concern due to the extremely poor conservation status of this species." Reference any already completed relevant reports, studies, biological assessments, etc.
This should be developed jointly by the action agency and the Services.

Modification to Strategy (as needed)

If necessary, after joint analysis of the information, the action or strategy may be modified.

- Describe the new strategy or action. For example, "Dispersants will not be used in

concentrations above X% or in areas less than three feet deep. They may be used in Area A and Area B. A Service representative from Regional field office B will be contacted during an oil spill response during the months of February - April in Area B.”

This should be developed jointly by the action agency and the Services.

Documentation

This template is a guide to help you through the planning process, however, when sections are written out as the process is completed, the final document serves the same purpose as a biological assessment. It may be used to complete consultation pursuant to Section 7 of the ESA.

- The document should be maintained on file by the Services and may be referred to during an oil spill response.
- The Area Committee will ensure that this document becomes part of the ACP as appropriate such as:
 - Included as an appendix to the Dispersant or In Situ Burn Operations Plan;
 - Included as a reference document in the appropriate section of the ACP;
 - Include relevant information in sections of the ACP such as Notifications, Site Summary Sheets, Geographic Response Plans, GIS maps, etc.
- The document should include points of contact from both the action agency and the Services.

APPENDIX D

SAMPLE POLLUTION REMOVAL FUND AUTHORIZATION (PRFA) **LANGUAGE***

This Statement of Work (SOW) language is intended as sample language only. The language can be tailored to ensure that the FOSC is provided with the resources needed to meet the desired activities or functions required. Accordingly, more precise or succinct language may be used.

PRFA SOW additional/optional work elements to meet the FOSC's ESA mandated activities associated with removal actions:

.....

To arrange for, and as appropriate coordinate with, the resources needed to meet the conference and consultation requirements of the ESA.

Specific activities anticipated under this requirement include:

- (a) Providing the expertise needed to make sensitive removal decisions which could potentially impact on listed species or critical habitats associated with this incident;
- (b) Gathering and documenting the information needed to provide input into the aforementioned decisions and to document the resulting impact of removal actions; and
- (c) As required, preparing the consultations required of the FOSC for the Service(s).

Funding under this agreement is provided for:

- (a) Salaries, travel and per diem;
- (b) Appropriate charges for use of equipment or facilities;
- (c) Any actual expenses for goods and/or services reasonably obtained in order to provide the agreed upon support to the FOSC removal activities (including contracts.)

* Developed by the National Pollution Funds Center

APPENDIX E

SAMPLE LETTERS FOR REQUESTING CONCURRENCE OR FORMAL CONSULTATION

These sample letters have been developed to assist the Parties to this agreement in documenting the requirements of the Endangered Species Act. This is suggested wording only and may be used to complete the administrative record as needed. The request for concurrence can be used after the planning process for a particular area or countermeasure when it has been determined that no adverse effects will occur. The Services will provide a concurrence letter, as appropriate, for documentation. Alternatively, the request for formal consultation can be used after planning results indicate that adverse effects may still occur. If this is the case, the Services will evaluate the information developed jointly by the workgroup and issue a biological opinion.

Request for Concurrence Letter:

Mr./Ms. xxx
U.S. Fish and Wildlife Service/National Marine Fisheries Service
Division of Endangered Species

Dear Mr./Ms. xxx:

In accordance with the requirements of Section 7 of the Endangered Species Act, I am seeking your concurrence that the [Coast Guard's/EPA's] implementation of the [name of plan] is not likely to adversely affect the [identify the listed species and designated critical habitat that may be affected. Note, in cases where many listed species or critical habitat designations may be involved, it may be appropriate to refer to an attached list]. This [name of plan] has been developed with the assistance of [name of Service staff] of the U.S. Fish and Wildlife Service/National Marine Fisheries Service and in accordance with the procedures identified at 40 CFR Part 300, the National Contingency Plan. To assist in completing informal consultation, please find attached the Biological Evaluation that has been produced through the planning process described in the Inter-agency Memorandum of Agreement Regarding Oil Spill Planning and Response Activities Under the Federal Water Pollution Control Act's National Oil and Hazardous Substances Pollution Contingency Plan and the Endangered Species Act using the Planning Template contained in Appendix C of that Agreement.

Thank you for your efforts in this matter. If you require additional information, please contact [provide a contact with a telephone number].

Sincerely,

Request for formal consultation:

Mr./Ms. xxx:
U.S. Fish and Wildlife Service/National Marine Fisheries Service
Division of Endangered Species

Dear Mr./Ms. xxx:

In accordance with the requirements of Section 7 of the Endangered Species Act, I am requesting the initiation of Formal Consultation on the effects of the [Coast Guard's/EPA's] implementation of the [name of plan]. Through informal consultation with your staff [or identify the appropriate Service office(s)], we have determined that implementation of spill response activities in accordance with the subject [name of plan] is likely to result in adverse effects to [identify the listed species and designated critical habitat that may be affected. Note, in cases where many listed species or critical habitat designations may be involved, it may be appropriate to refer to an attached list]. This [name of plan] has been developed with the assistance of [name of Service staff] of the U.S. Fish and Wildlife Service/National Marine Fisheries Service and in accordance with the procedures identified at 40 CFR Part 300, the National Contingency Plan. While these actions may result in short-term adverse effects, it is our belief that the species [and designated critical habitat areas] will ultimately benefit from them. To assist in completing Formal Consultation, please find attached the Biological Evaluation that has been produced through the planning process described in the Inter-agency Memorandum of Agreement Regarding Oil Spill Planning and Response Activities Under the Federal Water Pollution Control Act's National Oil and Hazardous Substances Pollution Contingency Plan and the Endangered Species Act using the Planning Template contained in Appendix C of that Agreement.

Thank you for your efforts in this matter. If you require additional information, please contact [provide a contact with a telephone number].

Sincerely,

Southeast Louisiana Area Contingency Plan

Chapter 9000
Appendix U Spills of
Nonfloating Oils

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Spills of Nonfloating Oils

Risk and Response

Committee on Marine Transportation of Heavy Oils
Marine Board Commission on Engineering and
Technical Systems National Research Council

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NOTICE: The project that is the subject of this report was approved by the Governing Board of the National Research Council, whose members are drawn from the councils of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. The members of the committee responsible for the report were chosen for their special competencies and with regard for appropriate balance.

The National Academy of Sciences is a private, nonprofit, self-perpetuating society of distinguished scholars engaged in scientific and engineering research, dedicated to the furtherance of science and technology and to their use for the general welfare. Upon the authority of the charter granted to it by the Congress in 1863, the Academy has a mandate that requires it to advise the federal government on scientific and technical matters. Dr. Bruce M. Alberts is president of the National Academy of Sciences.

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COMMITTEE ON MARINE TRANSPORTATION OF HEAVY OILS

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Preface

BACKGROUND

Maritime accidents that result in oil spills are high on the list of public environmental concerns. These spills are difficult to control and can contaminate the marine environment. When oil is spilled on the sea, it undergoes physical, chemical, and biological changes as it weathers and is degraded by bacteria. Most oil spill cleanup technologies, which have been developed for floating oils and the ensuing emulsions, are not very effective. For most spills, only about 10 to 15 percent of the oil is recovered, and the best recovery rates are probably about 30 percent (OTA, 1990).

Some oils with a specific gravity greater than 1.0 (and some other oils in certain circumstances) may be neutrally buoyant or sink when spilled on water, depending on the salinity of the water. Federal rules governing oil spill contingency plans categorize petroleum cargoes according to their physical properties. Oils with a specific gravity of > 1.0 , referred to as Group V oils, include some heavy fuel oils, asphalt products, and very heavy crude oils. Vessels and terminals that handle Group V oils are required to include responses to spills of Group V oils in their facility response plans.

The electric power generation industry often uses Group V oils because some Group V oil products are cheaper and have higher BTU content than other fuel oil products. Among these products are manufactured oils consisting of bitumen, water, and emulsifying agents. The presence of an emulsifying agent in the oil complicates the physical behavior of the oil if it is spilled into the water. Emulsified oils have been shown to sink initially to the level of their specific

gravity and to surface later as the result of chemical changes caused by weathering.

Oils that sink to the bottom or remain suspended in the water column pose risks to certain resources that are not normally affected by floating oils. These resources include fish, shellfish, seagrasses, and other benthic (seabed) and water-column biota. Submerged oil may also cause episodic re-oiling of shorelines. Although spills of Group V oils have been infrequent, there is some experience in responding to them and in cleaning them up. In most incidents in open water, oil in the water column is unrecoverable, and response operations are largely limited to locating and monitoring its movement. Where there is little or no current flow, suspended oil can sink and pool. In these cases, an effective response can be mounted, and most of the oil on the bottom can be recovered. Effective response (i.e., protecting the nearshore benthic communities) also means removing oil from the shoreline when and if it becomes stranded to keep it from being eroded and sinking in the nearshore tidal areas. Techniques that have been developed and demonstrated for recovering Group V oils following a spill include recovery of accumulations of oil on the seabed and vacuuming oily water for recovery in an oil-water separator. Other mechanical measures have also been investigated.

ORIGIN AND SCOPE OF THE STUDY

In the Coast Guard Authorization Act of 1996, the United States Coast Guard (USCG) was directed to assess the risk of spills for oils that may sink or be negatively buoyant, to examine and evaluate existing cleanup technologies, and to identify and appraise technological and financial barriers that could impede a prompt response to such spills. The USCG requested that the National Research Council (NRC) perform these tasks. In response to this request, the NRC established the Committee on the Marine Transportation of Heavy Oils under the auspices of the Marine Board.

The objectives of the study were: (1) to assess threats posed by the marine transportation of Group V oils by characterizing the trade of such oils and, in general terms, the resources at risk; (2) to assess the adequacy of cleanup technologies for spills of Group V oils and recommend research to develop new technologies and techniques, as appropriate; and (3) to identify barriers to effective responses to spills and recommend technological, financial, or management measures that would promote prompt and effective responses to spills of Group V oils. In discussions with the USCG and congressional staff, the committee clarified that the scope of study included the risk of oil spills and the capability of responding to them, although the environmental and health risks of spilled oil are not areas of the focus.

Committee members were selected with expertise in the following areas: the fate and effects of petroleum in water, habitats, and ecosystems; oil-spill response

and cleanup technologies and operations; engineering systems analysis; tank vessel operations and port operations; environmental and regulatory issues; and relevant management and economic issues. Biographies of the committee members are provided in Appendix A.

Early in the committee's deliberations, it became clear that Group V oils, as defined by the USCG (oils with a specific gravity greater than 1.0), did not encompass all of the oils of concern. The drawbacks of using this narrow classification are that some Group V oils remain on the sea surface throughout the early response phase, while some lower density (e.g., Group IV) oils can be dispersed in the water column and sink to the seabed after weathering and interaction with sediments in the water column or after stranding onshore. The committee, therefore, decided to focus on the *behavior* of oil and use the term "nonfloating oils" as its operational definition. "Nonfloating oils" refers to oils that either initially or after weathering can be found in the water column or on the seabed; this definition includes oils that are suspended in the water column, sink to the seabed, or interact with sediments and are then deposited on the seabed or shoreline. The terms "sunken oils" or "submerged oils" are also used to describe oils that behave in this way.

The committee met four times during 1998 to gather information and discuss the issues of concern. At three of the meetings, presentations were made by a wide variety of individuals representing organizations in the transportation, spill response, environmental, scientific, and regulatory communities. A workshop was held in conjunction with the committee's second meeting to obtain information and to facilitate discussions of the issues. Leading experts in the marine transportation and spill response communities with expertise in the transport and response to spills of heavy or nonfloating oils participated in the workshop and panel discussions. Participants in the meetings and workshop are listed in Appendix B.

The committee's report is divided into five chapters. Chapter 1 focuses on the risk of spills of nonfloating oils and describes the traffic and trading patterns and recent history of heavy-oil spills, based on an analysis of available databases.

Chapter 2 describes the behavioral models for spills of nonfloating oils that can further an understanding of the fate and impact of these oils and be used to identify the resources at risk. This chapter also includes a comparative assessment of the environmental risks from spills of floating and nonfloating oils. Chapter 3 summarizes the technologies and techniques available for responding to spills of nonfloating oils. Subsections focus on modeling and information systems, spill tracking and mapping techniques, and containment and removal systems. Chapter 4 presents a discussion of the managerial, technological, and financial barriers to effective spill response. Chapter 5 presents the committee's findings, conclusions, and recommendations.

ACKNOWLEDGMENTS

The committee wishes to thank the many individuals who contributed their time and effort to this project by presenting material at committee meetings and workshops. Representatives of federal and state agencies, as well as private companies, provided invaluable assistance to the committee and the Marine Board staff.

This report has been reviewed by individuals chosen for their diverse perspectives and technical expertise, in accordance with procedures approved by the NRC's Report Review Committee. The purpose of this independent review is to provide candid and critical comments that will assist the authors and the NRC in making the published report as sound as possible and to ensure that the report meets institutional standards for objectivity, evidence, and responsiveness to the study charge. The content of the review comments and draft manuscript remains confidential to protect the integrity of the deliberative process. We wish to thank the following individuals for their participation in the review of this report:

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Coastal Towing

While the individuals listed above have provided many constructive comments and suggestions, responsibility for the final content of this report rests solely with the authoring committee and the NRC.

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Executive Summary

In the Coast Guard Authorization Act of 1996, the United States Coast Guard (USCG) was directed to assess the risk of spills for oils that may sink or be negatively buoyant, to examine and evaluate existing cleanup technologies, and to identify and appraise technological and financial barriers that could impede a prompt response to such spills. The USCG requested that the National Research Council (NRC) perform these tasks. In response to this request, the NRC established the Committee on the Marine Transportation of Heavy Oils.

Early in the committee's deliberations, it became clear that the statutory definition of Group V oils (oils with a specific gravity greater than 1.0) did not include all of the oils of concern. The first problem with using this definition is that specific gravity is defined as the ratio of the density of oil to the density of freshwater at a fixed temperature. The density of seawater, however, is slightly higher than that of freshwater and increases as salt content increases. Therefore, Group V oils could have lower densities than those of the receiving seawater and float. The second problem is that an oil with a specific gravity of slightly less than 1.0 (e.g., a Group IV oil) might mix into the water column and sink to the seabed after weathering and interaction with sediments. The committee, therefore, decided to use the term "nonfloating oils" to include all of the oils of concern based on their behavior. Nonfloating oils move below the sea surface either because of their initial densities or because of changes in their densities as a result of weathering or interaction with sediments. These oils may be just below the water surface, suspended in the water column, or deposited on the seabed.

In order to carry out the assessment, the committee gathered the available data on the transportation and spills of Group V oils, as well as data on other oils

that are known to sink or become suspended in the water column when weathered or mixed with sediment. The data were available for asphalt, coal tar, carbon black, bunker C, and No. 5 and No. 6 fuel oils, (i.e., so-called "heavy oils"). The committee used the USCG's (USCG) database on oil spills, refined with collaborative data from the Minerals Management Service (MMS), to develop estimates of the probability and mean size of oil spills. The U.S. Army Corps of Engineers (USACE) database on waterborne transportation of petroleum products and other cargoes over U.S. waters was used to assess the volumes of oil transported. The committee combined the spill statistics with the data on cargo tonnage to estimate historical rates on a barrel-per-ton-mile basis.

Historical spill rates must be modified for predictions of future spill rates because future rates will be influenced by fluctuations in traffic and trading patterns, as well as by changes in the ways vessels are designed and operated. The committee used the best available data, combined with its own collective judgment, to estimate the effects of these changes on the number and size of spills of nonfloating oils in the future.

Since 1991, the volume of oil spilled from vessels in U.S. waters has been reduced dramatically. Losses from tankers since 1990 have been less than one-tenth of the pre-1990 volume, and losses from barges have been less than one-third of the pre-1990 volume. From 1973 to 1990, there were 18 incidents involving spills of more than 25,000 barrels. Since 1991, there has not been a single spill of this magnitude for any category of oil. Nevertheless, very large spills will almost certainly occur some time in the future, although they are likely to be spills of crude oil rather than heavy oils, which tend to be transported in smaller volumes on barges and smaller tankers.

The USCG database includes descriptions of the substance spilled in each event. To estimate the frequency of spills of products with the potential to sink or become suspended in the water column after weathering or mixing with sediment, the committee summarized data for spills of more than 20 barrels for asphalt, coal tar, carbon black, bunker C, and No. 5 and No. 6 fuel oils. From 1991 to 1996, there was an average of 16 spills of these heavy oils per year, with an average volume of 785 barrels per spill. Tank barges were responsible for 28 percent of incidents and 80 percent of the volume of these spills of heavy oils. Most heavy-oil spills between 1991 and 1996 involved oils that were less dense than seawater, which only sink under unfavorable environmental conditions. The committee reviewed these heavy-oil spills with spill responders, who estimated that about 20 percent of these spills exhibited nonfloating behavior.

Most of the larger oil spills from land-based facilities were generally spills of crude oil or gasoline. The largest reported spill of heavy oil from a land-based facility between 1991 and 1996 was a spill of 929 barrels of No. 6 fuel oil into Pearl Harbor, Hawaii. By contrast, there were six tank-barge spills of more than 4,000 barrels involving heavy oil (either No. 6 fuel oil or slurry oil). The average volume of spills of heavy oil from barges was 2,254 barrels, and the largest was

about 18,000 barrels. These spills were widely distributed geographically, with the highest frequency in the Gulf of Mexico.

Behavioral models have been developed for spills of nonfloating oils based on their physical and chemical properties. These descriptive, qualitative models predict how oils with densities near or above the density of the receiving water might behave. The models are based primarily on observations of oil spills. The committee described and assessed these models in terms of their effectiveness in predicting the behavior of nonfloating oils.

The environmental concerns associated with responses to spills of nonfloating oils are primarily related to water column and benthic (seabed) habitats. In most spills in open water, oil in the water column is unrecoverable, and response operations are limited to locating and monitoring its movement. However, if the suspended oil approaches shoreline habitats or nearshore benthic habitats in areas where current flow is minimal, the oil will sink and pool on the seabed. In these cases, an effective, but limited, response can be mounted, whereby a significant amount of oil can be removed from the seafloor. An effective response also includes removing oil from the shoreline, if and when it becomes stranded, to prevent its being eroded and sinking in nearshore tidal areas.

The behavior patterns of nonfloating oils can be complex, depending on the density of the oil, the density of the receiving water, and the physical characteristics of the spill site. Current technologies and techniques for locating, tracking, containing, and recovering spills of submerged oils include spill modeling and information systems, tracking and mapping techniques, and oil containment and recovery techniques. Chapter 3 focuses on the current state of practice and identifies systems that have been used or proposed for use in response to spills of nonfloating oils.

The containment and recovery of oil dispersed in the water column or deposited on the seabed is constrained by many factors, beginning with the difficulty of locating the oil and determining its condition. The success of current methods varies greatly but is usually limited because of the wide distribution of the oil and the fact that it is mixed with sediments and water. In general, available methods are most successful when the current speeds and wave conditions at the spill site are low (currents less than 10 cm/sec, wave heights less than 0.25 m), the oil is pumpable, the water is relatively shallow (water depths less than 10 m), and the sunken oil is concentrated in natural collection areas. The selection of methods for containment or recovery depends on the location and environmental conditions at the spill site, the characteristics of the oil and its state of weathering and interaction with sediments, and the equipment and logistical support available for the cleanup operation.

The committee identified a variety of barriers to responses to spills of nonfloating oils, including inadequate planning and training drills; lack of experience; lack of knowledge about transport, fate, and impact on the environment; the difficulty of locating and tracking oil suspended in the water column or

deposited on the seabed; the limited technology options available for containment and recovery; and insufficient investment in research, development, testing, and evaluation of tracking, containment, and recovery systems.

FINDINGS

Finding 1. From 1991 to 1996, approximately 17 percent of the petroleum products transported over U.S. waters were heavy oils and heavy-oil products, such as residual fuel oils, coke, and asphalt. Approximately 44 percent was moved by barge and 56 percent by tanker.

Finding 2. From 1991 to 1996, approximately 23 percent of the petroleum products spilled in U.S. waters were heavy oils. In only 20 percent of these spills did a significant portion of the spilled products sink or become suspended in the water column. Most of the time, spills of heavy oil remained on the surface. The average number of spills of more than 20 barrels of heavy oil and asphalt was 16 per year, with an average volume of 785 barrels per spill. The committee projects that a 30 percent reduction in the number and volume of heavy-oil spills would have been realized if tankers and barges had all been double-hulled vessels.

Finding 3. In recent years, barges have had significantly higher spill rates than tankers. From 1991 to 1996, barges accounted for approximately 80 percent of the volume of heavy-oil spills, and the spill rate, expressed in terms of barrels-spilled-per-ton-mile, was more than 10 times higher for barges than for tankers. Although the reduction in spill volume from tank barges since 1990 has been significant (about one-third of pre-1990 volume), the reduction for tankers has been even more dramatic (about one-tenth of pre-1990 volume).

Finding 4. Specific gravity, as used in the regulatory definition of Group V oils, does not adequately characterize all oil types and weathering conditions that produce nonfloating oils. The committee was asked to address the issue of responses to Group V oil spills, defined by current regulations as oils with a specific gravity of greater than 1.0. However, the committee determined that the issue of concern is planning for and responding to oil spills in which most, or a significant quantity, of the spilled oil does not float. The committee, therefore, decided to use the term “nonfloating oils” to describe the oils of concern.

Finding 5. Nonfloating oils behave differently and have different environmental fates and effects than floating oils. The resources at greatest risk from spills of floating oils are those that use the water surface and the shoreline. Floating-oil spills seldom have significant impacts on water-column and benthic resources. In contrast, nonfloating-oil spills pose a substantial threat to water-column and benthic resources, particularly where significant amounts of oil have

accumulated on the seafloor. Nonfloating oils tend to weather slowly and thus can affect resources for long periods of time and at great distances from the release site. However, the effects and behavior of nonfloating oil are poorly understood.

Finding 6. Although spill modeling and supporting information systems are well developed, they are not commonly used in response to nonfloating-oil spills because of limited environmental data and observations of oil suspended in the water or deposited on the seabed. Oil-spill models and supporting information systems are routinely used in contingency planning and spill responses. Sophisticated, user-friendly interfaces have been developed to take advantage of the latest advances in computer hardware and software. The current generation of models can rapidly incorporate environmental data from a variety of sources and include integrated geographic information systems. The models can also assimilate data on the most recently observed location of spilled oil and have improved forecasts of oil movements. They are not routinely used, however, in response to nonfloating oil spills because of the lack of supporting data on the three-dimensional currents and concentrations of suspended sediments. Field data, such as oil concentrations in the water column and on the seabed, are also not generally available to validate or update models.

Finding 7. A substantial number of techniques and tools for tracking subsurface oil have been developed. Most of them, however, have not been used in response to actual oil spills. Many techniques are available for determining the location of oil both in the water column and on the seabed. These include visual observations, geophysical and acoustic methods, remote sensing, water-column and seabed sampling, *in situ* detectors, and nets and trawl sampling. The most direct and simplest methods, such as diver observations and direct sampling, are widely used, but they are labor intensive and slow. More sophisticated approaches, such as remote sensing, are limited to zones very near the sea surface because of technical constraints. Other advanced technologies, such as acoustic techniques, cannot differentiate between oil and water or between oiled sediments and underlying sediments. Many of the more sophisticated systems are prone to misuse and produce ambiguous data that are subject to misinterpretation. The performance of all but the simplest methods is undocumented either by field experiments or by use in spill responses.

Finding 8. Although many technologies are available for containing and recovering subsurface oil, few are effective, and most work only in very limited environmental conditions. Containment of oil suspended in the water column using silt curtains, pneumatic barriers, and nets and trawls is only effective in areas with very low currents and minimal wave activity. These conditions rarely exist at spill sites, particularly at sites in estuarine or coastal waters. The recovery of oil

in the water column by trawls and nets is limited by the viscosity of the oil and net tow speeds.

The containment of oil on the seabed is typically ineffective, except at natural collection points (e.g., depressions and areas of convergence). The collection of oil on the seabed by manual methods, in natural collection areas and along the shoreline after beaching, is effective but labor intensive and slow. Manual methods are also limited by the depths at which diver-based operations can be carried out safely. Dredging techniques have rarely been used because of limited recovery rates, the large volumes of water and sediment generated, and the problems of storing, treating, and discharging co-produced materials.

Finding 9. The lack of knowledge and lack of experience, especially at the local level, in responding to spills of nonfloating oils is a significant barrier to effective response. The knowledge base and response capabilities for tracking, containing, and recovering nonfloating oils have not been adequately developed. Even at the national level, no system has been developed for sharing experiences or documenting the effectiveness and limitations of various options. With limited experience and a lack of proven, specialized systems, responders have found it difficult to adapt available equipment for responses to spills of nonfloating oils.

Finding 10. Planning for spills of nonfloating oils is inadequate at the local level. Existing area contingency plans do not include comprehensive sections on the risk of spills of nonfloating oils or how to respond to them. To date, planning has focused primarily on spills of floating oils. Inventories of equipment, lists of specialized services, assessments of the resources at risk, and protection priorities have not been developed by area committees for nonfloating oils. Nor have they identified the risks (e.g., transportation patterns, volumes, and oil types), developed appropriate scenarios and response plans, or reviewed acceptable cleanup methods and end points. Existing plans have not been tested during drills or exercises to address deficiencies.

Finding 11. Funding levels for research, development, testing, and evaluation of spills of nonfloating oils are very low. The only active research programs currently under way either by government or industry groups are focused on emulsified fuel oils. Because the risk of spills of nonfloating oils is perceived as low relative to spills of floating oils, few research and development funds have been committed.

CONCLUSIONS

Conclusion 1. The tracking, containment, and recovery of spills of nonfloating oils pose challenging problems, principally because nonfloating oils suspended in the water column become mixed with large volumes of seawater and may

interact with sediments in the water column or on the seabed. The ability to track, contain, and recover nonfloating oils is critically dependent on the physical and chemical properties of the oils and the water or the oils and the other materials dispersed in the water column or on the seabed. The differences in these characteristics are often quite small, and little technology is available for determining them.

Conclusion 2. Although many methods are available for tracking nonfloating oils, the simplest and most reliable are labor intensive and cover only limited areas. More sophisticated methods have severe technical limitations, require specialized equipment and highly skilled operators, or cannot distinguish oil from water or other materials dispersed in the water column. Engineered systems for containing oil in the water column or on the seabed are few and only work in environments with low currents and minimal waves. Natural containment in seabed depressions or in the lee of topographical or man-made structures on the seabed is effective for containing oils, but these are not always available in the vicinity of the spill.

Conclusion 3. The recovery of oil from the water column is very difficult because of the low concentration of dispersed oil; hence, recovery is rarely attempted. If oil collects on the seabed in natural containment areas, many options for effective recovery are available, although most of them are labor intensive and access to response equipment is a problem.

Conclusion 4. The volume and frequency of spills of nonfloating oils is significant (although smaller than for floating oils) and, therefore, should be an integral part of planning for spill responses, particularly in areas where nonfloating oils are regularly transported. Transport by tank barges raises particular concerns, given the relatively high spill rates from these vessels. The risks of potential harm to water-column and benthic resources from nonfloating oils have not been adequately addressed in the contingency plans for individual facilities or geographic areas.

Conclusion 5. Inland barges are subject to greater risks of spills than tankers and coastal barges; consequently, spill rates for barges are likely to be higher than for tankers. However, the large difference between the overall spill rates, as well as the decreasing number of spills from tankers in recent years (post-OPA 90), raises concerns regarding the performance of barges.

RECOMMENDATIONS

The recommendations below are intended to improve the capability of the spill response community to respond to spills of nonfloating oils.

Recommendation 1. The U.S. Coast Guard should direct area planning committees to assess the risk of spills of nonfloating oils (i.e., oils that may be dispersed in the water column or ultimately sink to the seabed) to determine the resources at risk. In areas with significant environmental resources risk, area planning committees should develop response plans that include consultation and coordination protocols and should obtain pre-approvals and authorizations to facilitate responses to spills. Stakeholder groups should be educated about the impact and methods available for tracking, containing, and recovering oil suspended in the water column or on the seabed. Area committees in locations where there is a high risk of spills of nonfloating oils should include at least one scenario for responding to a nonfloating-oil spill in their training or drill programs.

Recommendation 2. The U.S. Coast Guard should improve its knowledge base, education, and training for responding to spills of nonfloating oils by including a scenario involving a spill of nonfloating oils in oil-spill response drills, by establishing a knowledge base and scientific support teams to respond to these types of spills, and by disseminating this knowledge to the federal spill-response coordinators and area planning committees as part of ongoing training programs. The information would help area planners assess the requirements for responding to nonfloating-oil spills.

Recommendation 3. The U.S. Coast Guard should support the development and implementation of an evaluation program for tracking oil in the water column and on the seabed, as well as containment and recovery techniques for use on the seabed. The findings of these evaluations should be documented and distributed to the environmental response community to improve response plans for spills of nonfloating oils.

Recommendation 4. Tests of area contingency plans and industry response plans for responses to spills of nonfloating oils should be required parts of training and drill programs.

Recommendation 5. The U.S. Coast Guard should monitor spill rates from tank barges to ascertain whether current regulatory requirements and voluntary programs will reduce the frequency and volume of spill incidents. If not, the Coast Guard should consider initiating regulatory changes.

Transportation of Heavy Oils and the Risk of Spills

An assessment of the risk of spills involves evaluating the frequency and consequences of accidents. A formal assessment of consequences should be based on a wide range of factors, including loss of life, financial loss, and short-term and long-term environmental impacts. In this chapter, the quantity of oil spilled is considered. Between 1991 and 1996, domestic tanker operations were responsible for nearly 75 percent of the ton-miles of petroleum movements. The major component is the coastal movement of Alaskan North Slope oil to U.S. ports on the West Coast.

DEFINITION OF TERMS

Group V oils are defined as persistent oils with a specific gravity of greater than 1.0 (Federal Register, 1996). *Heavy oil* is the term used by the response community to describe dense, viscous oils with the following general characteristics: low volatility (flash point higher than 65°C), very little loss by evaporation, and a viscous to semisolid consistency (NOAA and API, 1995). Examples of heavy oils include Venezuela crude, San Joaquin Valley crude, Bunker crude, and No. 6 fuel oil. The term heavy oil, in this chapter, also refers to residual oils (No. 5 and No. 6 fuel oil, Bunker C, and slurry oil), asphalt, coal tar, coke, carbon black, and pitch.

The term *nonfloating oil* is used to describe all oils that do not float on water, including oils that are denser than the receiving waters and either sink immediately or mix into the water column and move with the water as suspended oil; as well as the portion of oil that is initially buoyant but sinks after interacting with

sand. The committee chose not to use the term *sinking oil*, which implies that the oil sinks directly to the bottom, because it would not include all of the types of oil and spill conditions of concern in this report. *Emulsified fuels* (anthropogenic fuels manufactured by mixing water with liquid oils or solid hydrocarbon products), for example, often contain a surfactant to stabilize the emulsion and can be dispersed in the water column.

OVERVIEW OF QUANTITATIVE EVALUATION

The historical frequency of oil spills in general and heavy-oil spills in particular can be estimated from spill statistics. The committee used the U.S. Coast Guard (USCG) database on oil spills, refined with collaborative data from the Mineral Management Service (MMS), to estimate the probability and mean size of oil spills. The U.S. Army Corps of Engineers (USACE) database on the waterborne transportation of petroleum products and other cargoes in U.S. waters was used to assess the volume of oil transported. By combining the statistics on spills with the data on cargo tonnage, the committee was able to estimate historical spill rates on a barrel-per-ton-mile. Because future spill rates may be influenced by fluctuations in traffic and trading patterns, as well as changes in vessel design and operation, these estimates should be reevaluated to predict future rates. The committee has combined the best available data with its own collective judgment in these estimates. It should be noted that in only 20 percent of spills of heavy oil does a significant portion of the spilled oil sink or become suspended in the water column.

TRAFFIC AND TRADING PATTERNS

The USACE (1998a, 1998b) compiles detailed statistics on U.S. waterborne commerce, both foreign (imports and exports) and domestic (trade between U.S. ports). Domestic movements are further subdivided into coastal trade (involving carriage over the ocean) and internal trade (solely on inland waterways).

Figure 1-1 summarizes the data for all movements of crude oils and petroleum products during 1996 (the most recent data available). The USACE data are separated into 19 commodity codes, but for the sake of simplicity, the committee combined some categories (e.g., gasoline and kerosene) into seven categories (*crude oil*; *residual fuel oil*; *coke, tar, pitch, asphalt*; *gasoline, kerosene*; *distillate fuel oil*; *naphtha, solvents*; and *lubrication, grease, wax*). The substances in the *residual fuel oil* and *coke, tar, pitch, and asphalt* categories are heavy oils (i.e., they are either heavier than water or have the potential of sinking or becoming suspended in the water column upon weathering).

Crude oil accounted for 56 percent of the total tonnage of the petroleum commodities shipped in 1996; international trade accounted for 76 percent. The largest component of the domestic trade in crude oil was the coastal movement of

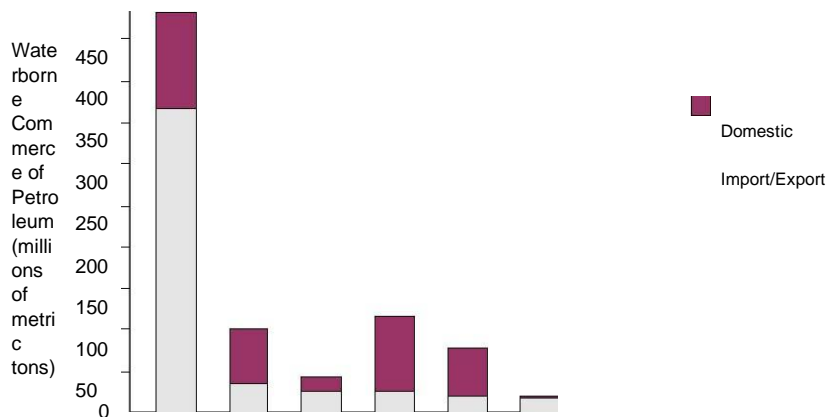


FIGURE 1-1 Import/export and domestic movements of all crude oil and petroleum products in metric tons during calendar year 1996. Source: USACE, 1998a.

Alaskan North Slope oil to U.S. ports on the West Coast. Internal trade (solely on inland waterways) accounted for less than 5 percent of the total. Nearly all of the international tonnage and 70 percent of the domestic tonnage was shipped in tankers. The very heavy crude oils produced in the United States (e.g., California crudes, such as San Joaquin and Santa Maria) were transported primarily through overland pipelines. Some very heavy crude oils were also imported (e.g., from Venezuela and Mexico), but these are believed to comprise only a small fraction of the total volume of imported crude oil.

Residual fuel oils are represented by a single code in the USACE database, which includes Nos. 5 and 6 fuel oils and slurry oils. Residual fuel oils accounted for 12 percent of the total tonnage of petroleum products shipped in 1996; coke, tar, pitch, and asphalt accounted for another 5 percent of the total. The combined total for heavy oils was, therefore, 17 percent of the total movement of all oil and petroleum products. Approximately 90 percent of the domestic waterborne trade of these heavy oils was transported by barge (whereas more than 90 percent of the international trade was transported by tanker). Overall, therefore, about 44 percent of heavy oils was transported by barge and 56 percent by tanker.

Group V oils are transported along the Gulf Coast from Corpus Christi to

New Orleans, from the Gulf Coast upriver to the St. Louis area, and along the Ohio River to ports further inland. Some Group V oils are also produced in St. Paul, Minnesota, and transported down the upper Mississippi River and up the Ohio River. Heavy residual oils are transported to power generating facilities through the inland waterways and along the East Coast and Gulf Coast and are exported from California to the Far East. Asphalt is moved in tankers and tank barges along the coasts (primarily along the Gulf and East coasts) as both imports and domestic cargoes, and in barges along the inland waterways. Some very heavy crude oils (e.g., Venezuela Boscan crude) are imported to East and Gulf coast refineries. Carbon black feedstock moved among refineries on the Gulf Coast and was exported from California. Bunkering fuels for ships (typically No. 6 fuel oil) are moved intra-harbor on barges. Most large commercial ships (including containerships, dry bulk carriers, tankers, cruise ships, as well as some tugboats) use these heavy oils as fuel, although these oils are not included in the statistics on the waterborne commerce of petroleum.

In Figure 1-2, the movement of crude oils and petroleum products for calendar year 1996 are shown in *metric ton-miles*. The *domestic ton-miles* are calculated by multiplying the metric tons of cargo being transported by the number of miles actually moved on the water. The average length of a domestic voyage was about 900 miles. For imports and exports, a constant of 100 miles per voyage was

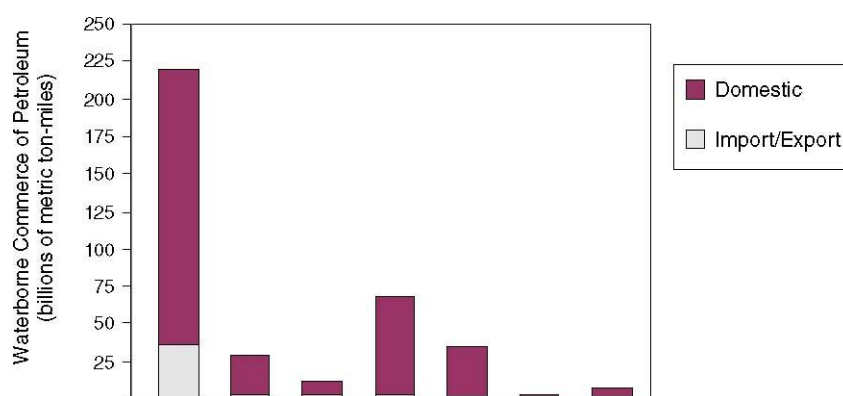


FIGURE 1-2 Import/export and domestic movements of crude oil and petroleum products in metric ton-miles during calendar year 1996. Source: USACE, 1998b.

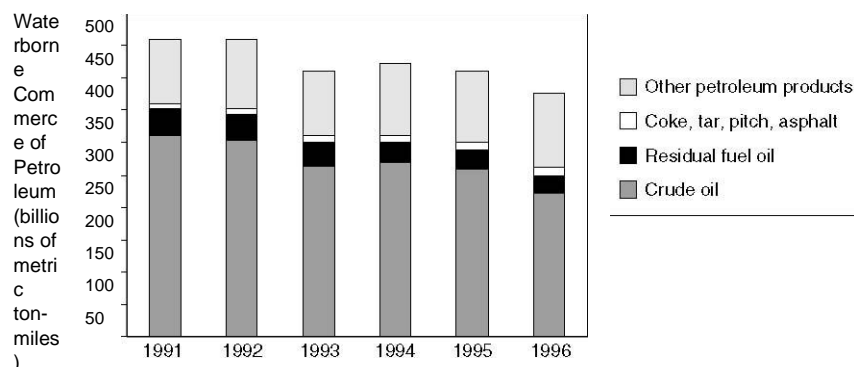


FIGURE 1-3 Movements of petroleum by commodity in metric-ton miles during calendar years 1991 to 1996. Source: USACE, 1998b.

assumed to account for the exposure of the vessel when transiting coastal waters and navigating U.S. waterways and channels. Movements of residual fuels comprised only 8 percent of the total.

The U.S. waterborne commerce of petroleum gradually decreased from 1991 to 1996 (Figure 1-3), primarily as a result of cutbacks in the coastal tanker trade of crude oil. During this period, the movement of residual fuel oils declined by 45 percent, due partly to improvements in the refining process, which produces less residual oil per barrel of crude oil refined. The movement of coke, tar, pitch, and asphalt, however, increased by 47 percent. Preliminary USACE figures for 1997 indicate that the domestic trade for coke, tar, pitch, and asphalt was up nearly 70 percent compared to 1996.

Movements of petroleum by tanker and tank barge are summarized for calendar years 1991 through 1996 in Figure 1-4 and Table 1-1. Figure 1-4 shows that domestic barge traffic remained relatively constant during the period. Tanker import and export traffic increased by about 5 percent per year, reflecting increases in imports of crude oil; the tanker domestic traffic declined by about 7 percent per year.

The U.S. Department of Energy (DOE, 1998) estimates that the percentage of petroleum consumption met by imports will increase from 49 percent in 1997 to 65 percent in 2020. This increase is partially a reflection of anticipated reductions in domestic production as oil reserves are depleted and a projected

1.1 percent per year increase in domestic energy consumption. The higher demand will probably be met through increased imports of long-haul crude oil (NRC, 1998). Future trends in the movements of heavy residual oils and asphalt are more difficult to quantify. The committee heard several presentations on the interest of some utility companies in using emulsified fuels (e.g., Orimulsion™) to generate power. Emulsified fuels do not float on water and are included in the

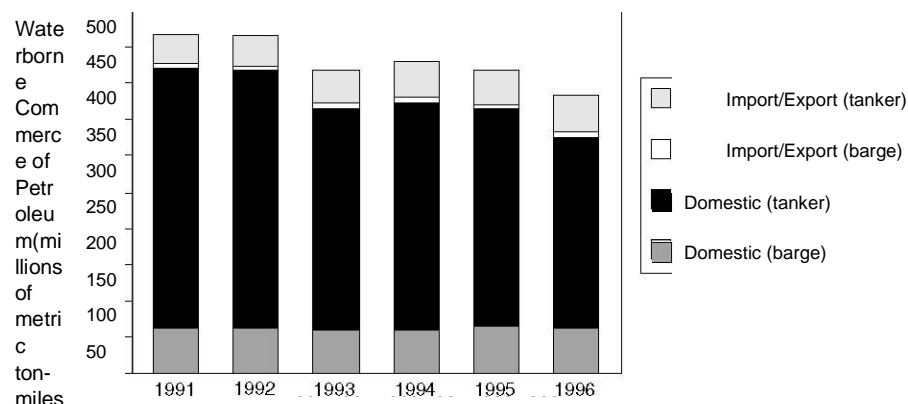


FIGURE 1-4 Movements of petroleum by tanker and tank barge in metric ton-miles during calendar years 1991 through 1996. Source: USACE, 1998b.

definition of nonfloating oils. Environmental groups responding to a proposal to burn a Venezuelan emulsified fuel for power generation in Manatee County, Florida, expressed concerns about cleaning up emulsified fuel spills once the oil had dispersed into the water column (Rains, 1998). Another concern was air quality because these fuels tend to be high in sulfur and other contaminants. At this point, it is difficult to project the consumption of emulsified fuels in the United States.

HISTORY OF SPILLS

The historical data on oil spills in U.S. navigable waters was derived from both the USCG and MMS databases. The USCG database includes reported oil spills of all sizes in U.S. navigable waters. Although these data are

TABLE 1-1 Movements of Petroleum by Tanker and Tank Barge during Calendar Years 1991 through 1996

U.S. Waterborne Traffic in Metric Ton-Miles ($\times 1$ billion)

1991-1996 Mean 1996 Totals Barge Tanker Barge Tanker

Crude Oil	4.9	266.8	4.9	215.4	Residual Fuel Oil	12.1	23.5	12.7	16.8	Coke, Tar, Pitch, Asphalt
7.4	2.5	8.7	3.6	Other Petroleum Products	37.8	60.5	27.8	76.1	Totals	62.2 361.3 64.1 311.9

comprehensive, they have not been uniformly maintained over the years. The MMS database has been consistently maintained but only covers spills of more than 1,000 barrels from tankers and tank barges. By comparing the USCG data with the MMS data, the committee has modified the USCG data, as necessary. Since 1991, there has been a dramatic reduction in the volume of oil spilled from vessels in U.S. waters (Figure 1-5). Losses from tankers since 1990 are less than one-tenth the volume of pre-1990 losses, and losses from barges are less than one-third the volume of pre-1990 losses. From 1973 to 1990, there were 18 spills of more than 25,000 barrels each. Since 1991, there has not been a single spill of this magnitude. This statistic may be fortuitous, however, and a very large spill is likely to occur in the future. Large future spills are likely to involve crude oil rather than heavy oil, however, because most heavy oils and asphalt are carried on barges and smaller tankers.

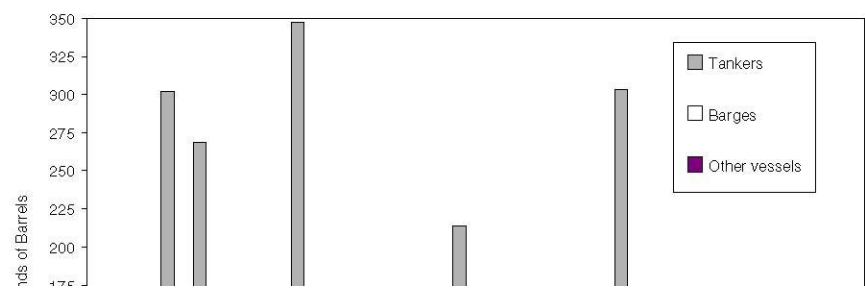
In light of the huge decrease in the number of oil spills since 1990, the committee based its projections on the 1991 to 1996 data. Because of inconsistencies in the data for small spills, the committee limited its analysis to spills of more than 20 barrels, which account for more than 98 percent of the spills in this period.

Spills in the USCG database are divided into two general categories based on their origin: vessels and facilities. Facilities include pipelines, ground

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Spills in the USCG database are divided into two general categories based on their origin: vessels and facilities. Facilities include pipelines, ground



transportation onshore facilities (e.g., shoreside structures, such as terminals, refineries, and storage tanks), and offshore facilities (e.g., drilling rigs and production platforms). Vessels are subdivided into tankers, tank barges, and other vessels (ships not engaged in the transport of petroleum). The number and volumes of spills are summarized in Table 1-2. Although tankers were the primary source of marine oil spills prior to 1990, facilities have been responsible for a majority of the incidents and most of the total spill volume since then. Pipelines have been the source of more than 50 percent of the spill volume from facilities, and tank barges for more than 75 percent of the spill volume from vessels.

The USCG database provides a description of the substance spilled in each event. Table 1-3 summarizes data for all spills of more than 20 barrels of nonfloating oils (i.e., products with the potential to sink or become suspended in the water column when weathered or mixed with sediment). These products include asphalt, coal tar, carbon black, bunker C, and Nos. 5 and 6 fuel oils. Spills of nonfloating oils constitute about 23 percent of the total volume of oil spilled. From 1991 to 1996, the average number of spills of nonfloating oils was 16 per year, with an average volume of 785 barrels per spill. Tank barges were responsible for 28 percent of incidents and 80 percent of the total spill volume.

Releases of 20 barrels or more from facilities were generally spills of floating oils (either crude oil or gasoline). The largest reported spills of heavy oils from a facility was a spill of 929 barrels of No. 6 fuel oil in Pearl Harbor, Hawaii. In contrast, there were six spills from tank barges of more than 4,000 barrels each, all of them of heavy oils (either No. 6 fuel oil or slurry oil). The average volume of heavy-oil spills from barges was 2,254 barrels, and the largest spill during this period was about 18,000 barrels. Spills were widely distributed geographically (Figure 1-6), with the highest frequency from vessels in the Gulf of Mexico. Some of the oils categorized as heavy oils in the USCG and MMS databases are less dense than seawater and will remain afloat under certain environmental conditions. To determine the frequency of nonfloating-oil spills, the committee examined heavy-oil spills of more than 20 barrels (a total of 93 spills)

TABLE 1-2 Oil Spills of 20 Barrels or More in U.S. Waters by Origin (1991 to 1996)

	No. of Total Spill		Average Spill Incidents		Volume (barrels)	Volume (barrels)
Tankers	47	(8%)	26,508	(8%)	564	
Tank barges	100	(17%)	100,785	(32%)	1,008	
Other vessels	44	(7%)	11,474	(4%)	261	
Facilities	415	(68%)	173,945	(56%)	419	
1991 to 1996 totals	606		312,713			
Average per year	101		52,119			

TABLE 1-3 Heavy-Oil Spills of 20 Barrels or More in U.S. Waters by Origin (1991 to 1996)

	No. of Total Spill Average Spill Incidents		Volume (barrels)	
	Volume (barrels)			
Tankers	17	(18%)	6,442	(9%)
Tank barges	26	(28%)	58,591	(80%)
Other vessels	22	(24%)	3,877	(5%)
Facilities	28	(30%)	4,083	(6%)
1991 to 1996 totals	93		729,913	
Average per year	16		12,166	

to identify the spills in which a significant fraction of the oil did not float. These spills accounted for about 20 percent of the heavy-oil spills and about 50 percent of the volume of heavy oil spilled during this period. The relatively high volume of nonfloating-oil spills, as compared to the relatively low number of nonfloating oil spills (20 percent), is attributable to a few large heavy-oil spills during the period. One spill in particular, the *Morris J. Berman* spill of nearly 18,000 barrels of heavy oil in 1994, strongly influenced the statistics. This event alone could not explain why the average volume of nonfloating-oil spills should differ from the average volume of heavy-oil spills and considers the high volume of nonfloating-oil spills to be an anomaly caused by the limited statistics. Assuming that nonfloating-oil spills comprise 20 percent of the heavy

oil spills by number, the committee estimates that the average per year (20 percent of 16) will be three or four nonfloating-oil spills. Assuming that the average volume of nonfloating-oil spills is the same as for heavy-oil spills (i.e., 785 barrels per spill), the projected volume will be about 2,500 barrels per year.

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PROJECTIONS OF SPILLS

To assess the risk of heavy-oil spills from vessels, the committee used ton-miles as a measure of exposure and the quantity of oil spilled as a measure of the consequences of accidents. Based on this approach, the spill rate is defined as the ratio of the historic volume of oil spilled to the historic movements in ton-miles and is expressed as barrels spilled per billion ton-miles. Tankers and tank barges were responsible for 89 percent of the heavy-oil spills from 1991 to 1996. The spill rates for all petroleum cargoes and for heavy-oil cargoes are presented in Tables 1-4 and 1-5, respectively. Barges had higher spill rates for all petroleum cargo than tankers during this period. The spill rates for heavy oil carried by barges were higher by a factor of two than the spill rates for all petroleum cargoes. The spill rates in Table 1-5 are for heavy oils, some of which remain afloat under certain environmental conditions. Only about 20 percent of the heavy oil spilled is expected to exhibit nonfloating behavior.

The volume of future spills will be affected by changes in the design and operation of tankers and barges. Decreases in both the number and volume of oil spills are expected as the fleet completes the transition to double-hull construction (NRC, 1998).

The spill statistics suggest that the barge industry has lagged behind the tanker industry in improving operations since the Oil Pollution Act of 1990 (OPA 90) was enacted. Major barge accidents from 1991 to 1996 had a variety of causes, including structural failure, capsizing, allisions, collisions, and groundings. The barge industry has instituted a number of voluntary programs to improve its environmental performance and safety record. These include the American Waterways Operators Responsible Carrier Program and partnerships with the USCG.

TABLE 1-4 Spill Rates for All Petroleum Cargoes in U.S. Waters (1991 to 1996)

Movement of Petroleum		Spill Rate
(billions of metric ton-miles)	Oil Spill Volume (barrels)	(barrels spilled per billion metric ton-miles)
Tanker 361,344	62,216,796	170
Barge 12,448	18,796,270	151

TABLE 1-5 Spill Rates for Heavy Oil in U.S. Waters (1991 to 1996)

Movement of Heavy Oil		Spill Rate
(billions of metric tons)	Oil Spill Volume (billions of metric tons)	(barrels spilled per billion metric ton-miles)
Tanker 26.1	1,074	41
Barge 10.6	9,765	499

From 1991 to 1996, the percentage of tonnage carried in double-hull vessels was approximately 13 percent for tankers and 60 percent for barges. Theoretical comparisons with single-hull vessels (NRC, 1998) indicate that double-hulled tankers and tank barges will be involved in four to six times fewer spills. If all vessels trading from 1991 to 1996 had been double-hull, the number and volume of heavy oil spills could have been reduced by about 30 percent. In accordance with the provisions of OPA 90, the transition to double-hull vessels will be completed by January 1, 2015. cargo movements in U.S. waters have increased at an average rate of 2 percent per year for the past 10 years. Further growth will tend to increase the number of spills from bunkers on freighters and other commercial vessels, and a move is under way to protectively locate bunker tanks on larger tankers and a few large container ships, which should lead to a reduction in the spillage of fuel oil.

2

Behavioral Models and the Resources at Risk

BEHAVIORAL MODELS FOR SPILLS OF NONFLOATING OILS

Based on an understanding of the physical and chemical properties of non-floating oils (mostly from observations of past spills), Behavioral models have been developed (Michel et al., 1995). These models are descriptive, qualitative predictions of how oils with a density near or higher than the density of the receiving water might behave. The key factors that determine the behavior of spilled nonfloating oils are: water density, current speed, and the potential for interaction with sand.

Water Density

If the ratio of the density of oil to the density of the receiving water is greater than 1.0, the oil will not float. If it less than 1.0, the oil will float. If it is within a few percent of 1.0, then the oil is much more likely to become submerged by wave action. Figure 2-1 shows the relationship between the density and salinity of the water for a fixed temperature. The density is also shown in terms of the API (American Petroleum Institute) gravity. Oils with higher densities than the receiving water (above the line) will sink; oils with lower densities that the receiving water (below the line) will initially float.

Current Speed

If current speeds are greater than 0.1 m/s, nonfloating oils will be suspended in the water column. If the currents are very slow, oils heavier than the receiving water will sink to the bottom (Nielsen, 1992).

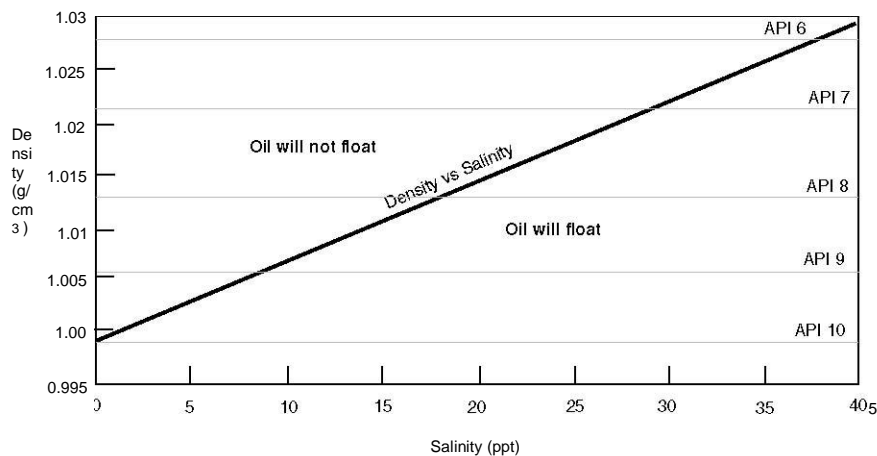


FIGURE 2-1 The relationship between water density and salinity at a temperature of 15°C. The density is also shown in API gravity units (right vertical axis).

Potential for Interaction with Sand

When floating oil is mixed with 2 to 3 percent sand, it becomes heavier than water and sinks (Michel and Galt, 1995). The density of sand grains is much higher than the density of silt or clay particles. Figure 2-2 is a schematic illustration showing the relationships among these factors and how they affect the short-term behavior of nonfloating oils. The density of oil relative to the receiving water is important only in determining whether the oil will initially float. Significant currents can keep heavier-than-water oil suspended in the water column. Any oil still on the surface or suspended in the water column will still sink if it mixes with sand also suspended in the water column. The models in Figures 2-3 and 2-4 illustrate combinations of factors that influence the behavior of nonfloating oils.

Oil Lighter than Water, Low Sand Interaction

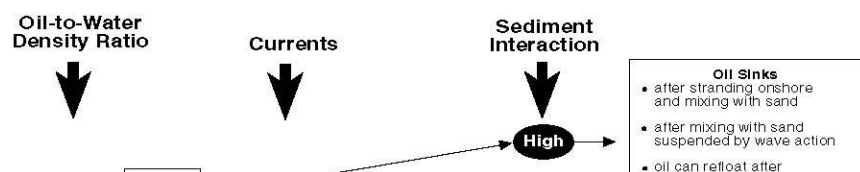
If the oil-to-water density ratio is less than 1.0, the oil will initially float. At 15°C, oils with an API gravity above 6.5 (Figure 2-1) will still be lighter than seawater with a salinity of 35 parts per thousand. These oils will float, at first in contiguous slicks that may quickly (often within a few kilometers) break up into widely scattered fields of large mats and tar balls that can spread over large distances and become reconcentrated again in convergence zones (Figure 2-3a).



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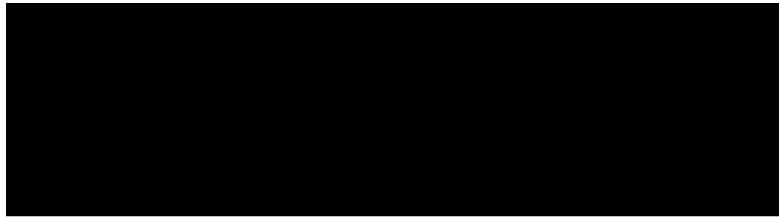
SPILLS OF NONFLOATING OILS



Because of the higher viscosities of heavy oils, the tar balls are more persistent than for spills of light and medium oils. More important, however, as the density of the oil approaches that of the water, these tar balls tend to become “overwashed” by wave action making them very difficult to track and slowing most weathering processes (e.g., evaporation or formation of a “skin”) (Lee et al., 1989). Furthermore, if oil emulsifies, the emulsion can contain 50 to 80 percent water making the density of the oil even closer to the density of the water. Evaporation of emulsified oils is slow, and, unless they interact with sediment, they will remain floating. When tar balls are eventually stranded, sometimes hundreds of kilometers away from the original spill site, the oil can still be relatively fresh and have a significant impact on the water surface and shoreline resources (see Box 2-1). Because the oil still floats, this type of spill is not considered further in this report. After the evaporative loss of the lighter fraction, particularly of the cutter stock in bunker fuels, the remainder might sink, but this has been observed at only one spill (Lee et al., 1992; Michel and Galt, 1995).

Oil Lighter than Water, High Sand Interaction

Spilled oil that is lighter than the receiving water can still sink, either by becoming stranded on sand beaches or by mixing with sand in the surf zone. In several spills, such as the IXTOC I (Gundlach et al., 1981), *Alvenus* (Alejandro and Buri, 1987), and *Haven* (Martinelli et al., 1995), heavy oils floated initially



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AVIORAL MODELS AND THE RESOURCES AT RISK

FIGURE 2-3a Oil-to-water density < 1.0 ; low sand interaction; majority of oil floats.

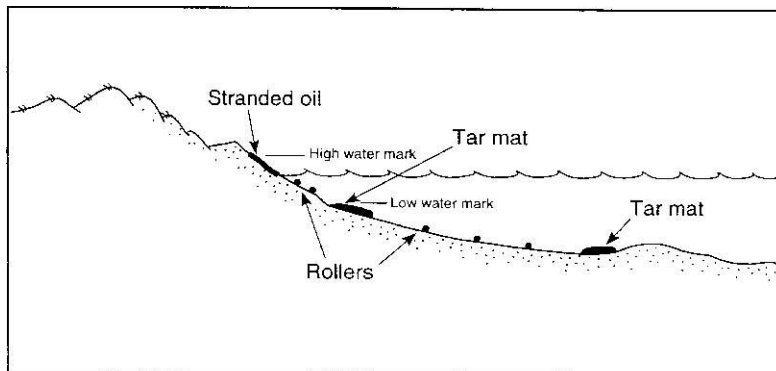


FIGURE 2-3b Oil-to-water density < 1.0 ; oil initially floats but sinks after stranding.

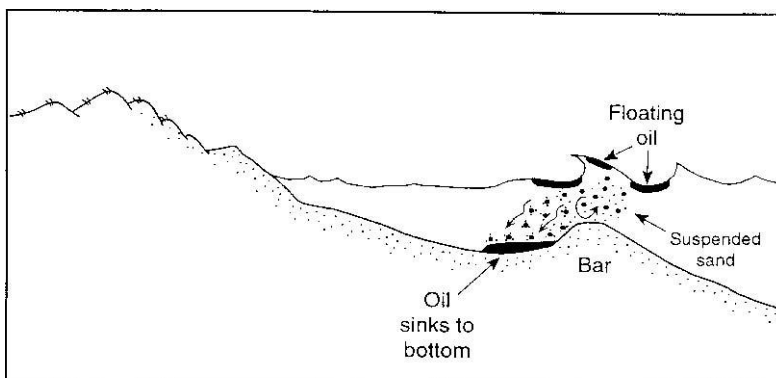
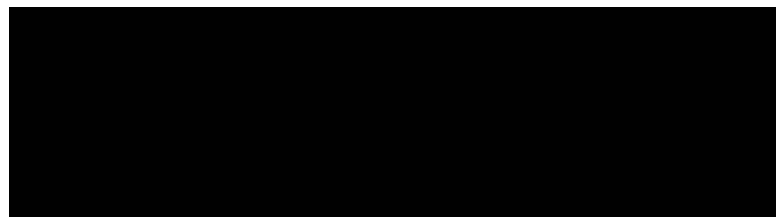


FIGURE 2-3c Oil-to-water density < 1.0 ; oil initially floats but sinks after mixing with sand in water.



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SPILLS OF NONFLOATING

FIGURE 2-3d Oil-to-water density > 1.0 ; low currents; majority of oil sinks.

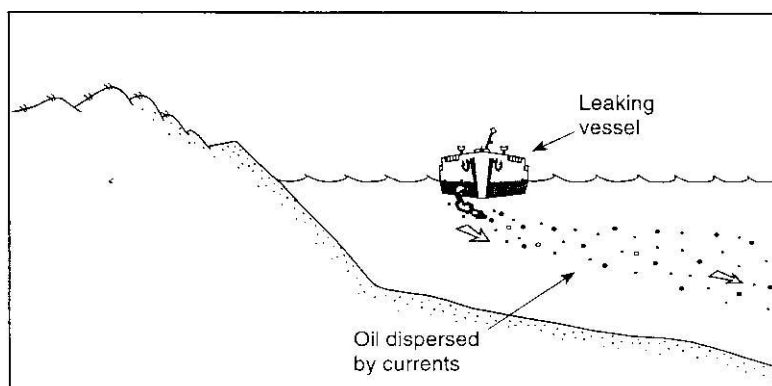


FIGURE 2-3e Oil-to-water density > 1.0 ; high currents; oil disperses in water column.

and became stranded on sand beaches but then were eroded from the beaches and sank, forming tar mats between nearshore bars. In these cases, the oil was too viscous to penetrate the sand; instead, the sand coated the oil layers and/or mixed with the viscous oil as it was eroded from the beaches by wave action. The oil/sand mixture contained only a few percent sand and was deposited at the toe of the beach just offshore (Figure 2-3b). The distribution of sunken oil/sand tar mats was highly variable, ranging from thick, continuous deposits tens of meters long to small widely scattered tar balls. If there was current activity, especially generated by waves breaking on the shore, the oil/sand mixture formed cigar-shaped “rollers” that were scattered on the bottom or accumulated into mats in the

BOX 2-1 The Nestucca Spill

The Nestucca spill in December 1988 released 5,500 barrels of heavy marine fuel oil with an API gravity of 12.1 three kilometers off Grays Harbor, Washington. The spilled oil quickly formed tar balls that moved below the water surface (i.e., were overwashed by waves) and could not be tracked visually. Two weeks later, oil unexpectedly came ashore along the coast of Vancouver Island, Canada, 175 kilometers north of the release site, contaminating 150 kilometers of shoreline (NOAA, 1992). The oil had a significant effect on the large number of marine birds wintering in the area. Of the 10,300 birds collected, about 9,300 were either already dead or died in treatment centers. Many more were believed to have died but were never collected.

troughs of offshore bars. These rollers picked up more sand and shell fragments as they moved, making them heavier.

Experts have long been concerned that oil spilled in turbulent waters with heavy loads of suspended silt and clay (i.e., glacial meltwater, such as upper Cook Inlet and the Yukon River) would mix with the sediments and sink (Kirstein et al., 1985). Laboratory studies have shown that oil mixed with water with heavy suspended sediment loads does adhere to the sediments, with concentrations up to 0.1 gram of oil per gram of solid (McCourt and Shier, 1998). However, this process is likely to result in the deposition of oiled sediments rather than the transport of bulk oil to the bottom.

During the Tampa Bay and *Morris J. Berman* spills (Box 2-2), response teams observed that floating oil sank by mixing with sand in nearshore waters, without coming into contact with intertidal sediments on the shoreline (Figure 2-3c). If a floating slick of heavy oil drifts into shallow water along an exposed shoreline, it is more likely to be mixed into the water column by wave turbulence. If the bottom is sandy, the sand may be suspended in the water column by waves and could mix with the oil. The suspended sand concentrations in breaking waves is commonly 300 to 500 mg/L and can easily reach 5,000 mg/L (Kana, 1979), compared to typical concentrations of fine-grained suspended sediment of 20 mg/L in estuaries and nearshore waters. Because the specific gravity of quartz is 2.65, it only takes 2 to 3 percent sand by weight mixed into oil to make it heavier than seawater. Again, high viscosity is an important factor, because viscous oils tend to form large tar balls (rather than small droplets) that pick up sand. The oil/sand mixture can be carried by long shore currents and deposited in relatively sheltered areas where it can form extensive, thick layers of oil/sand on the bottom.

BOX 2-2 The Morris J. Berman Spill

On January 7, 1994, the Morris J. Berman barge ran aground just offshore San Juan, Puerto Rico, releasing about 18,000 barrels of heavy fuel oil (API gravity of 9.5). Although much of the oil floated, response teams reported finding oil on the bottom within the first 24 hours, and eventually mats of submerged oil were found in both offshore areas and on the landward side of nearshore reefs. Most of the sunken mats were within 1 or 2 kilometers of the vessel, although one site was 110 kilometers from the release site. The oil adhered to rocky surfaces and coated seagrass beds (Burns et al., 1995). It was later determined that most of the oil on the bottom had sunk without coming into contact with the shore (Michel et al., 1995). The oil contained a few percent sand and could readily refloat in seawater and recontaminate the adjacent shoreline once it was separated from the sand. Three different methods were used to remove the oil: diver-directed vacuuming of the more liquid oil; manual pickup by divers of the more viscous patches; and dredging of large deposits in a small bay (Burns et al., 1995; Ploen, 1995).

Oil Heavier than Water, Low Currents

If the density of the oil is higher than the density of the receiving water, some of the oil can form a sheen, but the majority does not float. As the oil mixes into the water column, it forms small droplets, ranging in size from approximately 0.5 microns to several millimeters. If the water column is strongly stratified, some of the oil droplets may accumulate on the pycnocline, provided that they are less than the underlying water. If current speeds are low, oil that is more dense than the water sinks and accumulates on the bottom (Figure 2-3d). Direct sinking in low-flow areas was observed after the *Sansinena* oil spill (see Box 2-3) while it was docked at a pier (Hutchison and Simonsen, 1979), and the *Mobiloil* spill (in the lee of the grounded vessel) (Kennedy and Baca, 1984).

Suspended oil can sink when the oil is transported into low-flow areas similar to the way fine-grained sediments are deposited in estuaries during slack periods of the tide. However, oil droplets can be readily remobilized by tidal currents, so long-term accumulation is likely only in areas where wave-generated, tidal, or riverine currents have little effect. Examples of such areas include abandoned channels, dredged channels or pits, depressions adjacent to piers caused by “propeller wash” of anchoring vessels, dead-end canals, and the lee side of natural and man-made structures. If the oil does accumulate on the bottom, the oil droplets recombine into pools of liquid oil that can be tens of centimeters thick. Evaporation and photo-oxidation of sunken oil are much slower than for floating oil slicks, and the oil tends to remain as a liquid on the bottom. Dissolution from thick mats is slow (Lee et al., 1989). Observations of spills have shown that this

BOX 2-3 The Sansinena Spill

On December 17, 1976, the tanker SS Sansinena exploded while loading fuel in Los Angeles harbor, releasing more than 33,000 barrels of bunker fuel oil (API gravity 7.9 to 8.8). Approximately 200 barrels floated, but the majority of the oil sank. Divers reported large pools of oil up to three meters deep on the harbor bottom, where the oil had settled into depressions (Hutchison and Simonsen, 1979). Initial recovery was by diver-directed vacuum removal and separation in tanks mounted on a barge, but this method was abandoned because of the great difficulty of moving the suction head along the uneven bottom. Next, diver-guided hydraulic pumps were used on thick accumulations close to the pier. Specially designed pumping units consisting of a prime mover and hydraulic pumps on a barge were then used to collect oil from outer depressions. Nearly 16,000 barrels were recovered during the initial recovery operations. Eventually, a suction head and pump device was designed on site for recovery of the large quantities of oil still remaining on the bottom. This device had to be operated according to directions from a diver because some of the oil pools had become silted over and even had marine life living in the silt, making the oil difficult to locate. During the next 90 days, 10,300 barrels were recovered from the harbor bottom. Over a 16-month period, 33,000 barrels, nearly all of the spilled volume, were recovered.

type of oil does not initially adhere to or mix with large amounts of fine-grained sediments under water.

Oil Heavier than Water, High Currents

If currents are greater than about 0.1 m/s, oil droplets stay suspended in the water column and disperse (Figure 2-3e). In rivers and most nearshore coastal settings, the oil is not likely to accumulate on the bottom because the currents are strong enough to keep it suspended in the water column. For example, little or no oil accumulation on the bottom was observed after heavy-oil spills in the Columbia River (Kennedy and Baca, 1984), the Mississippi River near Vicksburg (Weems et al., 1997) and in Puget Sound (Yaroch and Reiter, 1989). However, even in strong currents, heavy oils can accumulate in sheltered areas. For example, after about 4,760 barrels of slurry oil were spilled into the Mississippi River, nearly 50 percent of the oil was recovered from the bottom, but only from the lee created when the leaking barges were pushed at a 45-degree angle against the river bank (Weems et al., 1997). No other significant amounts of oil were found in extensive surveys. The oil was not expected to adhere initially to debris or

vegetation as it mixed into the water column because fresh oil generally does not stick to water-wet surfaces.

Spills of Emulsified Fuels

Emulsified fuels (anthropogenic fuels manufactured by mixing water and surfactants with liquid oils or solid hydrocarbon products) behave very differently. Because only one small accidental spill of emulsified fuel has been reported (Sommerville et al., 1997), our understanding of the behavior of these oils is based mostly on research conducted specifically with OrimulsionTM, an emulsified fuel manufactured from bitumen produced in Venezuela. Laboratory and field experiments on emulsified oils have been conducted in Canada (Jokuty et al., 1995), the United States (Deis et al., 1997; Ostazeski et al., 1997), Venezuela, and Europe (Sommerville et al., 1997). In freshwater, the surfactant in emulsified fuels will maintain its effectiveness over longer periods of time, preventing recoalescence of the bitumen particles. In low-flow conditions (Figure 2-4a), the spilled oil will settle to the bottom of the water column. In these quiescent conditions, the oil has little potential for mixing with sediment, except in the long term by bioturbation.

In freshwater with currents, the predispersed bitumen particles will slowly descend to the bottom down current (Figure 2-4b), and the surfactant will remain effective for a limited period of time, preventing recoalescence of the particles. The eventual fate of the bitumen particles is uncertain, particularly in terms of interaction with fine-grained sediments. Because the bitumen particles are highly adhesive, it is likely that they will adhere to suspended sediments and eventually be deposited in low-flow zones.

In saltwater, the emulsified oils will initially form clouds of dispersed particles in the upper 1 or 2 meters of the water column (Figure 2-4c). Laboratory and field tests have shown that surfactants quickly lose their effectiveness in saltwater. In areas with high bitumen concentrations, the particles can recoalesce and rise to the surface, forming tarry slicks. In wave-tank experiments, the tar coated the glass sides of the wave tank (Jokuty et al., 1995). However, in open water, the particles would disperse. Therefore, options for containing and recovering spilled emulsified oils quickly decrease over time.

Refloating Mechanisms

Sunken oil can refloat, creating significant problems for spill-response teams and a chronic source of exposure. In the *Morris J. Berman* spill, months after the spill large quantities of liquid oil refloat, recontaminating beaches and exposing resources in the water-column and on the surface to oil after the bulk of the floating oil had been recovered. There are three mechanisms for refloating oil:

(1) still-buoyant oil can separate from the sand; (2) wave-generated currents can



FIGURE 2-4a Emulsified oil in freshwater; low currents; oil sinks.

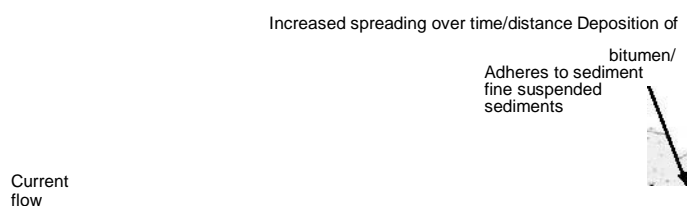


FIGURE 2-4b Emulsified oil in freshwater; high currents; oil disperses and eventually sinks.

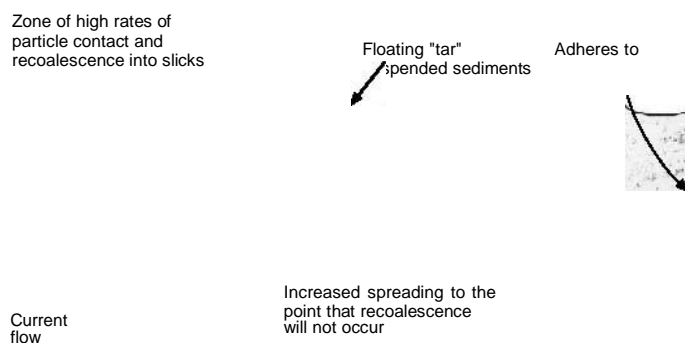


FIGURE 2-4c Emulsified oil in saltwater; high currents; oil initially disperses then coalesces into tarry slicks.

loosen and resuspend pieces of buoyant oil from the bottom; and (3) increases in water and/or oil temperature can make the oil less viscous and/or more buoyant. Spill-response teams often assume that oil refloats because of a short-term change in temperature (e.g., in the afternoon when the water warms up). However, it is unlikely that short-term changes in temperature can cause oil-sand mixtures to sink in one situation and float in another because differential oil and water expansion coefficients are very small. Hence, oil on the bottom and the overlying water expand at about the same rate, and relative changes in density are small.

A more likely mechanism for refloating sunken oil is the physical separation of the sediment from oil (Michel and Galt, 1995). If one dumps sand into a can of motor oil, the sand falls through the oil by gravity and forms a layer of sand on the bottom. Settling rates through more viscous oils would be longer but could be increased in the field by wave motion and other physical processes. In the *Morris J. Berman* spill, buoyant oil droplets were observed breaking off layers of oil on the bottom, somewhat like droplets being released from the heated mass in lava lamps. These droplets are believed to have been formed as the still-buoyant oil became less viscous during the daytime heating of the water, allowing the oil to separate from the sand and droplets to break away from the submerged oil by wave action generated by the land-sea breezes.

POTENTIAL EFFECTS OF NONFLOATING-OIL SPILLS

When a floating oil is spilled, response teams typically have to recover oil slicks, clean up oil stranded on the shoreline, and recover and treat animals along the shoreline and in the water. Their focus is on the water surface and shoreline, the so-called "bath-tub ring." Life forms in the water column and benthic habitats are usually considered to be at less risk of exposure and injury from floating oil slicks than from nonfloating oils. Table 2-1 compares the predicted impacts of nonfloating-oil spills and floating-oil spills on shoreline and benthic habitats, major assemblages of fish and wildlife, and human-use resources. Spills of nonfloating oils are expected to have less impact on shoreline habitats because smaller amounts of oil are likely to be stranded and cleanup activities are likely to be less disruptive (Scholz et al., 1994). Any oil that is stranded, however, is likely to be very persistent because of the slow natural removal rates for heavy, adhesive oils. Nonfloating oils are less likely to penetrate porous sediments or wetland vegetation because of their high viscosities and adhesiveness (Harper et al., 1995). Impacts on water-surface resources are also expected to be lower from spills of nonfloating oils because of the significant reduction in the amount of oil on the water surface. If the oil refloats, it could be a chronic source of exposure to both water-surface and shoreline resources, but the risk is likely to be limited to areas adjacent to sunken oil deposits (NOAA, 1995).

All water-column and benthic habitats are at increased risks from spills of

TABLE 2-1 Relative Changes in the Resources at Risk from Spills of Nonfloating Oils Compared to Floating Oils

Resource at Risk Risks from Spills of Nonfloating Oils Compared to Spills of Floating Oils	
Rocky Shores (-)	Less oil is likely to be stranded, but oil that is stranded is usually stickier and thicker.
Beaches (-)	Viscous oils are less likely to penetrate porous sediments. Oil is often stranded as tar balls, which are easy to clean up on sand beaches. Chronic recontamination is possible for months.
Wetlands and Tidal Flats (-)	Less oil coats vegetation. Because the oil does not refloat with the rising tide, any oil stranded on the lower intertidal zone will remain, thus increasing risk to biota. Cleanup of oil from these environments is very difficult, and natural recovery takes longer.
Water Surface (-)	Less oil remains on the water surface. Oil tends to form fields of tar balls. Potential for chronic impacts from refloats over time is high.
Water Column (+)	Oil can increase exposure as it mixes in the water column. Risks increase if oil refloats after separation from sediments. When submerged, slow weathering of the more toxic components can be a chronic source of risk.
Benthic Habitats (++)	Risks are significantly increased for areas where heavy oils accumulate on the bottom. Slow weathering rates further increase the risk of chronic exposures. Smothering and coating can be heavy. Bioavailability varies with oil and spill conditions.
Birds (-)	Less oil remains on the water surface, so direct and acute impacts are lower. There is a high probability of chronic impacts from exposure to refloats and re-stranded tar balls on shores after storms.
Fish (+)	Risks are increased to all fish, especially benthic or territorial fish, in areas where oil has accumulated on the bottom.
Shellfish (++)	Risks are increased to all shellfish, especially species that spend most of their time on the sediment surface (e.g., mussels, lobsters, crabs). Risk of chronic exposure from bulk oil, as well as the slow release of water-soluble PAHs (polynuclear aromatic hydrocarbons), is high.
Marine Mammals (-)	Less oil remains on the water surface, and the potential for contamination of marine mammals on shore is lower. Oil in the water column is not likely to have an impact on highly mobile species. Benthic feeders (such as manatees) could be exposed from accumulations on the bottom, which would weather slowly.
Sea Turtles (-)	Less oil remains on the water surface, and less oil is stranded on nesting beaches.

Note: (-) indicates a reduction in risk. (+) indicates an increase in risk. Actual risks for a specific spill will be a function of the oil's composition and properties, the spilled oil's risk to water treatment facilities. Closures are likely to be longer.

nonfloating oils (Scholz et al., 1994). Oils that quickly sink or are suspended in the water column have greater impacts on organisms in the water column because more of the water-soluble fraction of the oil dissolves rather than evaporates. Oil on the surface is primarily weathered by evaporation to the atmosphere and, to a lesser degree, to the water column by dissolution. Oils suspended in the water column or deposited on the bottom are less likely to evaporate but more likely to dissolve, although the water-soluble fraction of heavy oils is usually very low. Consequently, the water column can have higher concentrations of toxic fractions from nonfloating oils than from floating oils. Dissolution tends to be a slower process than evaporation (Lee et al., 1989, p.37), thus increasing potential exposure times. In the *Morris J. Berman* spill in Puerto Rico, divers observed dead fish, living fish with lesions and tumors, and many lethargic territorial fish in nearshore waters adjacent to the spill site (Vincente, 1994). Mobile species may be able to move to uncontaminated areas, thus reducing their exposure.

Nonfloating oils are often high in polynuclear aromatic hydrocarbons (PAHs), which are the primary source of both acute and chronic toxicity to aquatic organisms. Naphthalene compounds (two-ringed aromatics) have been shown to be more toxic than lightweight aromatics, such as benzene and toluene (Anderson et al., 1987). In terms of the water-soluble fraction, bunker C is as toxic as diesel oil (Markarian et al., 1993). Thus, even though heavy residual oils are not usually considered to be acutely toxic to fish (NOAA and API, 1995), oils that are mixed into the water column without weathering by evaporation on the water surface first may have a higher fraction that dissolves and, therefore, may be more acutely toxic to organisms in the water column.

Technologies and Techniques

In this section, the current technologies and techniques for locating, tracking, containing, and recovering spills of nonfloating oils are summarized. The presentation is divided into subsections on spill modeling and information systems, spill tracking and mapping, and oil containment and recovery. The summary focuses on the current state of practice and identifies systems that have been applied or proposed for application to submerged oil. Summaries of the use of these techniques in selected spills in which substantial quantities of oil were submerged or deposited on the seabed can be found in Michel and Galt (1995) and Michel et al. (1995). An annotated bibliography of the literature can be found in NOAA (1997).

MODELING AND INFORMATION SYSTEMS

The following discussion begins with a brief overview of the state of the art in spill modeling and information systems (Box 3-1). This is followed by the extension of spill models to include the subsurface transport and deposition of dispersed oil and a history of the use of these models to “hindcast” (analyze a past event) several large accidental spills in which subsurface transport was important. The use of models to forecast and hindcast spills involving substantial amounts of submerged oil is then summarized.

Recent comprehensive reviews of the state of the art in spill modeling (Spaulding, 1995; ASCE, 1996) show that the models have evolved quite rapidly taking advantage of the availability of low-cost, high-powered workstations and personal computers with full color graphics, extensive storage, and communications systems. A simultaneous evolution in the software has enabled a clear

BOX 3-1 Oil-Spill Model

The core of an oil-spill model is a series of algorithms that represent the processes controlling the transport and fate of oil released into the environment. The transport portion of the models describes the physical movement of oil by winds, currents, waves, and associated turbulence. The fate of the oil is normally represented in terms of spreading, evaporation, dispersion or entrainment, dissolution, emulsification, biodegradation, sinking or sedimentation, photo-oxidation, and oil-shoreline and oil-ice interactions. These processes are typically formulated individually with links to other processes or environmental data as necessary to describe the oil's fate. The algorithms may be altered or changed entirely depending on the environment in which the oil is spilled or transported.

Input to oil-spill models normally includes a description of the study area, the oil-spill scenario (spill location, release rate and schedule, and oil type), and environmental conditions. The study area is normally described using a map of the region of principal interest. The environmental forcing data typically consist of estimates of the temporally and spatially varying wind and current fields for the forecast period (typically a few days for spill-response support) and an estimate of the mean water temperature. These environmental data fields may be provided by supporting hydrodynamic and meteorological models for the study area or from observations. The model output typically includes animations of the movement of the surface oil and the oil mass balance by major environmental compartments (surface, water column, onshore, evaporated, seabed, biodegraded), the oil thickness and areal extent, and the oil properties (viscosity, water content) versus time.

separation to be made between the model software and supporting environmental data (Spaulding and Chen, 1994). With model/data separation, the models can be rapidly applied to new locations (Anderson et al., 1993). Many models have been linked with geographic information systems (GISs) or have limited GIS functions embedded in the model systems (Galagan et al., 1992). With the incorporation of the GIS and other data management tools, users can input, organize, manipulate, archive, and display georeferenced information relevant to spill modeling. With the extension of spill models to include supporting data management tools, spill information systems have been developed that can provide valuable data to support spill responses and planning.

In most cases, models have been tested and validated by application to selected, usually large, accidental spills or experimental field trials. These events are selected based on the availability and quality of data. Hindcasts of the largest, most recent spills (*Exxon Valdez*, the Gulf War spill, *Braer*, *North Cape*) have been used by several researchers to demonstrate the predictive performance of their models.

Basic spill models have been extended to include biological and, in some cases, economic models for estimating the impact and damages of spills (e.g., French et al., 1994). These models are now being incorporated into comprehensive, on-scene, command-and-control systems (Anderson et al., 1998). Strategies for using models to prepare a trajectory analysis have been developed by Galt (1994, 1995). The National Oceanic and Atmospheric Administration (NOAA) has also developed digital distribution standards for data on trajectories (Galt et al., 1996).

Most of the spill models developed to date focus on the transport and fate of surface oil slicks. These models typically predict the mass of oil removed from the sea surface by evaporation, by dispersion or entrainment into the water column, and by sinking and sedimentation but do not explicitly track the dispersed oil. This approach has been taken because most spills involve oils that float throughout most of the short-term spill response. Selected models have the capability of predicting the three-dimensional evolution of oil, including entrainment, subsurface transport, sedimentation, and refloating of spilled oil (e.g., Spaulding et al., 1994; Elliot, 1991; Johansen, 1985; French et al., 1994). The majority of these models employ a particle-based, random-walk technique to predict the evolution of subsurface oil (Kolluru et al., 1994) although other alternatives have also been investigated (Spaulding et al., 1992). In these models, the influence of oil sediment interaction (Kirstein et al., 1985) and the buoyancy of dispersed oil droplets are explicitly accounted for.

The use of the three-dimensional models to forecast and hindcast spills has been limited. Most simulations have been restricted to buoyant oils that have been dispersed in the water column by strong winds or wave forcing. Although these oils are not a direct analog for nonfloating oils, they are instructive in illustrating the ability to predict the transport and fate of oil dispersed in the water column. For example, both Proctor et al. (1994) and Spaulding et al. (1994) performed hindcasts of the *Braer* spill. Both models correctly predicted the general subsurface transport of the highly dispersible, Gulfaks crude oil that was spilled. The predicted location of the subsurface oil was consistent with the pattern of sedimented oil found on the seabed. Neither hindcast included oil-sediment interaction, however, and no predictions were made of the deposition of sedimented oil.

A review of the literature on oil beneath the water surface and Group V oils by NOAA (1997) shows that spill models have generally not been used to forecast or hindcast spills of heavy oils. This is consistent with the summaries of spills of heavy oils presented in Michel and Galt (1995) and Michel et al. (1995). The absence of model applications to forecast or hindcast these events can be attributed to several factors. First, spills of heavy oils are generally less frequent, and the volume of oil spilled tends to be less than in spills of floating oils. Second, requirements for current data (either from observations or hydrodynamic

model predictions), which are difficult to obtain for surface spills, are increased substantially when the subsurface transport of oil is involved. The subsurface current structure is of limited importance when the flows are principally tidal and water depths are shallow, but they become particularly important when stratification and multilayer flows are present. Finally, Michel and Galt (1995) have shown that substantial subsurface transport and deposition often occur as the result of the interaction of buoyant oil with sand. The sinking and subsequent deposition of oil caused by changes in the oil's density due to weathering (evaporative losses) or burning are rare (Lee et al., 1989, 1992).

Most spill models are focused on predicting the transport and fate of oil at sea and do not include oil-sediment interactions or oil-shoreline interactions. Given the lack of data and the lack of a clear understanding of the controlling processes, those that do are necessarily rudimentary (ASA, 1997; Reed et al., 1989). Incorporating oil-sediment interactions into spill models will require estimates of the suspended sediment concentrations as input (Kirstein et al., 1985). These estimates are normally based on observations or model predictions, and the data are rarely available during spill events. Incorporating oil-shoreline interactions will require extensive data on the nearshore environment, including geomorphology and wave and current fields. Once again these data are generally not available for most spills, particularly during the emergency response phase.

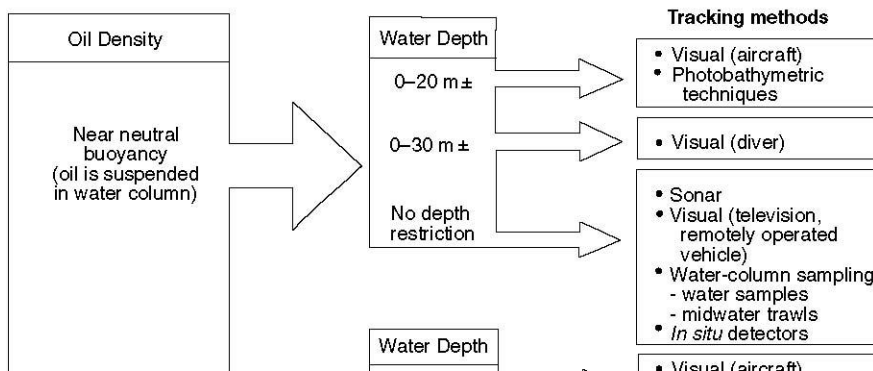
Given this situation, two strategies might be tried to use existing spill models to assist in the response to spills where subsurface transport processes and sinking and sedimentation might be important. First, the spill model could be used to explore the impact of various assumptions about the subsurface transport of the oil and the interaction of oil and sediment. For example, it could be assumed that a portion of the oil will be removed or leave the surface as it becomes neutrally buoyant or sinks at a specified rate due to oil-sediment interaction. Model predictions could then be made to estimate the path and a general sense of the area and volume that would be impacted by the subsurface oil. The information could be used to establish field sampling programs. Data collected from the field on the current structure and sediment concentrations could then be used to refine the predictions and narrow the scope of the uncertainty.

A second approach would be to place the spill model in real-time operation for the principal areas of concern. Supporting three-dimensional hydrodynamic and sediment-transport models for nearshore and offshore areas would provide currents and suspended-sediment fields for inputs to the spill model. The models, which would have been validated with field observations, would be able to assimilate real-time data from monitoring systems to maximize their predictive performance. This approach would only be viable for areas where the probability of spills is high enough to warrant the investment in the development, application, and maintenance of such a system.

TRACKING AND MAPPING TECHNIQUES

Techniques for tracking and mapping the location of oil throughout a spill and subsequent cleanup are critical to the effective containment and recovery of oil in the water column or deposited on the seabed. A brief summary of current methods for tracking and mapping subsurface oil follows. The review is based primarily on summaries in Castle et al. (1995) and Michel et al. (1995). Additional information is available in Smedley and Belore (1991) and Brown et al. (1997). As a practical guide to determining which tracking and mapping options are most appropriate, Figure 3-1 provides a typical decision tree based on oil density and water depth. The first branching is based on assessing the density of oil relative to the density of the receiving water and includes two branches, one if the oil is neutrally buoyant and one if the oil is negatively buoyant in receiving water. The second branching depends on the water depth. Final selection of the tracking method is dependent on local conditions, the availability of equipment and personnel, and weather conditions.

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Visual Observations

Visual observations (by aircraft, ship, diver, or camera/television) have been the principal methods of locating and tracking submerged oil. Airborne photography and visual-based systems, which are widely available and can rapidly survey large areas, are widely used to locate submerged oil. The performance of these systems is limited by water clarity and depth, the quantity of oil, and the characteristics of bottom sediment. Given the possibility of misidentifying natural materials (seaweed, seagrass beds) as oil, *in situ* observations are always required to validate airborne assessments. Direct observations can also be performed by divers within safe depth restrictions and visibility limits. Observations by underwater cameras, either operated by divers or deployed from ships, can also be used to locate submerged oil. These visual methods must generally be confirmed by sampling and have relatively limited coverage. As an extension of visual methods, photobathymetric techniques, such as multispectral photography, may be useful for mapping oil on the seabed in shallow water (Benggio, 1994b). Once again, field confirmation and calibration are required.

Remote Sensing Techniques

Standard, side-looking, airborne radar, synthetic-aperture radars, and infrared/ultraviolet line scanners are generally unable to map subsurface oil because they cannot penetrate the water surface (Fingas and Brown, 1996). The methods are also hindered by the weather and visibility. Laser fluorosensor techniques have been developed and shown to be able to detect oil in the water column for the purposes of oil exploration (Dick and Fingas, 1992; Dick et al., 1992). Little evidence exists that this technique has been used in responding to spills of nonfloating oils, however (Brown et al., 1997). Recent laboratory experiments by Brown (1998) have demonstrated a laser airborne fluorosensor that can detect the presence of dispersed bitumen in the water. No field tests or practical uses of the system have been made to date.

Geophysical/Acoustic Techniques

These technologies include a variety of acoustic-based techniques for locating and mapping submerged oil (Chivers et al., 1990). These techniques rely on acoustic sounding principles, specifically the differential density and sound speeds of water compared to those of oil or oil-sediment mixtures and the scattering of sound waves from particulate material in the water column. Oil in the water column can be qualitatively mapped by commercial fish-finding and echo sounders or by precision survey equipment. Oil on the seabed and associated bottom features can be mapped by side-scan sonar systems. The output of these systems can be enhanced for mapping the texture and composition of the bottom.

One such system was reportedly used to map the submerged oil from the *Morris J. Berman* and *Haven* spills (Marine Microsystems, 1992).

Side-scan sonar mapping systems are normally interfaced with the global positioning system (GPS) and hydrographic mapping software to generate maps of seafloor features. These systems can provide relatively rapid coverage but are most useful when they are used to direct the surveys for areas of natural collection that have already been identified. These specialized systems may be unable to distinguish between oiled sediments and underlying sediments because of their acoustic similarity. Therefore, sampling or *in situ* observations are necessary to confirm the maps.

Water-Column and Bottom Sampling

Direct sampling of the water column or seabed may be used to locate and map the movement of oil. Sampling can be done by a vessel, a remote vehicle, or a diver (in shallow water). Sampling generally becomes more difficult and time consuming as the water depth, current speed, and wave height increase. A variety of sampling techniques are available, including grab sampling of water or sediments with subsequent visual or chemical analysis, sorbent materials deployed on weighted lines or in traps (Benggio, 1994a), and core sampling of the seabed sediments. Sampling is typically limited in scope and may not provide representative observations of the impact area. Water-column and bottom trawls may be useful for selected spills because they can cover larger areas. The effectiveness of sampling methods is strongly dependent on the composition of the oil and oiled sediment and environmental factors, such as current speed, water depth, and substrate type.

In Situ Detectors

In situ and towed fluorometric detection are widely available and routinely used to detect and map petroleum leaks and spills (Turner Designs, 1999). These systems may be mounted on buoys, boats, or remotely operated vehicles. When mounted on boats and coordinated with GPS, they can provide maps of the subsurface oil concentration field. They are restricted to making oil concentration measurements in the water column (Brown et al., 1997) and have a detection range from parts per billion to parts per million, depending on environmental conditions and oil type. Given the three-dimensional nature of submerged oil plumes, mapping of subsurface oil requires an extensive effort. Towed systems might also be used to monitor conditions at one location, such as in a river, to determine whether oil has reached that location and is being transported downstream. These systems have historically been used to assess the effectiveness of dispersants in field trials and planned spill events. They have not been routinely

used for actual spills in the United States but are used in Canada and the United Kingdom to assess the potential for tainting fish from subsurface oils.

Summary

The appropriate method for tracking and mapping a particular spill depends on whether the oil is suspended in the water column or deposited on the seabed and on the water depth and clarity. In general, visual and photobathymetric techniques are restricted to water depths of 20 meters or less and are suitable for both suspended and deposited oil. Diver-based visual observations can only be used in low-current and small wave areas. Acoustic techniques, television observations, water-column and bottom sampling, *in situ* detectors, and nets and trawls typically have no depth restrictions except that the water must be deep enough for the instrument to be deployed and operated safely. They become more difficult to operate, however, as the current speed and wave height increase. Measurements near the seabed become more challenging as the topographic relief of the bottom increases and the bottom surface becomes rougher. Tables 3-1 and 3-2 provide a summary of the uses and limitations of various tracking and mapping methods.

CONTAINMENT AND RECOVERY METHODS

The following descriptions summarize the current state of practice for containing and recovering heavy oils. The summary is based principally on work by Michel et al. (1995), Castle et al. (1995), and Benggio (1994c). Additional information is available in Bonham (1989), and Moller (1992). A useful summary of the containment and recovery of sinking hazardous chemicals is presented in Boyer et al. (1987). Brown et al. (1997) provide a useful summary of the practical aspects of containing and recovering spills of “sunken and submerged oils” and also summarize the methods used in successful responses to spills. Supporting data on these successful responses can be found in NOAA (1997).

Protocols for determining which methods to use for a given spill situation have been proposed by Castle et al. (1995). The approach is based on a decision tree structure, with the principal branching being determined by the buoyancy of the oil, the depth of the water column, and whether the oil is pumpable or not. Figures 3-2 and 3-3 show decision trees for the containment and recovery of sunken oil, respectively. Criteria for each branch are also provided. The form of the decision tree is similar to the one for tracking and mapping (see Figure 3-1).

Containment

Oil that is spilled and transported subsurface either remains suspended in the water column or is deposited on the seabed, usually after interaction with suspended sediments or sand. Different strategies for containing these oils can be used

depending on the location of the oil. Typical response strategies are described below. Few of these techniques have been used and their performance has not been documented during spill events.

Oil in the Water Column

Silt Curtains. The containment of oil suspended in the water column is generally possible only in areas with weak currents (less than 10 cm/sec) and small waves (less than 0.25 m). Silt curtains, which are normally used to control the transport of suspended sediment during dredging operations, are typically restricted to water depths of 3 to 6 meters and are deployed so that the bottom of the curtain does not extend to the seabed. They have not been used in actual spill events.

Nets and Trawls. Midwater trawls and nets may be used for containing selected oil types in certain conditions. The performance of these systems depends on the viscosity of the oil and being able to locate and concentrate the oil. Delvigne (1987) has suggested that nets can successfully contain oil if the currents are low (less than 10 cm/sec) and the viscosity of the oil is high. Nets can be towed, moored, or mounted on moving floats. This method is sometimes used to protect fixed structures (water intake systems) or resources at risk. The effectiveness of trawls and nets declines rapidly as current speeds increase or as nets become clogged. During the *Presidente Rivera* spill in the Delaware River, fish nets were able to recover eight tons of oil before they became fouled (NOAA, 1992).

Pneumatic Barriers and Booms. Pneumatic barriers involve injecting air at the seabed and forming a bubble plume that rises to the surface. Pneumatic barriers have been considered for protecting seawater intakes against oil dispersed in the water column, but little data are available for assessing their performance. Standard oil booms (deep draft) have been considered for containing subsurface oil. In fact, booms have been suggested as the preferred option for responding to spills of bitumen-surfactant-water mixtures and have undergone limited testing at sea (Deis et al., 1997; Sommerville et al., 1997). Booms can be used only when the oil remains in the upper water column, the currents are low (less than 0.20 m/sec), and the waves are small (less than 0.25 m).

Oil on the Seabed

Seabed Depressions. Oil deposited on the seabed can be moved by ambient currents and waves. Sedimented oil tends to collect in natural or man-made depressions on the bottom, including natural and dredged channels, wave-generated troughs offshore of sandy beaches, and natural depressions. Dredging to create depressions for oil collection is not practical as part of a spill response except for very large spills or spills that have very substantial benthic impacts.

TABLE 3-1 Options for Tracking Oil Suspended in the Water Column

Visual Observations Water Sampling		
Description	Trained observers in aircraft or on vessels look for visual evidence of suspended oil; includes use of cameras.	Visual inspection or chemical analysis of grab water samples or a flow-through system with a fluorometer.
Availability of Equipment	Uses readily available equipment.	Uses readily available equipment and supplies.
Logistical Requirements	Low/aircraft and vessels are readily available during spill response.	May require boat, sampling equipment, pumps, GPS for station location, portable oil analyzer.
Coverage Rate	High for aircraft; moderate for vessels.	Very low coverage rate; collecting discrete water samples at multiple depths for testing is very slow.
Data Turnaround	Quick turnaround.	Quick turnaround for visual analysis; chemical results would have to be available in minutes to be effective.
Probability of False Positives	High probability, due to poor water visibility, cloud shadows, seagrass beds, irregular bathymetry, mixing of different waterbodies.	Low probability; field personnel would have to know how to operate all equipment.
Operational Limitations	Requires good water visibility and light conditions; poor weather may restrict flights; limited to daylight hours.	Realistic only for water depths <30 ft; sea conditions may restrict vessel operations.
Pros	Can cover large areas quickly using standard resources available at spills.	Can be used at points of concern, such as water intakes.
Cons	Only effective in areas with very low water turbidity.	Too slow to be effective in dynamic settings or over large areas.

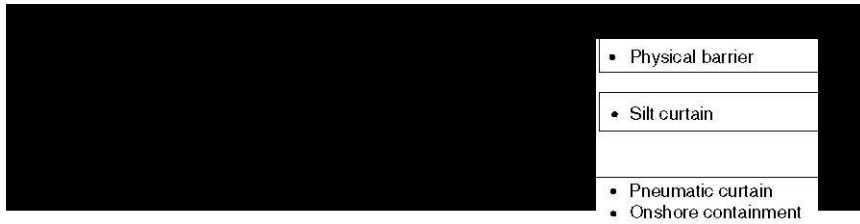
Fish Net Trawls Sorbent Fences Airborne Imaging LIDAR

Fish nets or trawling gear are towed for set distances then inspected for presence of oil; or nets can be set at fixed points and regularly inspected.	Sorbents are attached to something like a chain link fence which is submerged into the water then pulled for inspection; or it could be set at a fixed point for regular inspection	Pulsed laser and video recording system compares back-reflectance from below the water surface for areas of suspended oil versus clean water. Detection depth varies (nominally 45 ft). Operable 24 hours/day
Readily available in commercial fishing areas.	Uses readily available equipment and supplies	Uses very specialized equipment of limited availability
Moderate; requires boat and operators to tow the nets; may require multiple vessels to cover large areas; may require many replacement nets as they become oiled.	Low; can be deployed from small boats or carried to small streams for deployment	Moderate; equipment must be modified for mounting on local aircraft; requires skilled operators
Low coverage; nets have a small sweep area and must be pulled frequently for inspection.	Low; they have a small sweep area and they have to be pulled frequently for inspection	High; flown on aircraft with 200 ft swath
Quick turnaround.	Quick	Moderate; data recorded on video
Low probability; oil staining should be readily differentiated from other fouling materials.	Low; sorbents are designed to pick up oil, so they would be less likely to be stained by other materials	High; system images all submerged features, have to learn to identify patterns for different features, thus requires extensive ground truthing
Obstructions in the water can hang up nets; restricted to relatively shallow depths; sea conditions may restrict vessel operations.	Difficult to deploy and retrieve in strong currents; sea conditions may restrict vessel operations	Weather may restrict flights; minimum detectable size of oil particle is not known, but other individual features detected are usually feet in size or schools of small fish
Can sweep various depths or very close to the bottom.	Uses material available anywhere	Can cover large areas quickly using standard resources available at spills; permanent record of image that is geo-referenced
Very slow; nets can fail from excess accumulation of debris.	Very slow; very limited sampling area	Not proven for detecting suspended oil droplets; very limited availability

TABLE 3-2 Options for Mapping Oil Deposited on the Seabed

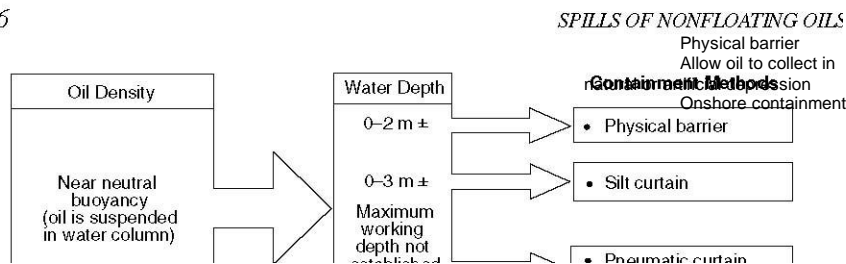
Bottom Sampling Underwater Surveys Visual Observations from the Surface by Divers			
Description	Trained observers in aircraft or on vessels look for visual evidence of oil on the bottom; includes underwater cameras.	A sampling device (corer, grab sampler, sorbents attached to weights) is deployed to collect samples from the bottom for visual inspection.	Divers (trained in diving in contaminated water) survey the sea floor either visually or with video cameras.
Availability of Equipment	Uses readily available equipment.	Uses readily available equipment and supplies	Underwater video cameras are readily available, but divers and diving gear for contaminated water operations may not be available locally.
Logistical Needs	Aircraft and vessels are readily available during spill response.	Requires boat, sampling equipment, GPS for station location.	Depend on the level of diver protection required.
Coverage Rate	High for aircraft; low for vessels.	Very low coverage; collecting discrete bottom samples is very slow; devices sample only a very small area.	Low coverage, because of slow swimming rates, limited diving time, poor water quality.
Data Turnaround	Quick turnaround.	Quick turnaround because visual analysis is used.	Quick turnaround.
Probability of False Positives	High, due to poor water clarity, cloud shadows, seagrass beds, irregular bathymetry.	Low probability, except in areas with high background oil contamination.	Low probability because divers can verify potential oil deposits.
Operational Limitations	Requires good water clarity and light conditions; weather may restrict flights; can be used only during daylight hours.	Sea conditions may restrict vessel operations.	Water depths of 20 m (for divers); minimum visibility of 0.5–1 m; requires low water currents.
Pros	Can cover large areas quickly using standard resources available at spills.	Can be effective in small areas for rapid definition of a known patch of oil on the bottom; low tech option; has been proven effective for certain spills.	Accurate determination of oil on bottom; verbal and visual description of extent and thickness of oil and spatial variations.
Cons	Only effective in areas with high water clarity; sediment cover will prevent detection over time; ground truthing required.	Samples a very small area, which may not be representative; too slow to be effective over large area; does not indicate quantity of oil on bottom.	Slow; difficult to locate deposits without GPS; decontamination of diving gear can be costly/time consuming.

Bottom Trawls	Photobathymetry	Geophysical/Acoustic Techniques
Fish nets or trawling gear are towed on the bottom for set distance then inspected for presence of oil.	Aerial stereo photography mapping technique used to identify and map underwater features (a realistic scale is 1:10000).	Sonar system that uses the differential density and sound speeds in oil and sediment to detect oil layers on the bottom; a fathometer records a single line under the sounder; side-scan sonar records a swath; output can be enhanced to increase detection.
Readily available in commercial fishing areas.	Available from most private aerial mapping companies, with specifications.	Requirements vary; often not available locally; need trained personnel.
Requires boat and operators to tow the nets; may require multiple vessels to cover large areas; may require many replacement nets as they become oiled.	Aircraft specially equipped to obtain vertical aerial photography with GPS interface.	Requires boat on which equipment can be mounted; requires updated charts so that search area can be defined.
Low coverage; nets have a small sweep area and they have to be pulled up frequently for inspection.	High coverage.	Moderate coverage; data collected at speeds up to m/s.
Quick turnaround.	Slow turnaround.; aerial photographs can be produced in a few days in most places; data interpretation takes one or two additional days.	Medium turnaround; data processing takes hours; preliminary data usually available next day; requires ground truthing.
Low probability; oil staining should be readily differentiated from other fouling materials.	High probability; photography can be used to identify potential sites, which require ground truthing.	High probability; identifies potential sites but all need ground truthing.
Obstructions on the bottom can hang up nets; restricted to relatively shallow depths; sea conditions may restrict vessel operations.	Specifications call for low sun angles and calm sea state; water penetration is limited by water clarity; maximum penetration is 10m for very clear water, 1m for turbid water; best if baseline “before” photography is available for comparison.	Sea conditions must be relatively calm to minimize noise in the record.
Can provide data on relative concentrations on the bottom per unit trawl area/time; can survey in grids for more representative areal	Rapid assessment of large areas; high spatial resolution; good documentation and mapping.	Can be used to identify potential accumulation areas; complete systems can generate high-quality data with track lines, good



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Identification of natural depressions and collection points, however, may be very useful for locating sedimented oil and planning for its recovery.

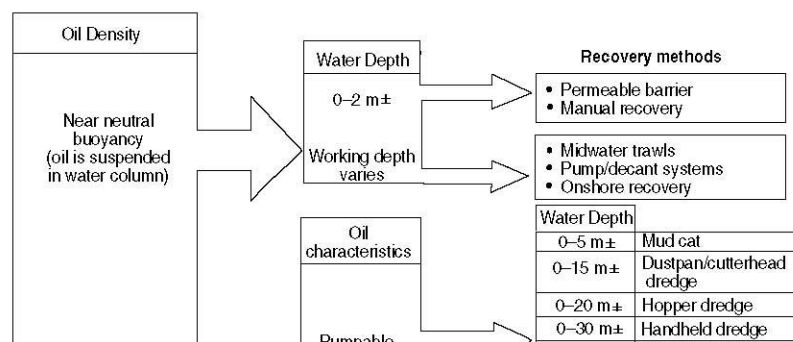
Bottom Booms. Bottom-mounted boom systems could be used to contain oil on the seabed. The booms could be moored to the seabed and flotation used to maintain the vertical structure of the boom. These systems are only suitable for locations with low currents and little wave activity. No practical applications of these systems have been reported.

Recovery

The recovery of sunken oil has proven to be very difficult and expensive because the oil is usually widely dispersed. Several of the most widely used recovery methods are reviewed below.

Manual Removal

The manual removal of oil, one of the most widely used recovery methods, involves divers or boat-based personnel using dip nets or seines to collect oil, which is temporarily stored in bags or containers. The purpose of manual recovery is to remove the oil and minimize the collection, handling, treatment, storage, and disposal of other material (oiled sediment, sediment, and water). This approach can be useful for widely dispersed oil, and its effectiveness can be assessed by



cleanup standards or criteria. The biggest disadvantages of manual removal are the large manpower and logistical requirements, slow rates of recovery, strong dependency on weather conditions, and the potential for the oil to be transported while it is being recovered.

Pump and Vacuum Systems

These systems have historically been most successful for removing large volumes of sunken oil. They typically consist of a submersible pump/vacuum system, an oil-water separator, and a storage container. The systems can be mounted on trucks, on land, or on barges or ships. The suction head of the system is normally directed and controlled by divers and may have an air or water injection system to assist in fluidizing and transporting the slurry. The pumped material is usually a mixture of water, oil, and oiled sediment. Highly viscous or solid oils are usually not pumpable and, hence, are not recoverable with this method.

High-energy pumping systems cannot be used because of their potential for breaking up oil droplets or globules and emulsifying the oil. The pumped mixture is typically routed to an oil-water separator from which the oil and oiled sediment

are removed and stored. The water may be stored for treatment or released into the sea. Oil-water separation may be difficult if the recovered oil is denser than the recovered water. Pumps and vacuum systems are effective if the oil is localized but are not practical for large areas. They also require extensive equipment and the capacity to handle and treat large volumes of water and sediments.

Nets and Trawls

In addition to containing dispersed oil, nets and trawls can also be used as collection devices (Brown and Goodman, 1987; Delvigne, 1987). This approach is most successful when the relative velocity of the water and the oil collected in the net or trawl is low and the viscosity of the oil is high. The effectiveness decreases as the permeability of the net is reduced and flows are diverted around the net (Delvigne, 1987).

Dredging

Dredging is an efficient, well developed method for removing large volumes of sediment (and oil) from the seabed at high recovery rates. Castle et al. (1995) provide a summary of the operating characteristics of a wide variety of dredging systems routinely considered for the removal of sunken oil. Additional information on the feasibility of dredging for the cleanup of sunken oil is given in Bonham (1989). Large volumes of water, oil, and sediment are typically generated in the dredging process and must be handled, stored, and disposed of as the recovery operation proceeds. Accurate vertical control of the dredge depths is critical to minimizing the amount of dredged material and the amount of clean sediment contaminated with oil as the result of the dredging operation. Operational costs and logistics requirements are lower for land-based than for barge-based methods of handling and storing dredged materials. Given the potential for storms that increase freshwater flows and shipping traffic, both of which can resuspend or remobilize sunken oil, the timeliness of dredging is crucial.

Onshore Recovery

In some cases, oil that has been submerged and mixed with sediment enters the surf zone and is eventually moved onshore and deposited on the shoreline. In these cases, conventional shoreline cleanup methods can be used to remove the oil.

Summary

The containment and recovery of oil dispersed in the water column or deposited on the seabed are very difficult. The problem begins with locating the oil and determining its status. The success of current methods varies greatly but is usually

TABLE 3-3 Options for Containing Oil Suspended in the Water Column

Pneumatic Barriers Net Booms Silt Curtains

Description	Piping with holes is placed on the bottom, and compressed air is pumped through it, creating an air bubble barrier.	Floating booms with weighted skirts (1-2 m long) composed of mesh designed to allow water to pass while containing suspended oil.	During dredging operations, silt curtains are deployed as a physical barrier to the spread of suspended oil; weighted ballast chains keep the curtain in place.
Availability of Equipment	Uses readily available equipment, although in unique configuration.	There are commercially available net booms have been developed and tested for containing spills of Orimulsion; little availability in the United States.	Not readily available; limited expertise in deployment and maintenance.
Logistical Requirements	Moderate; requires a system to deploy and maintain bubbler; piping has tendency to clog; high installation costs.	Moderate; similar to deployment of standard booms, but with added difficulty because of longer skirt; can become heavy and unmanageable.	Moderate; deployment and maintenance.
Operational Limitations	Only effective in low currents (< 0.2 m/sec), small waves, and shallow water >2 m.	In field tests, the booms failed in currents <0.75 knots; very limited few conditions.	Only effective in very low currents(<10cm/sec); practical limits on curtain depth are 3–6m, which normally doesn't extend to the bottom.
Optimal Conditions	To contain oil spilled in dead-end canals and piers; to protect water intakes.	Will contain oil only in very low-flow areas, such as dead-end canals and piers.	Still water bodies such as lakes; dead-end canals.
Pros	Does not interfere with vessel traffic.	Can be deployed similar to traditional booms.	Can be deployed throughout the entire water column.
Cons	Only effective under very limited conditions; takes time to fabricate and deploy, thus only effective where pre-	Only contains oil suspended in the upper water column, to the depth of the mesh skirt; unknown whether the mesh will clog and fail at lower currents.	Effective under very limited conditions, not likely to coincide with location where oil needs containment; oil droplets are larger than silt and could clog curtain.

TABLE 3-4 Options for Recovering Oil Deposited on the Seabed

Manual Removal by Divers Nets/Trawls		
Description	Divers pick up solid and semi-solid oil by hand or with nets on the bottom, placing it in bags or other containers	Fish nets and trawls are dragged on the bottom to collect solidified oil
Equipment Availability	Contaminated-water dive gear may not be locally available	Nets and vessels readily available in areas with commercial fishing industry
Logistical Needs	Moderate; diving in contaminated water requires special gear and decon procedures; handling of oily wastes on water can be difficult	Low; uses standard equipment, though nets will have to be replaced often because of fouling
Operational Limitations	Water depths up to 60-80 ft for routine dive operations; water visibility of 1-2 ft so divers can see the oil; bad weather can shut down operations	Water depths normally reached by bottom trawlers; obstructions on the bottom which will hang up nets; rough sea conditions; too shallow for boat operations
Optimal Conditions	Shallow, protected areas where dive operations can be conducted safely; small amount of oil; scattered oil deposits	Areas where bottom trawlers normally work; solidified oil
Pros	Divers can be very selective, removing only oil, minimizing the volume of recovered materials; most effective method for widely scattered oil deposits	Uses available resources; low tech
Cons	Not effective for liquid or semi-solid oil; nets can quickly become clogged and fail; can become heavy and unmanageable if loaded with oil; could require many nets which are expensive	Large manpower and logistics requirements; problems with contaminated equipment

limited because the oil, which is mixed with sediments and water, is usually widely dispensed. In general, the success is greatest when the current speeds and wave conditions at the spill site are low, the oil is pumpable, the water depths are relatively shallow, and the sunken oil has concentrated in depressions or collection areas. The selection of containment and recovery methods is highly dependent on the specific location and environmental conditions during the spill, the

Pump and Vacuum Systems (Diver-directed) Dredging

Divers direct a suction hose connected to a pump and vacuum system, connected to oil-water separator, and solids containers. Viscous oils require special pumps and suction heads. Even in low water visibility, divers can identify oil by feel or get feedback from top-side monitors of changes in oil recovery rates in effluents

Special purpose dredges, usually small and mobile, with ability for accurate vertical control. Uses land or barge-based systems for storage and separation of the large volumes of oil-water-solids.

Readily available equipment but needs modification to spill conditions, particularly pumping systems, and capacity for handling large volumes of materials during oil-water-solids separation

Varies; readily available in active port areas; takes days/week to mobilize complete systems

High, especially if recovery operations are not very close to shore. On-water systems will be very complicated and subject to weather, vessel traffic, and other safety issues.

High, especially if recovery operations are not very close to shore, because of large volumes of materials handled. On-water systems will be very complicated and subject to weather, vessel traffic, and other safety issues.

Water depths up to 60-80 ft for routine dive operations; water visibility of 1-2 ft so divers can see the oil; bad weather can shut down operations; solid oil which is not pumpable

Min/max water depths are a function of dredge type, usually 2-100 ft; not in rocky substrates; bad weather can shut down operations

Sites adjacent to shore, requiring minimal on-water systems; liquid or semi-solid oil; thick oil deposits, good visibility; low currents

Large volume of thick oil on the bottom; need for rapid removal before conditions change and oil is remobilized, buried by clean sediment, or will have larger environmental effects

Most experience is with this type of recovery; diver can be selective in recovering only oil and effective with scattered deposits;

Rapid removal rates; can recover non-pumpable oil

Very large manpower and logistics requirements, including large volumes of water-oil-solids handling, separation, storage, and disposal; problems with contaminated water diving and equipment decon; slow recovery rates; weather dependent operations

Generates large volumes of water/solids for handling, treatment, disposal; large logistics requirements; could re-suspend oil/turbidity and affect other resources

characteristics of the oil and its state of weathering and interaction with sediments, the availability of equipment, and logistical support for the cleanup operation. In addition, the potential environmental impacts of implementing these methods, particularly in sensitive benthic habitats, must be considered. Tables 3-3 and 3-4 summarize the uses and limitations of various containment and recovery methods.

4

Barriers to Effective Response

In presentations at the four committee meetings and at the workshop, leading experts from the spill-response, regulatory, environmental, and oil-transportation communities consistently identified a number of barriers to effective responses to spills of nonfloating oils. The major managerial, technological, and financial barriers identified by these experts and supported by the experience of committee members are summarized below.

MANAGERIAL BARRIERS

A major managerial barrier in responding to spills of nonfloating oils is the lack of experience at the local level. The knowledge base for planning and responding to oil spills is primarily derived from responses to actual oil spills. Significant oil spills are infrequent by their very nature, and spills of nonfloating oils are only a small fraction of all oil spills. Thus, it is difficult to acquire and maintain a sufficient knowledge base at the local level to respond to nonfloatingoil spills, particularly because few organizations have full-time, dedicated response teams. Furthermore, planning for nonfloating-oil spills generally has a low priority because of their infrequency. Responding to a spill of nonfloating oils is, therefore, often a new or very rare experience for local response teams who are likely to have trouble anticipating problems and formulating effective response strategies.

Planning for spills of nonfloating oils at the regional level has often been inadequate. There are 44 area committees in the USCG's jurisdiction. None of the area plans, however, has a well developed strategy for responding to spills of

nonfloating oils. As a result, planners have limited experience in identifying the likelihood and potential sources of spills of nonfloating oils, determining resources at risk, establishing protection priorities and strategies, or evaluating response capabilities in federal, state, and industry plans.

Area committees and other constituencies have not adequately resolved emergency regulatory issues associated with responses to nonfloating-oil spills, such as obtaining permits for emergency dredging and the discharge of co-collected water. As a result, even though every spill of nonfloating oils is a true emergency, difficult regulatory issues must be faced without the benefit of prior discussions of response options. Consequently, regulatory agencies cannot usually provide timely approvals.

The resources and information necessary to respond effectively to nonfloating oil spills have not been identified, including divers capable of operating in contaminated waters, the capability of updating bathymetric maps to determine potential accumulation zones, and the selection and implementation of systems to track the movement and distribution of subsurface oil. Furthermore, few, if any, drills or exercises have been carried out with scenarios focused on spills of nonfloating oils. In the absence of a real spill, exercises are an excellent mechanism for verifying response plans and improving response capabilities. The lack of drills, combined with limited experience with actual spills, has seriously impeded the development of a practical knowledge base for responders.

Misconceptions about the behavior, fate, and effects of nonfloating-oil spills are widespread. Descriptions of the transport and fate of spills of nonfloating oils have been confused and inconsistent. Consequently, the documentation of actual spills is poor and difficult to interpret, and no formal system for sharing lessons learned from previous spills has been developed. Without field experience or adequate literature on which to base predictions of behavior and effects, resource managers and responders have been forced to develop their own conceptual models of how nonfloating oils might behave and their environmental impacts. These conceptual models are often inadequate or incorrect, leading to erroneous assumptions about the viability or effectiveness of response options.

TECHNOLOGICAL BARRIERS

Existing methods for tracking spills are not effective for tracking nonfloating oils. One of the first questions asked after an oil spill is where the oil is going. The answer to this question often determines subsequent decisions. Most conventional methods for predicting the trajectory and tracking oil spills rely on two-dimensional (e.g., surface) transport and fate models and visual observations, none of which is effective for tracking nonfloating oils.

Methods used to track nonfloating oils in past spills have been largely ineffective. Most existing methods have low encounter rates and limited areal coverage for tracking oil suspended in the water column. Thus, it is impossible to

generate a synoptic map of the dispersed oil plume over time. The problems are similar for tracking oil deposited on the seabed, but generally the movement of deposited oil is less dynamic. Bottom sampling methods for large areal searches (e.g., video and sonar searches) are limited by site constraints, difficult logistics, and the need for extensive ground truthing (i.e., *in situ* verification). The most commonly used techniques (e.g., sorbent drops and drags, diver observations, bottom trawls) can only sample limited areas and are slow, labor intensive, and logistics intensive.

The options for effectively containing and recovering nonfloating oils are limited. Even the most promising methods have not been effective for containing and recovering oils mixed in the water column, except under ideal conditions (e.g., small spills of emulsified oils in areas with very low currents and little wave activity). Generally, oil in the water column disperses quickly over large areas and volumes, becoming unavailable for effective recovery. Containment of oil deposited on the seabed is only feasible where the oil accumulates naturally. In these cases, recovery rates can be very high with the use of manual, pumping, or dredging techniques. However, each of these methods requires handling large volumes of water and solids.

Because of a general lack of knowledge about benthic habitats and resources, assessing resources at risk from nonfloating oils is extremely difficult. Area plans include annexes, in which sensitive areas are identified and prioritized for protection. One of the tasks of area committees is to discuss cleanup methods and end points appropriate for different habitats. Although nonfloating-oil spills threaten both the water-column and bottom (benthic) habitats, data on benthic habitats and resources at risk are either very sparse or not available. Benthic habitats are often described in very general terms, and few areas have been mapped in detail. Areas with high concentrations of plant or animal species or sites important to the sensitive, early life stages of organisms are usually poorly known, even for species with high commercial value. Without this information, it is difficult for resource managers to evaluate the potential effects of unrecovered oil or to decide on how aggressive their containment and recovery efforts should be.

FINANCIAL BARRIERS

Funding levels for testing and evaluating potential response options for all oil spills are low, but they are especially low for spills of nonfloating oils (NRC, 1998). Even after the watershed *Exxon Valdez* oil spill, federal, state, and industry funding for research and development have remained low. Funding for research and development on the containment, recovery, and effects of nonfloating oils has also been low and is generally targeted toward emulsified fuels for which funding is provided by the producers of these fuels. The lack of research, development, testing, and evaluation has left responders with a very limited number of unproven options for responding to nonfloating-oil spills. Information about how these options might be used under specific spill conditions is also limited.

Findings, Conclusions, and Recommendations

FINDINGS

Finding 1. From 1991 to 1996, approximately 17 percent of the petroleum products transported over U.S. waters were heavy oils and heavy-oil products, such as residual fuel oils, coke, and asphalt. Approximately 44 percent was moved by barge and 56 percent by tanker.

Finding 2. From 1991 to 1996, approximately 23 percent of the petroleum products spilled in U.S. waters were heavy oils. In only 20 percent of these spills did a significant portion of the spilled products sink or become suspended in the water column. Most of the time, spills of heavy oil remained on the surface. The average number of spills of more than 20 barrels of heavy oil and asphalt was 16 per year, with an average volume of 785 barrels per spill. The committee projects that a 30 percent reduction in the number and volume of heavy-oil spills would have been realized if tankers and barges had all been double-hulled vessels.

Finding 3. In recent years, barges have had significantly higher spill rates than tankers. From 1991 to 1996, barges accounted for approximately 80 percent of the volume of heavy-oil spills, and the spill rate, expressed in terms of barrels-spilled-per-ton-mile, was more than 10 times higher for barges than for tankers. Although the reduction in spill volume from tank barges since 1990 has been significant (about one-third of pre-1990 volume), the reduction for tankers has been even more dramatic (about one-tenth of pre-1990 volume).

Finding 4. Specific gravity, as used in the regulatory definition of Group V oils, does not adequately characterize all oil types and weathering conditions that produce nonfloating oils. The committee was asked to address the issue of responses to Group V oil spills, defined by current regulations as oils with a specific gravity of greater than 1.0. However, the committee determined that the issue of concern is planning for and responding to oil spills in which most, or a significant quantity, of the spilled oil does not float. The committee, therefore, decided to use the term “nonfloating oils” to describe the oils of concern.

Finding 5. Nonfloating oils behave differently and have different environmental fates and effects than floating oils. The resources at greatest risk from spills of floating oils are those that use the water surface and the shoreline. Floating-oil spills seldom have significant impacts on water-column and benthic resources. In contrast, nonfloating-oil spills pose a substantial threat to water-column and benthic resources, particularly where significant amounts of oil have accumulated on the seafloor. Nonfloating oils tend to weather slowly and thus can affect resources for long periods of time and at great distances from the release site. However, the effects and behavior of nonfloating oil are poorly understood.

Finding 6. Although spill modeling and supporting information systems are well developed, they are not commonly used in response to nonfloating-oil spills because of limited environmental data and observations of oil suspended in the water or deposited on the seabed. Oil-spill models and supporting information systems are routinely used in contingency planning and spill responses. Sophisticated, user-friendly interfaces have been developed to take advantage of the latest advances in computer hardware and software. The current generation of models can rapidly incorporate environmental data from a variety of sources and include integrated geographic information systems. The models can also assimilate data on the most recently observed location of spilled oil and have improved forecasts of oil movements. They are not routinely used, however, in response to nonfloatingoil spills because of the lack of supporting data on the three-dimensional currents and concentrations of suspended sediments. Field data, such as oil concentrations in the water column and on the seabed, are also not generally available to validate or update models.

Finding 7. A substantial number of techniques and tools for tracking subsurface oil have been developed. Most of them, however, have not been used in response to actual oil spills. Many techniques are available for determining the location of oil both in the water column and on the seabed. These include visual observations, geophysical and acoustic methods, remote sensing, water-column and seabed sampling, *in situ* detectors, and nets and trawl sampling. The most direct and simplest methods, such as diver observations and direct sampling, are widely used, but they are labor intensive and slow. More sophisticated approaches, such

as remote sensing, are limited to zones very near the sea surface because of technical constraints. Other advanced technologies, such as acoustic techniques, cannot differentiate between oil and water or between oiled sediments and underlying sediments. Many of the more sophisticated systems are prone to misuse and produce ambiguous data that are subject to misinterpretation. The performance of all but the simplest methods is undocumented either by field experiments or by use in spill responses.

Finding 8. Although many technologies are available for containing and recovering subsurface oil, few are effective, and most work only in very limited environmental conditions. Containment of oil suspended in the water column using silt curtains, pneumatic barriers, and nets and trawls is only effective in areas with very low currents and minimal wave activity. These conditions rarely exist at spill sites, particularly at sites in estuarine or coastal waters. The recovery of oil in the water column by trawls and nets is limited by the viscosity of the oil and net tow speeds.

The containment of oil on the seabed is typically ineffective, except at natural collection points (e.g., depressions and areas of convergence). The collection of oil on the seabed by manual methods, in natural collection areas and along the shoreline after beaching, is effective but labor intensive and slow. Manual methods are also limited by the depths at which diver-based operations can be carried out safely. Dredging techniques have rarely been used because of limited recovery rates, the large volumes of water and sediment generated, and the problems of storing, treating, and discharging co-produced materials.

Finding 9. The lack of knowledge and lack of experience, especially at the local level, in responding to spills of nonfloating oils is a significant barrier to effective response. The knowledge base and response capabilities for tracking, containing, and recovering nonfloating oils have not been adequately developed. Even at the national level, no system has been developed for sharing experiences or documenting the effectiveness and limitations of various options. With limited experience and a lack of proven, specialized systems, responders have found it difficult to adapt available equipment for responses to spills of nonfloating oils.

Finding 10. Planning for spills of nonfloating oils is inadequate at the local level. Existing area contingency plans do not include comprehensive sections on the risk of spills of nonfloating oils or how to respond to them. To date, planning has focused primarily on spills of floating oils. Inventories of equipment, lists of specialized services, assessments of the resources at risk, and protection priorities have not been developed by area committees for nonfloating oils. Nor have they identified the risks (e.g., transportation patterns, volumes, oil types), developed appropriate scenarios and response plans, or reviewed acceptable cleanup methods

and end points. Existing plans have not been tested during drills or exercises to address deficiencies.

Finding 11. Funding levels for research, development, testing, and evaluation of spills of nonfloating oils are very low. The only active research programs currently under way either by government or industry groups are focused on emulsified fuel oils. Because the risk of spills of nonfloating oils is perceived as low relative to spills of floating oils, few research and development funds have been committed.

CONCLUSIONS

Conclusion 1. The tracking, containment, and recovery of spills of nonfloating oils pose challenging problems, principally because nonfloating oils suspended in the water column become mixed with large volumes of seawater and may interact with sediments in the water column or on the seabed. The ability to track, contain, and recover nonfloating oils is critically dependent on the physical and chemical properties of the oils and the water or the oils and the other materials dispersed in the water column or on the seabed. The differences in these characteristics are often quite small, and little technology is available for determining them.

Conclusion 2. Although many methods are available for tracking nonfloating oils, the simplest and most reliable are labor intensive and cover only limited areas. More sophisticated methods have severe technical limitations, require specialized equipment and highly skilled operators, or cannot distinguish oil from water or other materials dispersed in the water column. Engineered systems for containing oil in the water column or on the seabed are few and only work in environments with low currents and minimal waves. Natural containment in seabed depressions or in the lee of topographical or man-made structures on the seabed is effective for containing oils, but these are not always available in the vicinity of the spill.

Conclusion 3. The recovery of oil from the water column is very difficult because of the low concentration of dispersed oil; hence, recovery is rarely attempted. If oil collects on the seabed in natural containment areas, many options for effective recovery are available, although most of them are labor intensive and access to response equipment is a problem.

Conclusion 4. The volume and frequency of spills of nonfloating oils is significant (although smaller than for floating oils) and, therefore, should be an integral part of planning for spill responses, particularly in areas where nonfloating oils are regularly transported. Transport by tank barges raises particular concerns,

given the relatively high spill rates from these vessels. The risks of potential harm to water-column and benthic resources from nonfloating oils have not been adequately addressed in the contingency plans for individual facilities or geographic areas.

Conclusion 5. Inland barges are subject to greater risks of spills than tankers and coastal barges; consequently, spill rates for barges are likely to be higher than for tankers. However, the large difference between the overall spill rates, as well as the decreasing number of spills from tankers in recent years (post-OPA 90), raises concerns regarding the performance of barges.

RECOMMENDATIONS

The recommendations below are intended to improve the capability of the spill response community to respond to spills of nonfloating oils.

Recommendation 1. The U.S. Coast Guard should direct area planning committees to assess the risk of spills of nonfloating oils (i.e., oils that may be dispersed in the water column or ultimately sink to the seabed) to determine the resources at risk. In areas with significant environmental resources risk, area planning committees should develop response plans that include consultation and coordination protocols and should obtain pre-approvals and authorizations to facilitate responses to spills. Stakeholder groups should be educated about the impact and methods available for tracking, containing, and recovering oil suspended in the water column or on the seabed. Area committees in locations where there is a high risk of spills of nonfloating oils should include at least one scenario for responding to a nonfloating-oil spill in their training or drill programs.

Recommendation 2. The U.S. Coast Guard should improve its knowledge base, education, and training for responding to spills of nonfloating oils by including a scenario involving a spill of nonfloating oils in oil-spill response drills, by establishing a knowledge base and scientific support teams to respond to these types of spills, and by disseminating this knowledge to the federal spill-response coordinators and area planning committees as part of ongoing training programs. The information would help area planners assess the requirements for responding to nonfloating-oil spills.

Recommendation 3. The U.S. Coast Guard should support the development and implementation of an evaluation program for tracking oil in the water column and on the seabed, as well as containment and recovery techniques for use on the seabed. The findings of these evaluations should be documented and distributed to the environmental response community to improve response plans for spills of nonfloating oils.

Recommendation 4. Tests of area contingency plans and industry response plans for responses to spills of nonfloating oils should be required parts of training and drill programs.

Recommendation 5. The U.S. Coast Guard should monitor spill rates from tank barges to ascertain whether current regulatory requirements and voluntary programs will reduce the frequency and volume of spill incidents. If not, the Coast Guard should consider initiating regulatory changes.

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Appendices

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APPENDIX A

Biographical Sketches of Committee Members

Malcolm L. Spaulding (chair) is professor and chair of the Department of Ocean Engineering at the University of Rhode Island, where he has been a member of the faculty since 1973. He is an expert in numerical modeling of nearshore and coastal processes, including hydrodynamics, oil and pollutant transport and fate, waves, and sediment transport. Dr. Spaulding received his Ph.D. in mechanical engineering and applied mechanics from the University of Rhode Island. He serves on a number of national and international research and advisory organizations related to coastal and ocean processes. He has served on National Research Council committees for the Marine Board and the Ocean Studies Board and is currently a member of the Marine Board.

Malcolm MacKinnon III (NAE) retired in 1990 from the U.S. Navy, where he was the chief engineer of the Navy and the vice commander, Naval Sea Systems Command. RADM MacKinnon is the president and chief executive officer of MSCL, Inc., a consulting firm that provides technical services to the maritime industry (military and commercial) worldwide. He is a graduate of the U.S. Naval Academy and holds advanced degrees in naval architecture and marine engineering from the Massachusetts Institute of Technology. He is a Distinguished Graduate of the Naval War College. RADM MacKinnon has extensive experience in the design, construction, engineering, and maintenance of ships and submarines, as well as in search and recovery operations at sea. He served on the Marine Board committee that assessed the National Oceanic and Atmospheric Administration's fleet replacement and modernization plan and is a member of the National Academy of Engineering.

Jacqueline Michel is a vice-president of Research Planning, Inc. She is a geochemist with extensive scientific and practical experience in the fate and effects of spilled oil on marine, aquatic, and terrestrial resources. Much of her experience is derived from work under contract to the National Oceanic and Atmospheric Administration as a member of the Scientific Support Team, which provides 24-hour emergency response support for oil and chemical incidents. Dr. Michel's areas of expertise include risk assessment and determination, technological recoveries, shoreline assessment, chemical countermeasures, and damage assessment to natural resources. She has authored several reports and scientific papers on the behavior, fate, and effects of Group V oils and has developed response options for tracking, containing, and recovering nonfloating oil spills. Dr. Michel is an adjunct professor of environmental sciences in the School of Environment, University of South Carolina. She received her B.S., M.S., and Ph.D. degrees in geology from the University of South Carolina.

R. Keith Michel, president of Herbert Engineering Corporation, has been with the company since 1973, working on design, specification development, and contract negotiations of container ships, bulk carriers, and tankers. Mr. Michel has served on industry advisory groups to the International Maritime Organization and the U.S. Coast Guard, developing guidelines for alternative tanker designs. He was a project engineer for the U.S. Coast Guard's report on oil outflow analysis for double-hull and hybrid tanker arrangements that were part of the U.S. Department of Transportation's technical report to Congress on the Oil Pollution Act of 1990. Mr. Michel served on the National Research Council Committee on the Oil Pollution Act of 1990: Implementation Review and is a member of the Marine Board. He holds a B.S. degree in naval architecture and marine engineering from Webb Institute of Naval Architecture.

James L. O'Brien has been the president and chief executive officer of O'Brien's Oil Pollution Service, Inc., since 1983. He is a former officer in the U.S. Coast Guard, where he was involved with pollution response, including an assignment as the leader of the Pacific Strike Team, a group responsible for responding to spills of oil and hazardous substances. He has been involved in responses to more than 150 significant oil spills, including well blowouts, vessel collision and strandings, facility releases, and pipeline ruptures, and he participated in spill-removal efforts during Desert Storm operations in Saudi Arabia. Mr. O'Brien's company provides services for companies and is the contract spill-management organization for a number of clients. He has published several articles in professional journals and has made presentations at national and international technical conferences.

Steven L. Palmer is a project manager in the Siting Coordination Office of the Department of Environmental Protection for the state of Florida. His professional

experience includes aquatic ecosystem protection and watershed management assessments, air quality protection, and solid and hazardous waste management for both freshwater and marine environments. Mr. Palmer has testified as an expert witness in administrative hearings before legislative committees and at public hearings. He has served as a member of the U.S. Coast Guard Group V Oil Work Group Team, which examines issues surrounding the transport and cleanup of spills of heavy oils. He holds a B.A. in mathematics and marine science from the University of South Florida and an M.S. in civil engineering from Florida State University.

APPENDIX B

Participants in the Workshop and Meetings

COMMITTEE MEETINGS

First Committee Meeting, May 7–8, 1998 National Academy of Sciences, Washington, D.C.

Steven A. Anderson, Air Products, Inc. Ken Bitting, U.S. Coast Guard Louis “Coke” Coakley, Florida Power and Light Company Deborah French, Applied Science Associates Nelson Garcia-Tavel, Bitor America Corporation Donna Leinwand, Knight-Ridder, Inc. John Meehan, U.S. Coast Guard Carolyn Raepple, Hopping Green Sams & Smith Gloria Rains, Manasota-88 Jennifer Rains, law student, American University

Second Committee Meeting, August 20–21, 1998 National Academy of Sciences, Washington, D.C.

Charles A. (Andy) Miller, Environmental Protection Agency

**Third Committee Meeting, October 15–16, 1999
Oakland, California**

David Adams, Port of Oakland
José Dueñas, Greater Oakland International Trade Center
Peter Grautier, U.S. Coast Guard, Marine Safety Office
Jim Hardwick, Office of Spill Prevention and Response, California Department
of Fish and Game
Harlan Henderson, U.S. Coast Guard, Marine Safety Office
Carl Jochums, Office of Spill Prevention and Response, California Department
of Fish and Game
John W. Koster, U.S. Coast Guard, Chief Response Branch
Michael Latorre, Marine Spill Response Corporation
Douglas O'Donovan, Marine Spill Response Corporation
Steve Ricks, Clean Bay, Inc.
Scott Stolz, Hazardous Materials Response and Assessment Division, National
Oceanic and Atmospheric Administration
Gail Thomas, Environmental Protection Agency
Edward Ueber, Gulf of the Farallones, Cordell Banks, and Monterey Bay
(north) National Marine Sanctuaries

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Southeast Louisiana Area Contingency Plan Chapter 9000

Appendices, Appendix U Spills of Nonfloating Oils

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Southeast Louisiana Area Contingency Plan

Chapter 9000
Appendix V
ICS Position Specific
Job Aids

Southeast Louisiana Area Contingency Plan

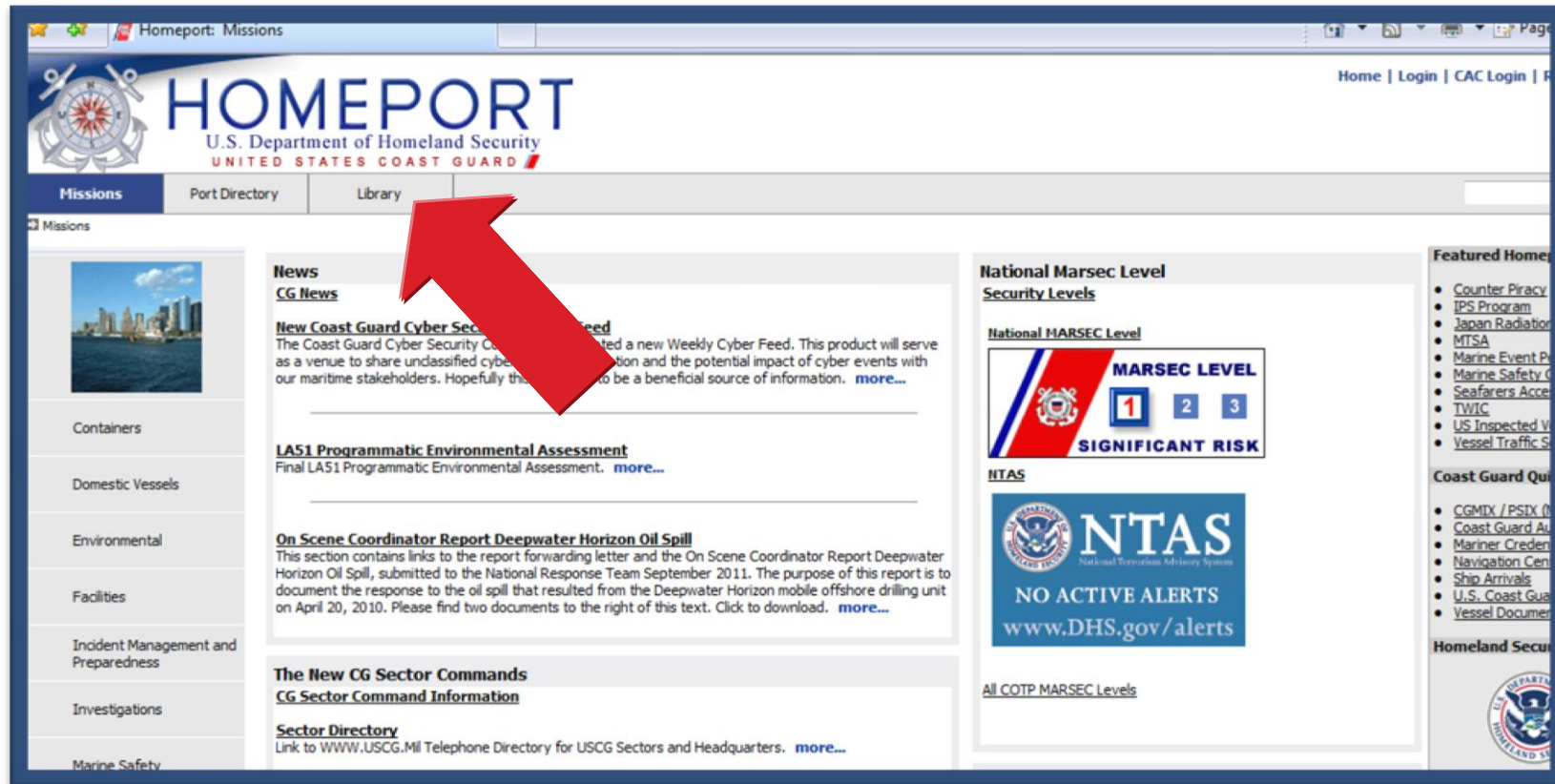
Chapter 9000 Appendices, Appendix V ICS Position Specific Job Aids

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Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix V ICS Position Specific Job Aids

Incident Command System position specific job aids can be found at <https://homeport.uscg.mil/>. Follow the below instructions to access the U.S. Coast Guard ICS position specific job aids.



From the <https://homeport.uscg.mil/> homepage, select Library on the top left hand corner of the page.

Southeast Louisiana Area Contingency Plan

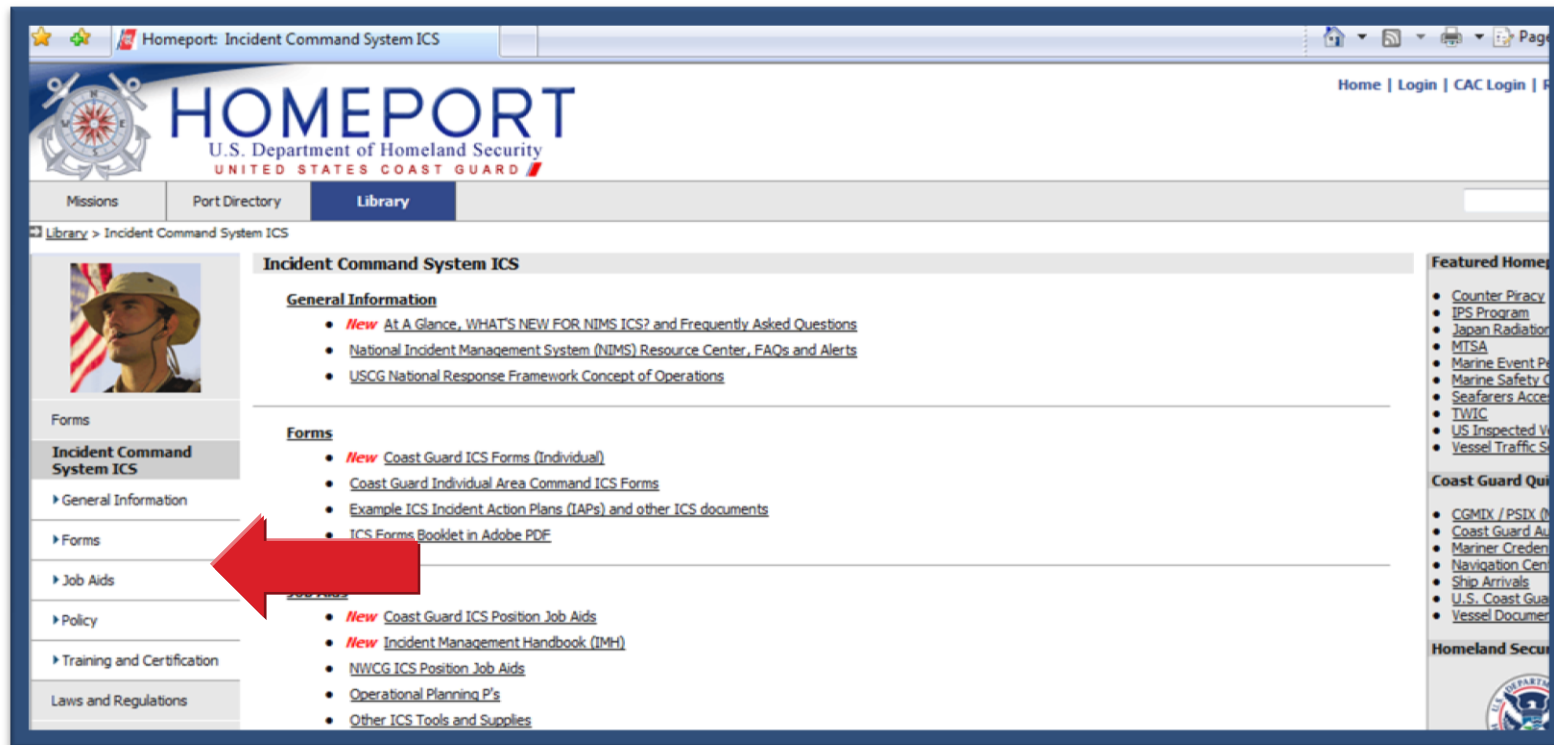
Chapter 9000 Appendices, Appendix V ICS Position Specific Job Aids



From the Library page select Incident Command System (ICS) on the left hand side of the page.

Southeast Louisiana Area Contingency Plan

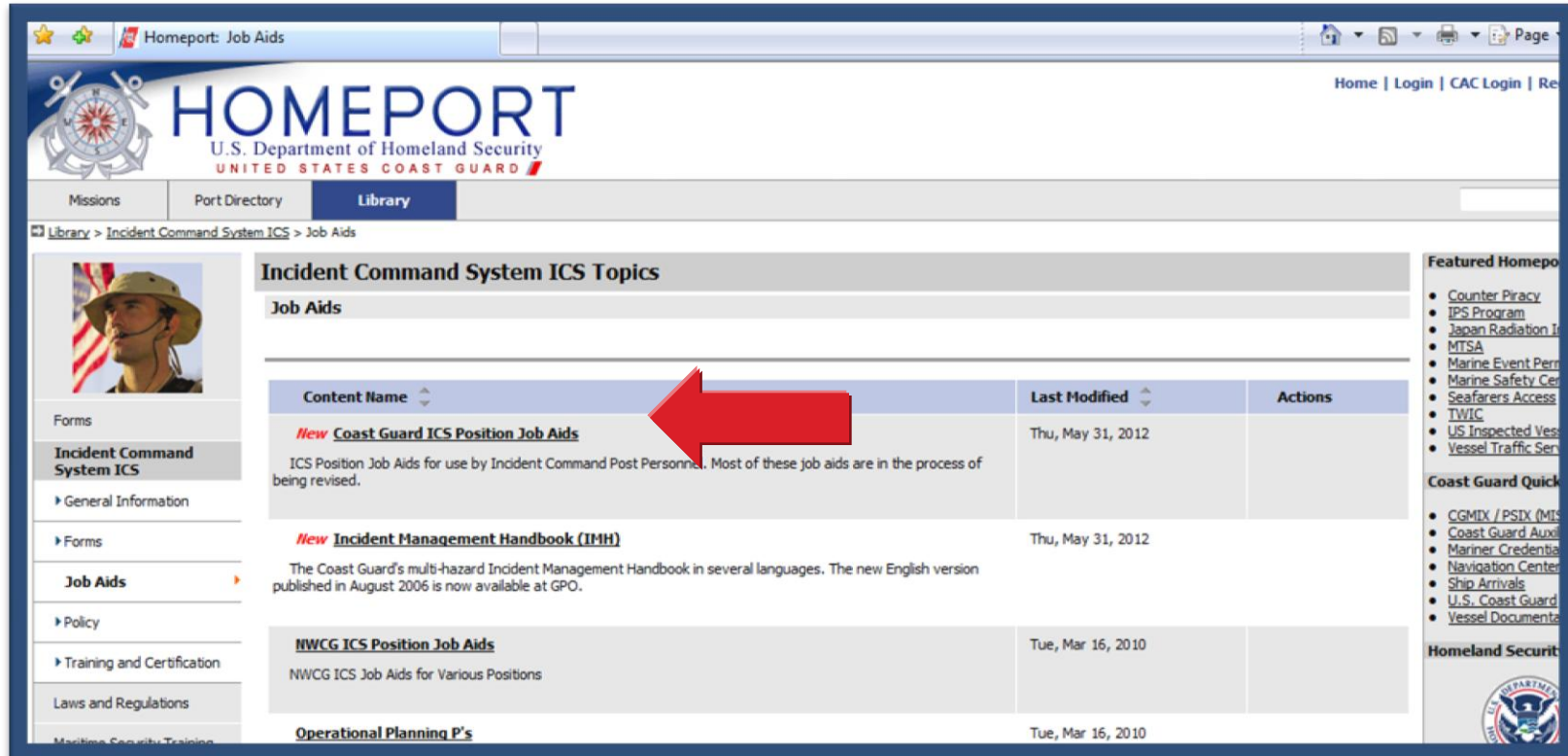
Chapter 9000 Appendices, Appendix V ICS Position Specific Job Aids



From the ICS Page select Job Aids from the left side of the screen.

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix V ICS Position Specific Job Aids



The screenshot shows the Homeport website interface. The top navigation bar includes links for Home, Login, CAC Login, and Register. The main header features the Homeport logo and the U.S. Department of Homeland Security, United States Coast Guard. The left sidebar contains a menu with options like Missions, Port Directory, Library, Forms, Incident Command System ICS, General Information, Policy, Training and Certification, Laws and Regulations, and Maritime Security Training. The main content area is titled 'Incident Command System ICS Topics' and 'Job Aids'. A table lists three job aids: 'New Coast Guard ICS Position Job Aids' (last modified May 31, 2012), 'New Incident Management Handbook (IMH)' (last modified May 31, 2012), and 'NWCG ICS Position Job Aids' (last modified Mar 16, 2010). A red arrow points to the 'New Coast Guard ICS Position Job Aids' link. The right sidebar contains 'Featured Homeport' links and 'Coast Guard Quick' links.

Homeport: Job Aids

Home | Login | CAC Login | Register

Missions Port Directory **Library**

Library > Incident Command System ICS > Job Aids

Incident Command System ICS Topics

Job Aids

Content Name	Last Modified	Actions
New Coast Guard ICS Position Job Aids ICS Position Job Aids for use by Incident Command Post Personnel. Most of these job aids are in the process of being revised.	Thu, May 31, 2012	
New Incident Management Handbook (IMH) The Coast Guard's multi-hazard Incident Management Handbook in several languages. The new English version published in August 2006 is now available at GPO.	Thu, May 31, 2012	
NWCG ICS Position Job Aids NWCG ICS Job Aids for Various Positions	Tue, Mar 16, 2010	
Operational Planning P's	Tue, Mar 16, 2010	

Featured Homeport

- Counter Piracy
- IPS Program
- Japan Radiation Incident
- MTSA
- Marine Event Permit
- Marine Safety Center
- Seafarers Access
- TWIC
- US Inspected Vessel
- Vessel Traffic Service

Coast Guard Quick


- CGMIX / PSIX (MIS)
- Coast Guard Auxiliary
- Mariner Credential
- Navigation Center
- Ship Arrivals
- U.S. Coast Guard
- Vessel Documents

Homeland Security

Select the Coast Guard ICS Position Job Aids.

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Chapter 9000 Appendices, Appendix V ICS Position Specific Job Aids



The screenshot shows a web browser window with the address bar displaying "Homeport: Coast Guard ICS Position Job Aids". The page has a navigation menu with tabs for "Missions", "Port Directory", and "Library". The "Library" tab is selected, and the breadcrumb trail reads "Library > Incident Command System ICS > Job Aids > Coast Guard ICS Position Job Aids".

On the left side, there is a sidebar with a profile picture of a Coast Guard member and a list of links: "Forms", "Incident Command System ICS", "General Information", "Forms", "Job Aids" (highlighted with an orange arrow), "Policy", "Training and Certification", "Laws and Regulations", "Maritime Security Training", "Policy", "Publications", and "U.S. Coast Guard Marine Safety Regulations".

The main content area is titled "Coast Guard ICS Position Job Aids". It includes a "Summary" section stating: "ICS Position Job Aids for use by Incident Command Post Personnel. Most of these job aids are in the process of being revised."

On the right side, there is a "Supporting Documents" section listing various PDF files with their sizes:

- Area Cmd - Job Aid 03-07.pdf - 118 KB
- Chaplain job aid 03-08.pdf - 436 KB
- CISM Specialist Job Aid-7-09.pdf - 531 KB
- COML Job Aid-Sep11.pdf - 4 MB
- DIVS Job Aid-Aug09.pdf - 5 MB
- Documentation Unit Leader (rev 10/02) - 104 KB
- FSC Job Aid-Aug09.pdf - 4 MB
- Incident Commander Job Aid (rev 10/02) - 125 KB
- Liaison Officer (rev 10/02) - 73 KB
- LSC Job Aid-Aug09.pdf - 6 MB
- MTSI Job Aid 8-08.pdf - 133 KB
- Operations Section Chief (Rev 10/02) - 107 KB
- Planning Section Chief (rev

Below the supporting documents, there are two additional sections: "Featured Homeports" with links to Counter Piracy, IPS Program, Japan Radiation, MTSA, Marine Event Per, Marine Safety Co, Seafarers Access, TWIC, US Inspected Vess, and Vessel Traffic Ser; and "Coast Guard Quick" with links to CGMIX / PSTX (MT), Coast Guard Aux, Mariner Credenti, Navigation Cente, Ship Arrivals, U.S. Coast Guard, and Vessel Document. At the bottom right, there is a "Homeland Security" section with a "CFATS" link and a Coast Guard seal.

The Coast Guard ICS Job Aids can be found on the right side of the page.

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Chapter 9000
Appendix W
U.S. Coast Guard-
Relevant, Instructions,
Guidelines,
Procedures, and
Practices List

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Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix W U.S. Coast Guard- Relevant Instructions, Guidelines, Procedures, and Practices List

U.S. Coast Guard- Relevant Instructions, Guidelines, Procedures, and Practices List

The following U.S. Coast Guard Commandant Instructions (COMDTINST/CI), policies, and publications provide prevention, planning, and preparedness, response, and external cooperation/coordination guidelines and responsibilities for all Coast Guard units to follow. All of the publications below are located at the following website: http://www.uscg.mil/directives/listing_cim.asp?id=16000-16999.

Subject/Title	COMDTINST/CI/COMDTPUB
Alignment with the National Incident Management System and National Response Plan	COMDTINST 16000.27
Area Contingency Plan Organization, Revision, Cycle, and Distribution	COMDTINST 16471.3
CERCLA Non-Incident Funds	COMDTINST 16451.7

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Chapter 9000 Appendices, Appendix W U.S. Coast Guard- Relevant Instructions, Guidelines, Procedures, and Practices List

Coast Guard Participation in the Marine Sanctuary Program	COMDTINST 16004.3A
Coastal Zone Management, Federal Consistency Procedures	COMDTINST 16451.1
District Response Advisory Team Assistance Procedures	COMDTINST 16465.41A
Emergency Contacts for Responding to Discharges which Pose a Substantial Threat to Public Health or Welfare	COMDTINST 16460.5
Environmental Compliance Evaluation (ECE) Program	COMDTINST 16478.5
Environmental Initial Assessment Survey (IAS) Program	COMDTINST 16475.5

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Chapter 9000 Appendices, Appendix W U.S. Coast Guard- Relevant Instructions, Guidelines, Procedures, and Practices List

Floodplain Management And Protection	COMDTINST 16475.3
Guidance for Coast Guard Coordination of Marine Transportation System (MTS) Improvement Efforts as the Regional and Local Level	COMDTINST 16010.9
Guidelines for Implementation and Enforcement of Vessel Response Plans, Facility Response Plans, and Shipboard Oil Pollution Emergency Plans	COMDTINST 16450.32A
Marine Safety Manual, Marine Environmental Preparedness and Response Procedures	COMDTINST M16000.14, Volume IX
Place of Refuge Policy	COMDTINST 16451.9
Preservation of the Nation's Wetlands	COMDTINST 16475.2B

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Chapter 9000 Appendices, Appendix W U.S. Coast Guard- Relevant Instructions, Guidelines, Procedures, and Practices List

Protection of Living Marine Resources Program	COMDTINST 16475.7
Use of Special Monitoring of Applied Response Technology (SMART) Protocols	COMDTINST 16470.1
U.S. Coast Guard Incident Management Handbook	COMDTPUB P3120.17A
Spill of National Significance (SONS) Response Management	COMDTINST 16465.6

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Chapter 9000
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Environmental
Sampling Guidance

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Chapter 9000 Appendices, Appendix X Environmental Sampling Guidance

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Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix X Environmental Sampling Guidance

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Environmental Sampling Guidance

Summary

This document has been prepared by the Response Science and Technology subcommittee of the Southeast Louisiana Area Committee. It intends to describe the environmental sampling that may occur during an emergency response to an oil spill or hazardous materials release. The reader should refer to agency, or company, protocols and procedures for detailed information for executing sampling appropriately.

Sampling during an incident is a highly complex and variable activity that requires specific field and laboratory methods for each type of sample, and a rigorous chain-of-custody for all samples to be considered valid. The term sampling and samples includes collecting physical materials, photography, surveys, documentation, etc. All types of sampling should be done with a pre-specified plan that includes a workable data management plan for the scale of the incident or incident phase.

Sampling and ICS

The Unified Command may require the Environmental Unit to produce an Environmental Sampling Plan for the coordinated collection, documentation, storage, transportation and sample submittal to appropriate laboratories for analysis and/or storage. The SSC will coordinate the development of sampling plans with agency and industry technical specialists and the NRDA Trustees as appropriate. The plan is executed by Operations Section staff. Additionally, when an Environmental Sampling Plan is needed, standard operating procedures should be prepared so that sample collection activities, sample documentation, and sample nomenclature are defined and standardized across all parties performing the activities. Note that there may not be existing procedures for the types of sample collection being performed. Furthermore, a Quality Assurance Project Plan may also need to be prepared to tie in the data quality objectives from the sampling efforts with the analytical activities that are performed, inclusive of specifying the frequency and type of field and laboratory quality control samples that will be collected. In the initial stages of a response incident, decisions should be made with an eye towards what information will be needed by those personnel evaluating data and making decisions from the collected data.

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Chapter 9000 Appendices, Appendix X Environmental Sampling Guidance

Sampling Purpose

During the initial phase of an incident, sampling will focus primarily on: 1) determining the pollution source or product being released, 2) determining the spread of the product, 3) determining background data for comparison to current conditions.

Sampling may be conducted for human health and safety, response decision making, criminal investigations, natural resource damage assessment (NRDA), etc. Plans for those purposes will usually be developed by specialists in those fields.

Sampling Strategy

A source sample should be taken as close to the release point as safe and practical. This provides for the least weathered or diluted sample of the product being released into the environment. This sample will be used for many purposes, including product identification and chemical composition, and will act as the standard that other samples are compared against.

A spill sample should be taken within the affected area to determine how the released material is altering or impacting the environment. Motivations could include human health and safety, effects on biota or modeling ground-truthing.

A background sample should be taken in an unaffected area to determine a baseline that existed prior to the release. This should include water, sediment/soil, air, and biota samples.

The agencies that could be involved with sampling for an incident that occurs within the scope of this Area Contingency Plan include: U. S. Coast Guard, the Environmental Protection Agency, National Oceanic and Atmospheric Administration, Department of Interior, U.S. Fish and Wildlife Service, Louisiana Oil Spill Coordinator's Office, Louisiana Department of Environmental Quality, Louisiana Department of Wildlife and Fisheries, LA State Police and Parish Agents.

Analytical Laboratory Services

In the event that a spill or hazardous materials release occurs and non-routine analytical services are required, a laboratory and back-up laboratory will need to be identified that have capability, turn-around time, and capacity to perform the desired analyses; meet the defined data quality objectives; and have the capability to substantiate the reported analytical results by supplying the project-defined full data package deliverable and electronic data deliverable.

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Chapter 9000 Appendices, Appendix X Environmental Sampling Guidance

Data Reporting

During a large-scale incident, the preparation of a data management plan may be needed to define the data collection and reporting processes. Agencies involved in responding to an incident should identify the database platform that will be utilized to collect all sample and analytical data and define the primary keys for the electronic data deliverable that will be used. Sampling and analytical firms responding to the incident will be required to meet the data management plan to supply field-collected data and analytical data, respectively. Additionally, the location of where, when, and how the data was collected should be made available.

Data Evaluation

Prior to the release of data external to those responding to the incident, data should undergo an evaluation for completeness, correctness, compliance, and usability of the reported results. The level of scrutiny should be defined prior to sample collection and should be based upon the data quality objectives and data use.

Elements of a Sampling and Monitoring Plan

The following outline illustrates the most commonly used elements of a sampling and monitoring plan. It is not expected for an actual plan generated during an incident to copy the outline below:

- Introduction and Purpose
- Field Equipment
- Monitoring
 - Target Analytes and Detection Limits
 - Fixed Real-Time Monitoring Locations
 - Mobile Platforms for Monitoring
- Sampling
 - Sampling Procedures
 - Sample Preservation
 - Sample Labels
 - Shipping and Handling of Samples
 - Holding Times for Samples

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- Documentation Methodology
- Calibration and Maintenance of Equipment
- Equipment Decontamination
- Chain of Custody
- Laboratory and Analytical Methods
- Laboratory Deliverables
- Data Quality and Management
- Data Analysis
- Project Organization and Management

Contributions

The Response Science and Technology subcommittee would like to thank the following organizations for their contributions to this document: US Coast Guard, National Oceanic and Atmospheric Administration, Louisiana Department of Environmental Quality, Environmental Standards Inc and Louisiana State University.

References

USCG Marine Safety Laboratory, New London, CT,
<http://www.uscg.mil/hq/cg5/msl/>

NOAA Office of Response and Restoration, Seattle, WA,
<http://response.restoration.noaa.gov/>

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Chapter 9000
Appendix Y
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Natural Disaster Response Plan

Background

Oil and chemical production and storage facilities in southeastern Louisiana are susceptible to dangerous hurricanes and severe weather. More than 30 hurricanes have passed close to the Louisiana coastal zone in the last century, causing severe damage from wind and storm surge. On average, a tropical storm or hurricane is expected to strike somewhere along Louisiana's coast about once a year. Louisiana's flat coastal zone makes tropical storms and hurricanes especially dangerous. Storm surge pushed by an approaching hurricane can reach heights of more than 20 feet and spread far inland, devastating anything in its path. After a hurricane, access to most of southeastern Louisiana is very difficult as the roads and supporting infrastructure are either flooded or destroyed by the storm. High water, waterways closures, and obstructions, in what were deemed as safe navigable waters prior to the hurricane, eliminate many conventional transportation methods.

Unlike most oil discharges and chemical releases, where there is a single point source at one location from which the spill spreads, the pollution associated with hurricanes and tropical storms are usually widespread throughout more than 2,500 square miles of southeastern Louisiana, due to wide distribution of oil and chemical production activities within the State. In addition to pollution from production facilities, oil storage tanks, and pipelines, there will typically be smaller discharges of refined oil products such as diesel fuel and gasoline from fishing vessels, small fuel storage tanks, as well as trucks and automobiles. In addition to the massive amounts of oil spilled, the total destruction caused by a storm can leave tens of thousands of containers of industrial hazardous materials and household hazardous waste dispersed throughout the area.

Pollution response, under the umbrella of the National Response Framework (NRF), will be successful because of the plans, capabilities, and partnerships forged in accordance with the National Contingency Plan (NCP), combined with the effective use of the Incident Command System (ICS). However, the NCP should not get lost in the shuffle of the massive federal, state and local response associated with the full implementation of the NRF.

One of the most essential keys to successfully responding to a natural disaster is effective management of large amounts of discrete pollution targets at one time. Incident management teams must ensure that the data management tools

Southeast Louisiana Area Contingency Plan

Chapter 9000 Appendices, Appendix Y Natural Disaster Response Plan

selected can be continuously changed or updated to suit the dynamic information needs of the response and be scalable

Funding Authorities

FEMA Mission Assignments

When a natural disaster is of such magnitude that a State government's resources are overwhelmed, the State may request Federal response assistance to supplement ongoing disaster relief activities. The reimbursement of Federal agency expended funds in support of Federal Emergency Management Agency (FEMA) disaster relief efforts is permitted when support is provided under a Mission Assignment (MA). An MA is a work order issued to a Federal agency by FEMA directing the completion of a specific task, and citing funding, management controls, and guidance. Although most agencies assigned an MA will be reimbursed for their efforts, the possibility exists under the Stafford Act that FEMA can task agencies without expectation of reimbursement. MAs are directives issued by FEMA; they are not contracts or Interagency Agreements (IAAs) but they are an agreement between FEMA and the responding agencies. In most cases, MAs are issued only for assistance under the Stafford Act, not for assistance provided that would normally fall under an agency's independent authorities or responsibilities. For example, the Coast Guard would not receive an MA for search and rescue activities conducted offshore after a hurricane because this would be a mission conducted under the Coast Guard's statutory authority.

MAs are typically assigned by FEMA to address actions required under one of the 15 different Emergency Support Functions (ESFs) described in the NRF. The NRF establishes a comprehensive all-hazards approach to enhance the ability of the Federal government to manage domestic incidents. Consequently, the ESFs are categorized around the major response and recovery functions associated with an incident, such as ESF 1 – Transportation, ESF 9 – Search and Rescue, and ESF 10 – Oil and Hazardous Materials. The Coast Guard has primary for ESF 9 and ESF 10. Therefore, the Coast Guard may receive tasking by FEMA under several MAs for different ESFs; e.g. an air station launches a helicopter to provide damage assessments for FEMA (ESF-5 Emergency Management) and launches a second helicopter to provide transportation (ESF-7 Logistics Management and Resource Support) for disaster personnel and supplies.

Oil Spill Liability Trust Fund (OSLTF)

The (OSLTF) pays for removal costs and damages resulting from oil spills or substantial threats of oil spills to navigable waters of the United States. The

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OSLTF is used for costs not directly paid by the polluter, referred to as the responsible party (RP). The fund is also used to pay, costs to respond to "mystery spills," for which the source has not been identified. Since mystery spills are anticipated before a storm impacts southeast Louisiana, it's likely the FOSC will have a relatively small OSLTF funding stream open to get contracted resources deployed as quickly possible after the storm passes. The ceiling limit on this OSLTF project will vary depending on the needs of the response and how soon a mission assignment can be issued to take over the costs. It's likely that responsible parties, natural resource trustees and other third parties will submit claims against the OSLTF after the storm.

Comprehensive Environmental Response, Compensation, and Liability ACT (CERCLA)

CERCLA enables Federal agencies to respond immediately to hazardous substance releases and contamination problems that pose a threat to public health and the environment. Removal costs are recovered from the RP(s) by EPA. Post-storm, the threat to public health will be prevalent as citizens return to their parishes after the flooded and impacted areas are accessible, and orphaned containers have been deposited in yards, schools and playgrounds, places of employment, and various other locations easily accessible to the general population. Threats to the environment exist when orphaned containers are deposited into the wetlands, wildlife refuges, and many other sensitive ecosystems. Additional threats include releases from chemical facilities, chemical transfer facilities, and various other facilities that use, produce, transport, or have a supply of hazardous substances. The Superfund was designed to address discrete incidents and not multiple chemical releases across a large region. Hence, the full impact of hazardous substances to the public and the environment cannot be ascertained in totality with limited CERCLA funding. For HAZMAT, an ESF-10 mission assignment is **critical** to completing a comprehensive needs assessment and mitigating all actual and potential releases of hazardous substances that are an imminent and substantial threat to the coastal zone.

The highest priority HAZMAT targets will be those that are actively leaking, an imminent threat to public health or welfare and/or have actual or potential impact to navigable waterway. Where the responsible parties are known, an effort initially shall be made, to the extent practicable, to determine whether they can and will perform the necessary removal action promptly and properly.

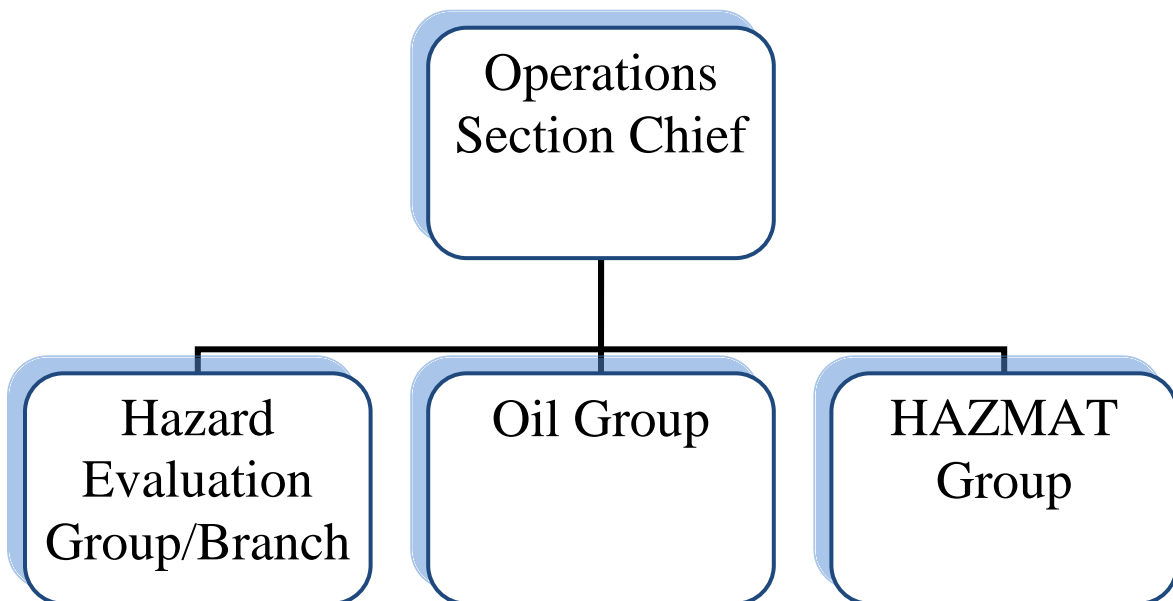
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ICS Positions

Oil and hazardous material data needs to be collected into a central response database in order to track all targets for prioritization, management of resources and situational awareness. The following positions play a critical role in the collection and dissemination of target data for operational decision making.

Operations Section



Hazard Evaluation (HEG) Group/Branch evaluates the impacted areas to determine the magnitude of the event, map the geographical boundaries of the event, and identify immediate threats to public health and the environment during the initial phase of a response. The HEG Group will determine the most heavily impacted areas, assess critical infrastructure (e.g. public water supplies and wastewater treatment facilities) and facilities for damage. Any active releases and discharges will be reported back to command as quickly as practicable. A secondary function is to identify locations for Incident Command Post (ICP), Forward Operating Bases (FOB) and determine operational challenges (roadways destroyed and areas of flooding, etc). Once the initial assessments are complete, the HEG conducts detailed evaluation and documentation of oil and hazardous material targets to direct ground forces and determine operational requirements. As the response dictates, HEG members will merge with other Operation Section branches or

Hazard Evaluation Group
Leader: USCG/DEQ
Members: Federal & State Reps

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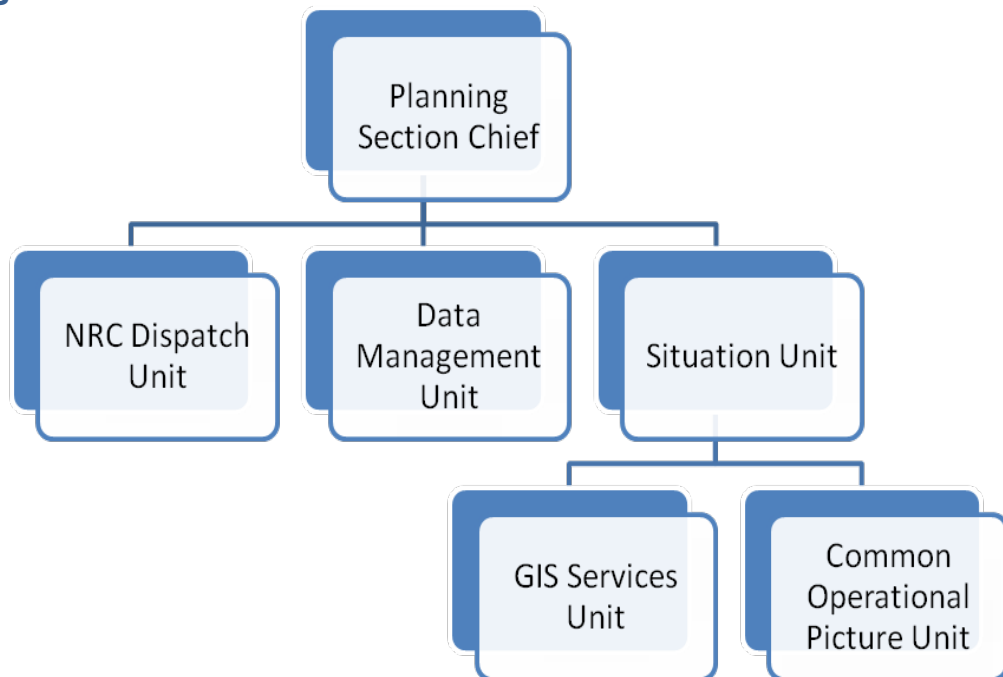
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transition to SCAT teams in the Environmental Unit to utilize their situational knowledge.

OIL/HAZMAT Groups are responsible for ensuring that oil discharges and hazmat releases are properly mitigated and/or recovered. Each group will have their own supervisor.

Group Leader: USCG/DEQ Members: Federal & State Reps

Planning Section



NRC Dispatch Unit (NRC Dispatch) is within the Planning Section and works in close coordination with the Data Management Unit (DMU). The NRC Dispatch is responsible for monitoring the NRC inbox and conducting initial investigations on all reported discharges/releases reported via the NRC. After investigation, the NRC will prioritize the targets and refer the information to the DMU for further clarification/prioritization. Sources of information outside Operations Section (Command Center, SCAT, entities outside official response, etc...), will debrief with the NRC Dispatch Unit and NRC Dispatch Unit will ensure all information is reported to the NRC via online reporting (www.nrc.uscg.mil) or telephone (1-800-424-8802). The NRC Dispatch may encourage secondary reporters to call/report to the NRC; however, the ultimate responsibility lies with the NRC Dispatch Unit. The NRC Dispatch Unit

NRC Dispatch Unit Leader: USCG NRC Dispatchers: USCG x 2
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will debrief with all sources of information outside Operations Section and conduct data entry into the response database. The NRC Dispatch Unit will be staffed with Coast Guard members. These members must be proficient in data entry as well as competent in performing thorough initial investigations.

Data Management Unit (DMU) is within the Planning Section and is responsible for compiling data submitted by field teams, disseminating information to end users, generating reports and overall management of the response database. **The Data Management Unit is not responsible for data entry or primary Quality Assurance and Quality Control (QA/QC).**

Data Management Unit
Leader: NOAA
Members: USCG/DEQ

The Operations Section and NRC Dispatch Unit must take ownership over data entry and work with the Data Management Unit to ensure their work is being captured correctly. When the DMU receives information of new oil and hazardous material targets/threats, the information will also be referred to the NRC Dispatch Unit for proper reporting. Operations Section will have several DMU members attached to them to ensure field personnel properly input data and QA/QC is conducted prior to submission to DMU.

Work Schedule: DMU will work hours similar to Operation Section to ensure cohesive flow of data from field to the SOD, some offsetting of hours may be necessary to avoid burnout and optimize usage of man hours. When down time exists, cooperation with NRC Dispatch Unit should occur.

Geographic Information Systems (GIS) Services Unit (GSU) is subordinate to Situation Unit (SIT) and provides mapping services, such as generating maps for field teams, supplying the Common Operational Picture (COP) and managing GPS/photographic data from field teams. GSU will be staffed by two NOAA GIS technicians and at least one USCG person with familiarity with GIS and/or COP. **Work Schedule:** GSU Leader and Deputy will work 1200 to 2400 to handle the data flow. The NOAA member of DMU can handle GIS demands during morning hours. The COP Manager will work similar hours to Situation Unit Leader and support the proper usage of the COP during briefings.

GIS Services Unit
Leader: NOAA
Deputy: NOAA

Common Operational Picture (COP) Unit manages the Common Operational Picture, which is a digital version of the Situation Board, and ensures that all information is up-to-date as practicable.

COP Unit
Leader: USCG

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Other Units

Other Units that can contribute valuable field data to the response (i.e. SCAT, Wildlife, NGO's) should work directly with the NRC Dispatch Unit to ensure proper inputting/updating of data. The NRC Dispatch Unit will ensure that submissions are incorporated into the response database by the Data Management Unit. These other contributors should not go directly to the DMU. to the size and scope

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TAB A – Data Management Plan

Summary

The pollution response component of a natural disaster response presents a set of challenges unlike other pollution responses. The pollution threats are numerous and spread over a large geographic area. The multitude of pollution targets can be from a variety of sources, including wellheads, facilities, orphan containers or vessels. Effective data management is critical during a multi-target response in order to ensure appropriate use of resources. The follow document is to help ensure the success of data management during a natural disaster response.

Procedures for Field Data Documentation

Field documentation is critical for the success of any response, either for a single barrel of oil being discharged by a vessel or for a large scale Type 1 incident. The command cannot make sound decisions without sound data flowing from the field. To that end, the field personnel are responsible for ensuring quality data is being captured in the field.

Data Fields and Valid Values

Data fields are the pre-determined pieces of information that the response wants to capture and valid values are the acceptable inputs for those data fields. Agreement on the data fields and their valid values is critical to ensure the response is getting the data it needs to make decisions. Once an agreement is reached, the field data collection forms, response database and other deliverables are created to meet the needs of the response. The data fields and valid values discussed within this plan are considered a minimum description of a oil and hazardous material target and DOES NOT alleviate the need for traditional investigation, SCAT, reporting to NRC and required documentation of a target. The data fields, valid values and resulting products are intended to capture baseline data for Unified Command and Operations Section to properly manage their resources and mitigate oil and hazardous material threats during a post-natural disaster response with multiple targets.

Unique Identifier

A unique identifier is an alpha-numeric label identifies a particular target for tracking purposes. The NRC number usually plays this role, but during a post-natural disaster response, an NRC number might not be immediately available. As a gap fill, a temporary unique identifier for each target shall be assigned in the

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following format: YYYYMMDD_Team Name_Daily Number. For example: **20121006_HEG2_002** = the second target found by HEG Team 2 on Oct 06, 2012.

The unique identifier should not change over time and should not change as teams subsequently visit the same target. After the first assessment, if a team goes back out or the item is mitigated they should be referencing the unique identifier. For continuity and ease of identification, if field teams can, they should mark the target (with a sticker, hanging tag or spray paint) so that any team visiting the target will know that this target was previously assessed and has been assigned a unique identifier. When a target's unique identifier changes from the temporary unique identifier to the primary NRC number, this update should be reflected on the labeling of the target itself. The temporary unique identifier, primary NRC number and secondary NRC number(s) will be listed in the database for cross reference purposes.

Latitude and Longitude

Obtain a latitude/longitude point with a satellite enabled GPS unit for observed discharges or releases at facilities, vessels or other sources. If the oil and hazardous material target covers an area (not a single point location) obtain lat/long points that outline the target. Make certain that the GPS unit is set to use "WGS84" as the horizontal datum, set to read coordinates in decimal degrees (dd.ddddd) and Auto Tracking is turned on. Documentation needs latitude/longitude to 5 decimal points. The safest location for observing a oil and hazardous material target is upwind.

All personnel **MUST VERIFY** all lat/long position data by comparing observations against satellite imagery by means of GIS application (Google Earth, ERMA, EnterpriseGIS, SONRIS, Response Manager, etc). This step, when combined with data entry, is time consuming and field personnel should return to ICP/FOB early enough in day to ensure sufficient time is dedicated to data entry and QA/QC.

Photo Documentation

Prior to departure to field, ensure that camera is set to local time and spare batteries are available. A clear photo of GPS unit with the time (in 24-hr, hh:mm:ss format) taken at the beginning of operations will allow for geo-referencing of photos by using the Track Log from GPS unit.

It is more important to take a few good photos instead of many useless photos. Utilization of photo scales, recognizable landmarks and "the rule of thirds" will

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help ensure photos are useful to an audience that is crammed in command post or is not on-scene.

Aerial Team Procedures

Aerial Team could consist of a Rapid Needs Assessment Task Force or a Hazard Evaluation Group Task Force. Aerial Assessment Teams are not expected to conduct detailed documentation of targets, but are expected to capture critical data for decision makers. A special form with limited data entry has been created to reduce the data collection requirements and expedite the assessment process. Data that aerial assessment teams will be capturing are primarily nature of oil versus hazardous material, source, location, and size of affected area.

Surface Team Procedures

Surface Assessment Team (ground and/or water) and other group task forces will conduct more detailed documentation and complete a more thorough field data collection process because ground assets generally travel slower and have more time to make detailed observations. The field data collection forms will contain most all the data fields.

Procedures for Processing Field Data

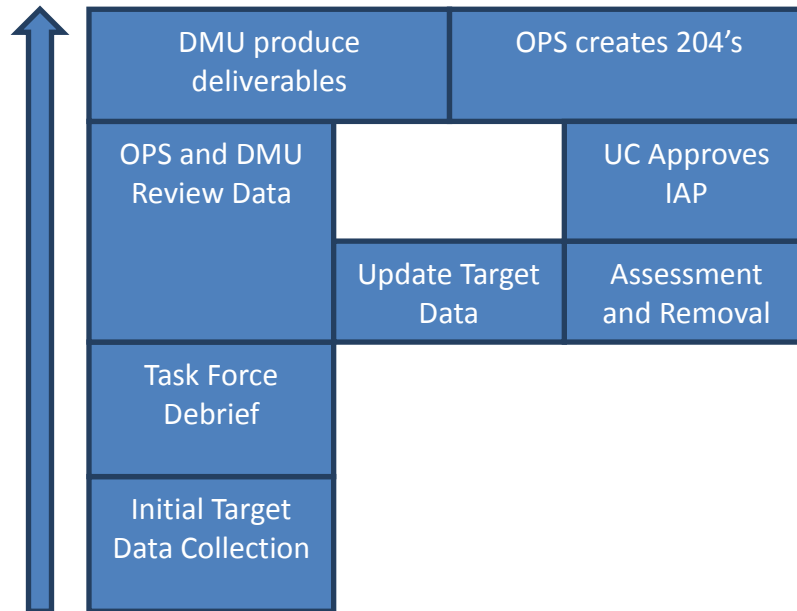
The most challenging aspect of data processing is ensuring that the incoming data is of high quality. In order to overcome this challenge, it has to be emphasized to field personnel the importance of thorough observations and proper documentation. The quality of the incoming data will directly affect the quality of the deliverables that the Unified Command, Section Chiefs and other decision makers will be using to manage the response. The illustrations below illustrate the general flow of data from the field to decision makers. Refer to the diagram below.

Please note that the two data cycles described below intersect at “OPS Chief reviews data.”

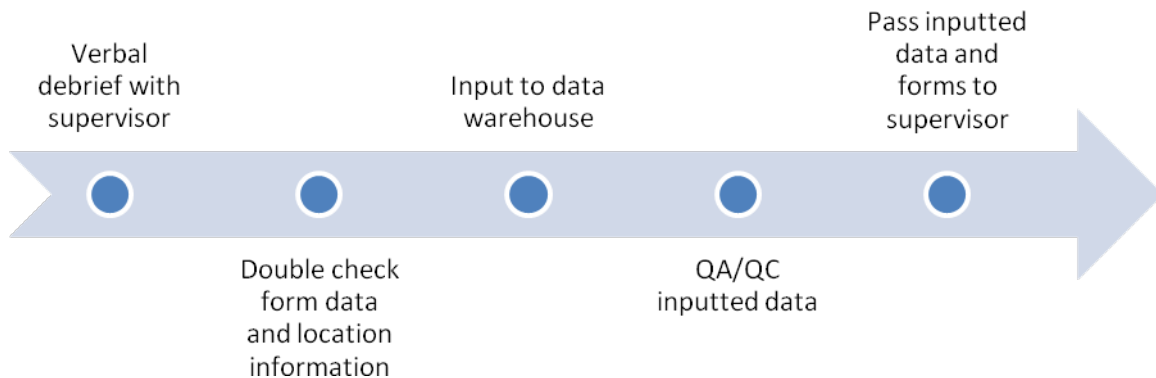
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Data Flow



Task Forces Debrief



Task Forces are the eyes and ears in the field for the response and collect invaluable data not only about targets, but also about operational challenges and recommendations. This acquired knowledge needs to be debriefed to their respective supervisor and inputted into the response database for processing. The team leader is responsible for initial data entry and initial QA/QC of data because they are the experts about their own field observations. Generally, the team leader is the most experienced member of the team.

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Data Fields and Valid Values

The following table describes the data fields and valid values for Louisiana Natural Disaster Response Plan - Marine Environmental Response. The data fields and valid values in this table define the jargon utilized during the response to ensure clear communication. The response database and associated forms are built around these data fields and valid values. The data fields and valid values establish a minimum description of a target and DOES NOT alleviate the need for traditional investigation, SCAT, reporting to NRC and required documentation of a target. These data fields, valid values and resulting products are intended to capture minimum data for Unified Command to properly manage their resources and mitigate pollution threats during a post-natural disaster response with multiple pollution targets.

Data Field	Format	Valid Values
Date Initially Assessed	YYYYMMDD	Date that target was first discovered
Field Team Initially Assessed	AAA0	Three letters and one number – the field team which discovered target
Daily Number	Three digit number	000 to 999, resets each day for each team
Date Updated	YYYYMMDD	Date that entry to spreadsheet is modified, this will allow for tracking the timeline of changes to target information
Field Team Updated	AAA0	Three letters and one number – tracking which field team has provided updated information about target
Location Name	BLANK BAYOU	Waterway, street, landmark, etc
Responsible Party	BLANK ENERGY	When known
Target Latitude	DD.DDDDDD	Positive Number, 0 to 90
Target Longitude	DD.DDDDDD	Negative Number, 0 to 180
Grid	A00	One letter and two numbers
Hazardous Category Not explicitly in form	OIL or HAZ	To delineate for OPS

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HAZ Type Only for HAZ targets (CERCLA)	Three letter code	DRM = Drum CYL = Cylinder TOT = Tote BCK = Bucket TNK = Tank FAC = Facility DBL = Debris Line (not a single target)
HAZ Count Only for HAZ targets (CERCLA)	Number	Number, or approximate number, of HAZ targets within a debris field or contained within the specified target
Oil Type Only for oil targets (OPA 90)	Three letter code	VSL = Vessel PPL = Pipeline FAC = Facility WHD = Wellhead SHN = Sheen UNK = Unknown, Mystery Source
% Coverage Only for oil targets (OPA 90)	Percentage of area being covered by product	Percentage of oil within the given length, width
Length For 2D targets	Number in feet	For debris fields and oil targets
Width For 2D targets	Number in Feet	For debris field and oil targets
Capacity	Number in Gallons	5, 55, 250, 1000, UNK, Worst Case Discharge
Discharge/Release Amount	Number in Gallons, lbs, cubic meters 1 Oil Barrel = 42 US gallons	50, 100, 10000, UNK – units of measure need to be noted!
Condition	Three letter code	DNO = Damage-No Discharge/Release DDR = Damaged-discharge/release NOD = No damage FIR = Fire EMG = Emergency UNK = Unknown

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Status	Three letter code Color designation is for target maps	<u>RED</u> FAR = Further Assessment Required RP = Requires RP action SOP = Requires Special Ops <u>YELLOW</u> MIT = Mitigation underway RDY = Ready for stakeholder site visit and sign off <u>GREEN</u> INF = Item not found REF = Refer to other agency (and agency is noted in comments) LIP = leave in place and no further action NFA = No Further Action REM = Removed and brought to pad RRP = Removed by RP DIS = Disposed SGN = closed by stakeholder site visit and sign off
Concurrence	Drop-down	<i>No Concurrence (No Sign-off)</i> <i>No Further Action (Signed-off)</i> <i>Referred to Regulatory Agency (Signed-off)</i> <i>Unfounded (Signed-off)</i>
Concurrence Note	Comment Box	Notes about concurrence
Action Taken	Text Box	Details to support the chosen STATUS
Recommendations	Text Box	Recommendation for mitigation
Resource Needs	Text Box	Supporting the recommendations
Comments	Text Box	Catch all for other data
Photographs	Text Box	For listing the names of photographs associated with target

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Primary NRC Number	123456	This should have only one value and used as the primary NRC number
Support NRC Number(s)	123456	This is a listing of other NRC numbers associated with this one target i.e. 123456. 234567, 345678, 987654

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TAB B – Surface Hazard Evaluation Form

Field Team:		TIME - 24hr Format	End:
Date (YYYYMMDD):		Start:	
Evaluation by: Foot / Boat / Airboat / Helicopter / Plane		Weather: Sun / Cloud / Fog / Rain / Snow / Windy	
Start Latitude:		Start Longitude:	
End Latitude:		End Longitude:	
Name	Organization	Phone	
Unique Identifier: (i.e. 20130801_HEB1_002)			
Date (YYYYMMDD):	Team Name (ABC#)	Daily Seq Number:	
Latitude (dd.dddddd):	Grid:		
Longitude (dd.dddddd):	Responsible Party:		
Location Description:	HAZ Type:	Oil Type:	
	HAZ Count:	% Coverage:	
Capacity: gallons/lbs/cu m			
Discharge/Release Amount: gallons/lbs/cu m	Length: feet	Width: feet	
Condition:	Status		
Action Taken:			
Recommendations:		Resource Needs:	
Comments:		Photographs:	
Primary NRC:		Support NRC:	
Unique Identifier: (i.e. 20130801_HEB1_002)			
Date (YYYYMMDD):	Team Name (ABC#)	Daily Seq Number:	
Latitude (dd.dddddd):	Grid:		
Longitude (dd.dddddd):	Responsible Party:		
Location Description:	HAZ Type:	Oil Type:	
	HAZ Count:	Oil % Distr:	
Capacity: gallons/lbs/cu m			
Discharge/Release Amount: gallons/lbs/cu m	Length: feet	Width: feet	
Condition:	Status		
Action Taken:			
Recommendations:		Resource Needs:	
Comments:		Photographs:	
Primary NRC:		Support NRC:	

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TAB C – Arial Hazard Evaluation Form

Field Team:		TIME - 24hr Format	End:
Date (YYYYMMDD):		Start:	
Evaluation by: Foot / Boat / Airboat / Helicopter / Plane		Weather: Sun / Cloud / Fog / Rain / Snow / Windy	
Start Latitude:		Start Longitude:	
End Latitude:		End Longitude:	
Name	Organization	Phone	
Unique Identifier: (i.e. 20130801_HEB1_002)			
Date (YYYYMMDD):		Team Name (ABC#)	Daily Seq Number:
Latitude (dd.dddddd):		Grid:	
Longitude (dd.dddddd):		HAZ Type:	
Location Description:		HAZ Count:	Oil Type:
		HAZ Count:	% Coverage:
Capacity: gallons/lbs/cu m			
Discharge/Release Amount: gallons/lbs/cu m		Length: feet	Width: feet
Unique Identifier: (i.e. 20130801_HEB1_002)			
Date (YYYYMMDD):		Team Name (ABC#)	Daily Seq Number:
Latitude (dd.dddddd):		Grid:	
Longitude (dd.dddddd):		HAZ Type:	
Location Description:		HAZ Count:	Oil Type:
		HAZ Count:	% Coverage:
Capacity: gallons/lbs/cu m			
Discharge/Release Amount: gallons/lbs/cu m		Length: feet	Width: feet
Unique Identifier: (i.e. 20130801_HEB1_002)			
Date (YYYYMMDD):		Team Name (ABC#)	Daily Seq Number:
Latitude (dd.dddddd):		Grid:	
Longitude (dd.dddddd):		HAZ Type:	
Location Description:		HAZ Count:	Oil Type:
		HAZ Count:	% Coverage:
Capacity: gallons/lbs/cu m			
Discharge/Release Amount: gallons/lbs/cu m		Length: feet	Width: feet

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TAB D – Operational Strategy for Oil Release

Summary

This guidance is developed under the Natural Disaster Subcommittee of the New Orleans and Morgan City Area Committees to ensure net environmental benefit during natural disaster response operations. This document focuses primarily on oil releases into marshes, but similar practices should be adapted for chemical releases. If the techniques below are not applicable to non-oil release, then consult with the Environmental Unit for target review and recommendations.

Marsh Operations Plan

Aggressive cleanup of free product releases in marshes may actually cause greater long-term damage than the pollutant itself. Any physical cleanup activities in marsh areas must comply with the follow items to prevent unacceptably high collateral damage to marsh vegetation and entrainment or entrapment of oil product into sediments:

- Any foot traffic access to the marshes shall avoid oiled grasses and sediments and utilize one-way-in and one-way-out traffic with walking boards in travel lanes and crosswalks on the marsh.
- *All treatment operations in the marshes will be done on the walking boards*, without direct foot traffic in the marsh. Walking boards should not be placed in un-oiled marsh areas or landward of the oiled wrack line, and no foot traffic or other entry by response personnel or equipment should occur in these un-oiled areas unless approved by the Unified Command.
- All vessel approaches to the marshes shall be limited to grounding the bow of the vessel on the fringe of the marsh, avoiding landing directly on top of the marsh grasses as much as possible.
- Water channels shall be used for navigation through the marshes. Under no circumstances shall vessels run over the top of or across the marsh grasses. Stopping or landing a vessel on top of the marshes is prohibited.

Sorbent boom should be staked along the front edge of oiled marsh for passive recovery of sheens. These sorbents must be inspected and replaced routinely. Best professional judgment by the Environmental Unit should be used to

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determine if further treatment or cleanup would provide net environmental benefit or might delay, rather than accelerate, recovery of the vegetation. This judgment should be based on fact, past studies or data from previous oil spills.

Oiled vegetative wrack at the water's edge can be manually picked up and removed with hand tools such as shovels, rakes, and pitchforks. Wrack in the marsh interior should not be removed, even near the source, unless heavily oiled with the potential to cause sheen or substantial contact risk to wildlife.

Pooled oil in areas that are difficult to access because of water depth may potentially be collected from a shallow skiff or airboat by using sorbent pads or vacuum systems with duck bills or other applicable and approved methods.

Low-pressure, high-volume flushing can be utilized by operations to mobilize oil from marsh and into a containment boom with sorbent tubes and/or collection system. The Environmental Unit is to be notified if this technique is desirable and to be utilized.

Cleanup is expected to progress in three phases:

Phase 1 – Source Control and Removal Phase that focuses on containment, recovery of mobile oil, and initial shoreline cleanup (e.g., bulk oil removal/gross decontamination).

Phase 2 – Managed Recovery Phase that consists of any final cleanup activities to mitigate residual pollution. The Managed Recovery Phase would typically include oil recovery using sorbent booms, demobilization and cleaning of equipment no longer needed, and final disposal issues. Although generally reduced, the Managed Recovery Phase still requires Federal and State oversight to ensure that all threats to the environment, as well as, public health and safety are minimized.

Phase 3 – Natural recovery and restoration. No additional cleanup or active mitigation is required. Once any and all remaining booms, sorbents, cleanup materials, and response waste (if any) has been removed, the site will be left for natural recovery and closure and sign-off procedures will be implemented.

The overall cleanup objective is to minimize or eliminate threats to wildlife and natural resources while avoiding doing more harm than good. Site-specific

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guidance for each cleanup division grid may be generated by the Environmental Unit.

The defined cleanup criteria may not be applicable (or even achievable) at all sites. Best professional judgment and the consensus of the Environmental Unit should be used to assess when the cleanup meets the above objectives. There may be additional requirements defined by private landowners or municipal managers, and such requirements may be outside the scope of the Unified Command.

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TAB E – Operation Strategy for Orphan Containers

Summary

As a result of a natural disaster, the Louisiana coastal zone can be littered with numerous drums, cylinders, tanks, and other containers that contain crude oil, refined petroleum products, chemicals and other hazardous materials (HAZMAT). Many of these items are stranded in and adjacent to residential communities, but many others are stranded in adjacent coastal habitats that are accessed and utilized by the public. Most of these items are classified as orphaned, or abandoned, and are a threat to public health and safety because of the potential for direct exposure or secondary contamination. Additional concerns include the unknown nature of many of the contents. Changing weather conditions or exposure to fires may cause releases that would result in increased public risk and possible need for evacuations.

To mitigate the threat posed by orphaned drums and hazardous materials, field operations will include a wide range of response activities and techniques. Because of the geographic extent of operations, the development of Forward Operating Base(s) may be essential to enhancing operational effectiveness. The goal of all recovery operations will be to minimize the risk to the public, and the responders, while minimizing the environmental impact of the response operations overall. Any orphan container that can be accessed by field response teams would also be accessible to the public and therefore constitutes a potential threat to public health and safety.

There are several phases to the orphaned drum and hazardous material container removal project: Assessment, Investigation, Operational Planning, Oil/Hazardous Material Removal and Disposal.

Assessment includes ground and aerial surveillance using small boats, airboats, and helicopters to identify and chart suspected threats. Aerial photographs will be correlated with recorded GPS overflight track lines for mapping and display in ERMA. Identified hazardous material and oil pollution related debris will be classified as drum, tank, cylinder, container, or other and prioritized by: no damage, damaged no spill, damaged leaking, or could not discern. The reconnaissance information will be used to develop situational awareness as to the scope of the problem and to direct future field activities.

Investigations relate to large orphan containers that have a known and viable industry owner. One objective of the investigation process is to attempt to

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contact the suspected owner to coordinate removal and any required pollution response under the owner's funding.

Operational Planning includes charting suspected targets using a GIS system, development of operational tactics, and any required natural resource trustee consultations. Technical experts and appropriate spill response guides such as the Emergency Response Guide (ERG), Material Safety Data Sheets (MSDS's), Chemical Hazards Response Information System (CHRIS), and Computer-Aided Management of Emergency Operations (CAMEO) reference resources should be consulted during operational planning to ensure a safe and properly mitigated response.

Actual Oil/Hazardous Material Removal will be conducted in a safe manner. Based on mitigation options available, consideration will be given to that which results in the least environmental impact, i.e., "do no more harm than good".

Preferred Response Options:

Container is leaking and there is an observable spill of oil/hazardous material:

- 1) Non-Oil/HAZMAT responders should only function in the First Responder role – identify threat, secure area with caution tape, and notify appropriate response team for technical support.
- 2) Secure leak if it can be done safely.
- 3) Mitigate and recover spilled material using appropriate technology and qualified Oil/HAZMAT personnel.
- 4) Remove gross environmental contamination using appropriate technology.
- 5) Recover contents by a transfer to drum or other temporary storage container.
- 6) Recover lightered, partially evacuated, or partially empty container to remove threat of residual Oil/HAZMAT contents.
- 7) Leave lightered, partially evacuated, or partially empty container in place if removal would create unacceptable habitat damage. Ensure the container is properly cleaned, marked and documented if left.

Container is damaged, but not leaking:

- 1) For damaged drums and smaller containers, consider over-packing and removal.
- 2) Recover contents by transfer to a drum or other temporary storage container.
- 3) Recover lightered, partially evacuated, or partially empty container to remove threat of residual Oil/HAZMAT contents.
- 4) Leave lightered, partially evacuated, or partially empty container in place if removal would create unacceptable habitat injury. Ensure the container is properly cleaned, marked and documented if left in the environment.

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Container is undamaged and structurally sound:

- 1) Recover the container intact and transport to staging area for disposition if feasible.
- 2) Recover contents by transfer to a drum or other temporary storage container.
- 3) Recover lightered, partially evacuated, or partially empty container to remove threat of residual Oil/HAZMAT contents.
- 4) Leave lightered, partially evacuated, or partially empty container in place if removal would create unacceptable habitat injury.
- 5) Consider leaving container and contents in place if inaccessible or access with heavy equipment would result in unacceptable habit damage relative to Oil/HAZMAT risk. Ensure the container is properly cleaned, marked and documented if left.

Because of the variability in habitat and accessibility, each container or accumulations of orphan containers along a debris line might require a unique recovery project using a different assemblage of field equipment. Hazardous Household Waste (HHW) may be recovered by orphaned drum and orphan container recovery teams at sites where field activities are being conducted.

Disposal for the field component of this operation is limited to transferring the material to one of the established disposal staging areas. Final disposal of collected Oil/HAZMAT debris is outside of the scope of this document.

As previously stated, all orphan containers that pose a risk to public health and safety will be removed unless the risk for habitat damage exceeds the benefit of removal.

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TAB F – Endpoints for Target Closure

Summary

These guidelines establish target endpoints for cleanup operations for pollution targets, including free product release and containerized product. Because all releases are unique and present distinct cleanup challenges, these endpoints may be amended to address as yet unforeseen circumstances and do not constitute shoreline restoration or full recovery criteria, which may be addressed through a longer-term process. These endpoints define the conclusion of cleanup operations while attempting to minimize overall impact (including those from operations) to sensitive resources.

Endpoint Criteria for Free Product Free Oil Product

- Oiled shorelines shall be free of recoverable product and not produce continuous sheen under normal weather and tidal conditions.
- There shall be no recoverable oiled debris.
- Oil stain or sporadic coat on vegetation and large immobile debris that does not produce continuous sheen and is not a contact risk to wildlife may be allowed to weather and degrade naturally. If the decision is to allow oil stain or sporadic coat to degrade naturally, monitoring of the area must occur.
- Oil stain or coat may still be present if best professional judgment of the Environmental Unit Leader (as defined below) determines that further recovery will not produce environmental benefit. Such residual oiling would be allowed to degrade naturally. If the decision is to allow oil stain or coat to degrade naturally, monitoring of the area must occur.

General Cleanup Endpoint Criteria for Orphan Containers

- An orphan container that poses actual or potential imminent or substantial threat to a navigable waterway will be removed, unless removal will cause undue harm to sensitive resources as is determined by the Environmental Unit Leader, using best professional judgment.

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- Leaving an orphan container in place will be determined on a case-by-case basis to ensure net environmental benefit and shall be properly cleaned and identified, including documented coordinates.
- Responsible Party is identified and assumes responsibility for removal.

Target Closure for Oil Pollution Targets

A joint site visit or an administrative review by Unified Command will be acceptable for Target closure. A joint site visit shall be made by an assessment team consisting of representatives of the Unified Command, natural resource trustees and, when possible, a parish representative. Incident-specific cleanup assessment and inspection forms will be generated to track progress. The FOSC and SOSC will sign off each target as having met the endpoints based upon the administrative review or on the observations and recommendations of the assessment team.

Sign off on endpoints does not constitute any acknowledgment that damages to natural resources caused by this incident have been adequately addressed.

It is recognized that the above endpoints may not be applicable (or achievable) at all sites. Best professional judgment and the consensus of federal, state and, if applicable, the RP's environmental consultants (identified herein as "Environmental Unit") should be used to assess when the cleanup meets the above objectives. The Environmental Unit Leader for these endpoints will be a representative of the state of Louisiana. If a responsible party exists for a given target, there may be additional requirements defined by private landowners or municipal managers, and such requirements may be outside the scope of the Unified Command.

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TAB G – Best Management Practices (BMPs) for the Protection of Sensitive Ecological & Cultural Resources

Summary

All operations shall be conducted with the overarching philosophy of “do no more harm than good”. Many of the following BMPs are provided for the protection of Federal & State protected species and other sensitive resources. For species identification, refer to the “EU Guidance on Threatened/Endangered Species”.

For All Personnel

- Watch for and avoid collisions with wildlife. Report all distressed or dead wildlife to Wildlife Rehab Task Force
- Report any distressed or dead sea turtles or marine mammals
- Remove all personal & Response trash or anything that would attract wildlife to work areas

For all Field Operations

Cultural Resource Protection:

- Any Native American graves or burials must be reported to the State Historic Preservation Office
- Native American and historic-era artifacts (e.g. pot shards & arrowheads) must not be collected.
- When activity occurs within 250 meters of a sensitive cultural resource as indicated by EU, a qualified archaeologist or other qualified historic preservation professional must be present to monitor the work.

Natural Resource Protection:

- Do not disturb wildlife or habitat (including foraging or nesting areas).
- Report any distressed or dead sea turtles or marine mammals to the stranding networks:
 - Report sea turtles to **225-765-2377**
 - Report dolphins to **1-877-WHALEHELP (1-877-942-5343)**
- Perform site visits & work from waterway, paved surfaces or existing roadways whenever possible to minimize impacts to sensitive habitats.
- Select vehicles and equipment which are least likely to disturb soils/sediments and keep loading to a minimum to reduce ground pressure (on unpaved surfaces).

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- Sensitive, non-ecological sites (i.e. cultural, historical, pipelines, water control structures, etc.) must be avoided unless otherwise authorized. EU will identify sensitive sites in the vicinity of actionable targets, though all field personnel should take care when transiting to and from actionable targets.
- Avoid minimize the release of contaminants from orphaned containers into critical habitat and other aquatic areas.
- Removal of orphan pollution containers from sensitive habitats may require specialized operations to minimize impacts. Such operations shall be closely coordinated with Environmental Unit.

For Specific Response Activities

Aerial Operations:

- Avoid hovering or landing aircraft in/near posted bird sites or areas with high bird concentrations.
- No flights below 500 feet over Wildlife Refuges, Management Areas, bird rookeries or National Parks.

Open-water Operations:

- Do not block major egress points in channels, rivers, passes, and bays.
- Water channels shall be used for navigation through the marshes. Under no circumstances shall vessels run over the top of or across the marsh grasses. Stopping or landing a vessel on top of the marshes is prohibited.
- All vessel approaches to the marshes shall be limited to grounding the bow of the vessel on the fringe of the marsh, avoiding landing directly on top of the marsh grasses as much as possible.
- Special Use Permits are required for conducting Air Boat operations in National Wildlife Refuges. Contact EU to ensure proper permits have been obtained.
- If using Air Boats, maintain a distance of 1,000 feet from critical habitats, rookeries, and/or other high bird use areas to minimize disturbance.
- Monitor boom, lines & underwater equipment regularly to prevent fish/wildlife entanglement/entrapment.
- If a sea turtle or marine mammal is observed trapped or entangled in a boom, line, or anchoring systems, open the boom to free the animal and notify the Wildlife Branch & Environmental Unit.
- Watch for and avoid collisions with sea turtles and dolphins.

Land-based Operations (includes river levees, battures and spoil banks):

- Minimize ground-disturbing activities to as small an area as feasible to complete the task.

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- Avoid posted/marked or other high bird use areas and minimize activities in critical habitat areas for Endangered Species.
- When working on/near sand beaches, do not disturb Piping Plovers

Marsh Operations - Protect marsh vegetation & associated soils by doing the following:

- Maximize use of open water, dikes, existing roads and trails and stay away from undisturbed marsh. Access routes should be planned to minimize impacts to the environment.
- Do not create unnatural ruts, channels, dikes or drainage routes and do not re-use previously made tracks.
- Use care around bank and shoreline crossings at canals, natural water bodies and ditches.
- Avoid disturbing vegetation, marsh soils, or peat with foot traffic/boats/equipment.
- Travel corridors should be as narrow as possible with designed turn around area. Stay within designated access or travel lanes when present.
- Minimize removal of clean sediment, seaweed and natural debris. Replace removed materials, if practical.
- Use low-pressure tire vehicles (e.g. ATVs, Gators) when practical and consult with the EU to minimize impact
- Avoid posted/marked or other high bird use areas and minimize activities in critical habitat areas for Endangered Species.
- Activities that may require removal of forested and shrub or scrub habitat should be minimized
- Any foot traffic access to the marshes shall avoid oiled grasses and sediments and utilize one-way-in and one-way-out traffic with walking boards in travel lanes and crosswalks on the marsh.
- All foot traffic in oiled marshes will be done on the walking boards, with no direct foot traffic in the marsh. Walking boards should not be placed in un-oiled marsh areas, and no foot traffic or other entry by response personnel or equipment should occur in these un-oiled areas unless approved by the Unified Command.
- If pollution target location is inaccessible or access with heavy equipment would result in unacceptable habitat damage relative to that posed by the pollution threat, then specialized operations may be needed to minimize impacts. Such operations shall be closely coordinated with Environmental Unit.
- Water channels shall be used for navigation through the marshes. Under no circumstances shall vessels run over the top of or across the marsh grasses. Stopping or landing a vessel on top of the marshes is prohibited.

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The Unified Command recognizes the importance of partnerships with trust resource agencies and the stewardship of the environment. The procedures below are intended to expedite target closure and sign-off process while allowing opportunity for trustee input.

The Operations Section will use their professional judgment to apply the appropriate status (open or closed) to a target in the database. Once a target is set to be closed, that target will be routed to the Environmental Unit via spreadsheet summary for review. The Environmental Unit will determine if concurrence with closed status exists by approved methods. If concurrence does not exist, recommendations for further action will be provided to Operations Section. If concurrence exists, then the database will be updated to reflect change and supporting documentation completed.

The acceptable methods for achieving concurrence on closure status of a target may include administrative decision, aerial inspection or site inspection. The Environmental Unit will use their best professional judgment to determine the risk of a target and an appropriate method for achieving concurrence.

For HAZMAT Targets

- Low risk targets will achieve concurrence by administrative decision, provided collected field observations and data can sufficiently justify concurrence
- Potentially high risk targets may require aerial inspection or site inspection to achieve concurrence.

For Oil Targets

- Any target that threatened or impacted navigable waters per National Contingency Plan (40CFR300.3), may require an aerial or site inspection to achieve concurrence

To support proper documentation of the above closure and concurrence process, the database will contain fields to capture such information. "Status" is a field that tracks operational status and is described in Data Management Plan.

"Concurrence" is a field that tracks the consensus on target closure between Operations Section, Environmental Unit, Unified Command and supporting resource agencies. An additional field, "Concurrence Comment," will capture any additional information that will ensure thorough documentation. The following table lists the valid values for "Concurrence" with definitions and examples.

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Concurrence	Definition	Example
<i>No Concurrence (No Sign-off)</i>	UC has determined that clean up endpoints have not been met and additional cleanup is required	-Operations determines that cleanup endpoints have been met, but UC determines otherwise
<i>No Further Action (Signed-off)</i>	UC determines that no further action is required and cleanup endpoints have been met	- UC concurs that endpoint has been met for a given target -Orphan container left in place in a satisfactory condition
<i>Referred to Regulatory Agency (Signed-off)</i>	UC determines that another agency is better suited to take responsibility for the target based on authority and jurisdiction and notes agency in comments field. Target responsibility is handed off.	-LDEQ assumes responsibility for target -USFWS, LDWF, LDEQ and/or Corps of Engineers
<i>Unfounded (Signed-off)</i>	Target lacks the minimum information to be further investigated	-Unsubstantiated reports -No lat/long info -No known pollution threat

NOTE: For initialization of "Concurrence" field, each entry will be populated with No Concurrence (Pending) and this will be the default value for new entries. All targets on graphical representations shall conform to the following convention:

- All targets Open and No Sign-off will be shaded red
- All targets Closed and No Sign-off will be shaded blue
- All targets Closed and Signed-off will be shaded green
- All oil targets will be a circle with a black border and black dot in the centroid
- All HAZMAT targets will be a triangle with a black border and black dot in the centroid

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TAB H – Target Site Inspection Form

1. GENERAL INFORMATION		Date (ddmmyy)	Time (24hrs Local Time)	Tide Height LMH
Site Name:				
SCAT Division/Grids:				
Inspection By: Foot -Airboat -Boat -Other			Sun- Clouds- Fog -Rain- Snow -Windy	
2. INSPECTION TEAM	Name, Organization, and Signature			
3. Grids	Description of Shoreline Surveyed:			
4 SHORELINE TYPES		Select Primary (P) and Secondary (S) Habitat Types Present		
	Marsh or Wetlands (includes Floating Marsh)		Manmade Structures	
	Tidal Flats/Mud Flats		Wave-cut Scarps	
	Shell or Mixed Sand & Shell Beaches		Other:	
5 CLEANUP ENDPOINTS		REFER TO ENDPOINTS (09 SEPTEMBER 2012)		
Yes No Has Operations remediated the target such that all endpoints been reached? If no, please explain:				
Other oiling conditions or observations:				
6 RECOMMENDATIONS				
Yes No Recommend Additional Active Cleanup (Stage 1). Comments:				
Yes No Recommend continued maintenance of passive sorbent recovery for sheens (Stage 2). Comments:				
Yes No Site meets the interim cleanup endpoints (Stage 3). Recommend natural recovery for residual pollution.				
Photos taken? Yes – No Additional Comments: Yes – No (if yes, see attached)				

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Bioremediation Policy

Bioremediation is a treatment technology that enhances existing biological processes to accelerate the decomposition of petroleum hydrocarbons and some hazardous wastes. Bioremediation has been used extensively in waste water treatment of spilled oil. The most extensive field research efforts have been the shoreline treatment studies in Alaska following the Exxon Valdez incident. This research suggested that shoreline treatment by nutrient enhancement significantly increased degradation rates of oil when compared to untreated shoreline areas. The benefits of bioremediation, however, have not been adequately demonstrated through field applications. Consequently, this technology should be considered more experimental than an accepted standard for clean-up of oil spills.

The data collected using bioremediation during the response to Deepwater Horizon has not been evaluated for inclusion in this plan at this time.

The promise of bioremediation providing increased rates of oil degradation with minimal input of human effort to clean-up the spilled oil is attractive. However, the technology is time consuming, unproven in open water environments, and probably best suited to treatment of specific types of shorelines and marsh habitats. At present, bioremediation should be viewed as a polishing agent for the final stages of cleanup rather than as a primary response tool- especially considering the slow rates of reaction to degrade the oil.

Southeast Louisiana Area Committee Approach to Bioremediation Use on Oil Spills

The primary objective of oil spill abatement and cleanup is to reduce the effect of spilled oil in the environment. Physical removal is the preferred method. However, mechanical recovery may be limited by equipment capability, weather, and sea conditions, spill magnitude, safety considerations, site accessibility, and surface load restrictions. In addition, efforts and equipment used for mechanical recovery may prove to be more destructive to the environment than the original contamination of oil.

Based on the results of research, and a general understanding of the principles of bioremediation, it is Southeast Louisiana Area Committee policy that this technology should be used strictly as a shoreline remediation tool with a preference for nutrient enhancement without the introduction of indigenous and/or non-indigenous microbes.

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Southeast Louisiana Area Committee Policy Guidelines for Bioremediation Use

The FOSC can request the use of a bioremediation agent through the processes outlined in the Bioremediation Checklist. Each agency resource trustee representative will be the point of contact for his/her constituency; the SSC will be the point of contact for all not represented.

The NCP, 40 CFR Part 300.190, authorizes the use of biological additives for the dispersion/abatement of oil spills. The product must be listed on the NCP Product Schedule to be considered for use.

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Bioremediation Checklist

Spill Data/Incident Information

Cause (Specific):

Date/Time: _____ Location: _____

Volume and Type of Discharge: _____

Potential Volume of Discharge: _____

Confidence in Data (high, medium, low): _____

Characteristics of Spilled Oil

Oil Type/Name:

Specific Gravity:

Flash Point:

Pour Point:

Viscosity:

%Aromatics:

%Saturates:

%Asphaltenes:

Weather and Water Conditions/Forecast (48HR)

Water Temp:

Air Temp:

Current Info:

Wind Speed:

Salinity:

Wind Direction:

Water Depth:

Sea State:

Tide Info:

Comments: _____

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Habitat Type/Area of Impact

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

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Bioremediation Characteristics

	Product 1	Product 2	Product 3
Name:	_____	_____	_____
Manufacturer:	_____	_____	_____
EPA Listed:	_____	_____	_____
Stockpile Location:	_____	_____	_____
Point of Contact:	_____	_____	_____
When Available:	_____	_____	_____
Amount Available:	_____	_____	_____
Amount Needed:	_____	_____	_____
Toxicity:	_____	_____	_____
Type (i.e., Mix):	_____	_____	_____
Physical Reactivity:	_____	_____	_____
Applicability on Oil:	_____	_____	_____
Efficiency:	_____	_____	_____
Application Means:	_____	_____	_____
Pos. Dosage Control:	_____	_____	_____
Dosage Rate Settings:	_____	_____	_____
Dose Charts Available:	_____	_____	_____

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Bioremediation Application Information/Evaluation:

Proposed Bioremediation Application Plan: _____

Equipment Proposed for Use: _____

Responders Adequately Trained: _____

Location of Area to be Treated: _____

Schedule of Bioremediation Operations: _____

Forecasted Weather Conditions at Time of Application: _____

Is the Vehicle for Application Efficient and Proper Given the Conditions Above:

Are Monitoring Schemes in Place or Readily Available: _____

Witness to the Application

Names

Date/Time

Platform Used: _____

Observation: _____

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404 - PAGE NOT FOUND

404 - Page Not Found. The resource cannot be found.

Description: HTTP 404. The resource you are looking for (or one of its dependencies) could have been removed, had its name changed, or is temporarily unavailable. Please review the following URL and make sure that it is spelled correctly.

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