

OIL SPILL RESPONSE PLAN

Kinder Morgan Crude & Condensate LLC



Prepared for:

**Kinder Morgan Energy Partners, L.P.
500 Dallas Street, Suite 1000
Houston , Texas 77002**

Prepared by:

O'Brien's Response Management Inc.
818 Town & Country Blvd., Suite 200
Houston, TX 77024-4564
Phone: (281) 320-9796 | Fax: (281) 320-9700
www.obriensrm.com

ACKNOWLEDGMENT AND PLAN APPROVAL

The information and procedures in this Plan must be treated as guidelines only. The user should determine to what extent it is practical and advisable to follow them. This decision may involve considerations not discussed in this Plan.

The information and procedures contained herein are considered to be accurate as of this date and are consistent with the National Contingency Plan (NCP) and applicable Area Contingency Plans (ACP) as detailed in Section 1.5.

CERTIFICATION OF QUALIFIED INDIVIDUAL AND ALTERNATE QUALIFIED INDIVIDUAL

Kinder Morgan Energy Partners, L.P. hereby certifies that the individuals identified as Qualified Individual and Alternate Qualified Individual in this Plan have the full authority in accordance with the applicable United States Federal and State regulations and as detailed in this Plan to:

1. Activate and engage in contracting with oil spill removal organizations.
2. Act as a liaison with the pre-designated Federal On-Scene Coordinate (OSC), and
3. Obligate funds required to carry out response activities.

Plan Approved:



Director - Operations

Signature

Title

Dennis Wamsley

05/31/2012

Name (please type or print)

Date

NOTE: O'Brien's Response Management (O'Brien'sRM) Inc. provided consulting and plan development services in the preparation of this Plan utilizing data provided by the owner/operator. O'Brien'sRM assumes no liability for injury, loss, or damage of any kind resulting directly or indirectly from the use of the regulatory interpretation, response planning, or information contained in this plan.

OPERATOR'S STATEMENT - SIGNIFICANT AND SUBSTANTIAL HARM AND CERTIFICATION OF RESPONSE RESOURCES

FACILITY NAME: Kinder Morgan Crude & Condensate LLC
 CORPORATE ADDRESS: 500 Dallas Street, Suite 1000
Houston, Texas 77002

- | | |
|---|---------------------|
| 1. Is the pipeline greater than 6 and 5/8 inches (168 mm) in outside nominal diameter, greater than 10 miles (16.1 km) in length? and | Yes [✓] No |
| 2. Has any line section experienced a release greater than 1,000 barrels (159 cubic meters) within the previous five years? or | Yes No [✓] |
| 3. Has any line section experienced two or more reportable releases, as defined in 49 CFR 195.50, within the previous five years? or | Yes No [✓] |
| 4. Does any line section contain any electric resistance welded pipe, manufactured prior to 1970 and operates at a maximum operating pressure established under 49 CFR 195.406 that corresponds to a stress level greater than 50 percent of the specified minimum yield strength of the pipe? or | Yes No [✓] |
| 5. Is any line located within a 5-mile (8 km) radius of potentially affected public drinking water intakes and could reasonably be expected to reach public drinking water intakes? or | Yes [✓] No |
| 6. Is any line located within a 1-mile (1.6 km) radius of potentially affected environmentally sensitive areas and could reasonably be expected to reach these areas? | Yes [✓] No |

Kinder Morgan Energy Partners, L.P. hereby certifies to the Pipeline and Hazardous Materials Safety Administration of the U.S. Department of Transportation that we have identified and ensured, by contract or by other means, the availability of personnel and equipment to respond, to the maximum extent practicable, to a worst case discharge.



Director - Operations

Signature

Title

Dennis Wamsley

05/31/2012

Name (please type or print)

Date

NOTE: It is the responsibility of the holder of this Plan to ensure that all changes and updates are made. The Plan Holder must:

- Remove and discard obsolete pages.
- Replace obsolete pages with the updated pages.

REVISION RECORD		
CHANGE DATE	AFFECTED PAGE NUMBER(S)	DESCRIPTION OF CHANGE(S)
November, 2012	Entire Plan	New plan distribution by O'Brien'sRM.

DISTRIBUTION LIST	
COPY NUMBER	PLAN HOLDER¹
1, 2 (Electronic Copies)	Office of Pipeline Safety Pipeline & Hazardous Material Safety Admin 1200 New Jersey Avenue SE-E-22-321 Washington, District Of Columbia 20590
3 (Electronic Copy)	Texas Railroad Commission (TRRC) Pipeline Safety Section 10320 IH 37 Corpus Christi, Texas 78460-0307
4	Kinder Morgan Director-Operations 17507 FM 1485 New Caney, Texas 77357
5, 6	Kinder Morgan Supervisor-Operations 6402 Hwy 225 Deer Park, Texas 77536
7	Kinder Morgan Manager-Operations 17057 FM 1485 New Caney, Texas 77357
8	Kinder Morgan Manager-Operations 17507 FM 1485 New Caney, Texas 77357
9, 10	Kinder Morgan Supervisor-Operations 8031 S Sam Houston Parkway W Houston, Texas 77085-2235
11, 12	Kinder Morgan Supervisor-Operations 3240 W FM 1161 Wharton, Texas 77488-3755
13	Kinder Morgan Tony Palacios 4526 FM 624 Robbstown, Texas 78380
14, 15	Kinder Morgan Supervisor-Operations 9819 Hwy 185 Victoria, Texas 77905

DISTRIBUTION LIST (Cont'd)	
COPY NUMBER	PLAN HOLDER¹
16	Houston Liquids Control Center Plan Coordinator 500 Dallas Street, Suite 1000 Houston, Texas 77003
17	John Greer Manager-EHS 500 Dallas Street, Suite 1000 Houston, Texas 77003
18	Orlando Rios Senior Safety Specialist 1902 Bob Bullock Loop Laredo, Texas 78043
19	David White Senior EHS Specialist 500 Dallas Street, Suite 1000 Houston, Texas 77003
20	Kinder Morgan Supervisor-Measurement 6402 Hwy 225 Deer Park, Texas 77536
21	Kinder Morgan Supervisor-Damage Prevention 2208 Hwy 83 Zapata, Texas 78076
22, 23	Kinder Morgan Line Patroller 9819 Hwy 185 Victoria, Texas 77905
24	Donald Schunka Line Patroller 9819 Hwy 185 Victoria, Texas 77905
25	Kenneth L'Anglois Operations Manager 6402 Hwy 225 Deer Park, Texas 77536
Kinder Morgan ePlanPro System	Kinder Morgan ePlanPro Enterprise System Accessible to all Responsible Personnel Hosted Online Various Locations, Texas
<p>NOTE¹: The Distribution of this Plan is controlled by the Copy Number located on the front cover or CD label. The Plan Distribution Procedures provided in Section 1.3 and the Plan Review and Update Procedures provided in Section 1.4 should be followed when making any and all changes.</p>	

1.0 INTRODUCTION AND PLAN CONTENT

- 1.1 [Plan Purpose/Objectives](#)
- 1.2 [Scope of Plan](#)
- 1.3 [Controlled Plan Distribution Procedures](#)
- 1.4 [Plan Review and Update Procedures](#)
- 1.5 [Regulatory Compliance](#)

Figure 1.1 [Facility Information](#)

Figure 1.2 [Piping System Overview](#)

1.1 PLAN PURPOSE/OBJECTIVES

The purpose of this Oil Spill Response Plan (Plan) is to assist Kinder Morgan Energy Partners, L.P. personnel in preparing for and responding quickly and safely to emergencies originating from the pipelines and associated facilities. The Plan provides techniques and guidelines for achieving an efficient, coordinated, and effective response to emergencies which may occur along the pipeline.

The specific objectives of the Plan are to:

- Establish Response Teams, assign individuals to fill the positions on the teams, and define the roles and responsibilities of team members.
- Define notification, activation, and mobilization procedures to be followed when a discharge occurs.
- Define organizational lines of responsibility to be adhered to during a response operation.
- Ensure compliance with federal, state, and local oil pollution regulations.
- Document equipment, manpower, and other resources available to assist with the response.
- Ensure compliance with the U.S. National Oil and Hazardous Substances Contingency Plan and associated Area Contingency Plan(s) for the area of operation.

1.2 SCOPE OF PLAN

This Plan has been developed in accordance with the regulation published in 49 CFR Part 194 - Response Plans for Onshore Oil Pipelines.

This Plan contains prioritized procedures for Company personnel to prevent or mitigate emergencies resulting from the operation of the pipeline. A description of the Pipeline's details is presented in Figure 1.1 with additional information provided in the sections, appendices and annexes.

1.3 CONTROLLED PLAN DISTRIBUTION PROCEDURES

The Manager of Emergency Response Programs is responsible for maintenance and distribution of the Plan. Distribution will be handled in the following manner:

- Distribution of controlled Plans is determined by the copy number assigned to agency and designated corporate Plan Holders. A distribution list is included in the Foreword.
- Company personnel who may be called upon to provide assistance during discharge response activities will have access to a copy of the Plan for their use and training.
- Any person holding a controlled copy of the Plan shall ensure that the copy is transferred to their replacement in the event of reassignment or change in responsibility.
- Various regulatory agencies will also be distributed a controlled copy of the Plan. The list of agencies is detailed in the Distribution List located in the Foreword.

1.4 PLAN REVIEW AND UPDATE PROCEDURES

Review/Update

The Plan resides as a web-based document, which permits authorized Corporate and field staff access to make:

- Appropriate revisions as required by operational or organizational changes.
- Appropriate revisions as required by changes in the names and phone numbers detailed in Section 2.0.
- Appropriate revisions as required by improved procedures or deficiencies identified during response team tabletop exercises or actual emergency responses.

Incorporation of Plan Revisions

Email notification allows Authorized Plan Holders to update hard copy Plans as changes occur.

The Individual Plan Holder shall:

- Review and insert the revised pages into the Plan.
- Discard or archive the obsolete pages.

Agency Revision Requirements

Company shall revise and resubmit changes to the U.S. DOT/PHMSA Pipeline Response Plans Officer within 30 days of each change that would substantially affect the implementation of the Response Plan. Examples of changes in operating conditions that would cause a significant change to the Plan include:

Conditions Requiring Changes

- An extension of the existing pipeline or construction of a new pipeline in a response zone not covered by the previously approved Plan.
- Relocation or replacement of portions of the pipeline, which in any way substantially affect the information included in this Plan, such as a change in the Worst Case Discharge volume.
- A change in the type of oil handled, stored, or transferred that materially alters the required response resources.
- A change in the name of the Oil Spill Removal Organization (OSRO).
- A material change in capabilities of the OSRO that provides equipment and personnel.
- A change in emergency response procedures.
- A change in the Qualified Individual.
- A change in the NCP or an ACP that has significant impact on the equipment appropriate for response activities.
- Any other changes that materially affect the implementation of the Plan.
- As a result of post incident or drill evaluations.

1.5 REGULATORY COMPLIANCE

DOT/PHMSA must be provided with two copies of revisions. The Company must submit the DOT/PHMSA issued Facility Control Number with the changes (the PHMSA Control Number is listed in Figure 1.1). In addition to periodic updates, when applicable, the Facility will resubmit the Emergency Response Plan to DOT/PHMSA every five years from the last approval date of the Plan.

Except as provided above, amendments to the following do not require approval by DOT/PHMSA:

- Personnel and telephone number lists included in the Plan.
- OSRO(s) change which does not result in a material change in support capabilities.

The development, maintenance, and use of this Plan implements Company policy and addresses the following regulatory requirements and guidelines:

- Federal Oil Pollution Act of 1990: U.S. DOT Final Rule for Transportation Related On-shore Facilities (49 CFR Part 194).

The response zones have been reviewed for consistency with the following plans:

- U.S. National Oil and Hazardous Substances Contingency Plan (NCP)
- U.S. EPA Region 6 Regional Contingency Plan
- USCG - One Gulf Plan
- USCG Sector Houston-Galveston Geographic Response Plan
- USCG Sector Port Arthur Geographic Response Plan
- USCG Sector Corpus Christi Geographic Response Plan

FIGURE 1.1 FACILITY INFORMATION

GENERAL INFORMATION					
Facility Name:	Kinder Morgan Crude & Condensate LLC				
U.S. DOT/PHMSA Control:	TBD				
Operator Name:	Kinder Morgan Energy Partners, L.P.				
Address:	<table style="width: 100%; border: none;"> <thead> <tr> <th style="text-align: left; border: none;"><i>Physical Address</i></th> <th style="text-align: left; border: none;"><i>Operators Address</i></th> </tr> </thead> <tbody> <tr> <td style="border: none;">500 Dallas Street, Suite 1000 Houston, Texas 77002</td> <td style="border: none;">Kinder Morgan Crude & Condensate LLC 500 Dallas Street, Suite 1000 Houston, Texas 77002</td> </tr> </tbody> </table>	<i>Physical Address</i>	<i>Operators Address</i>	500 Dallas Street, Suite 1000 Houston, Texas 77002	Kinder Morgan Crude & Condensate LLC 500 Dallas Street, Suite 1000 Houston, Texas 77002
<i>Physical Address</i>	<i>Operators Address</i>				
500 Dallas Street, Suite 1000 Houston, Texas 77002	Kinder Morgan Crude & Condensate LLC 500 Dallas Street, Suite 1000 Houston, Texas 77002				
Mainline Number:	(800) 265-6000 (24 Hours)				
Contact Person:	Dennis E. Wamsley, Director, Operations				
Primary NAICS Code:	486110				
Determination of Significant and Substantial Harm (U.S. DOT PHMSA):	The pipeline is greater than 6 and 5/8 inches in outside diameter, greater than 10 miles long, is located within a 5-mile radius of potentially affected public water intakes, and located within a 1-mile radius of potentially affected environmentally sensitive areas.				
Operator Statement of (U.S. DOT PHMSA) "Significant and Substantial Harm":	It is Kinder Morgan Energy Partners, L.P. 's goal to respond as quickly as possible to all uncontrolled releases of petroleum products, regardless of the source point location along the system. Based upon this goal, and the overbreadth of the definitions provided in 49 CFR 194.103 (c)(4) & (5), the Company is compelled to consider all the active line sections listed below in the Response Zone Annexes as capable of a release potentially causing "significant and substantial harm".				

PIPELINE LOCATION	
States/Counties:	The System covers 1 specific response zone(s) covering 1 state(s) and 4 county(ies) specifically detailed in the response zone annex.
States Traversed:	Texas
Pipeline System Overview Diagram:	See Figure 1.2

PHYSICAL DESCRIPTION - PIPELINE**Response Zone(s):**

The 24"/30" pipeline originates at the Petrohawk Facility in DeWitt County, Texas and transfers condensate through DeWitt, Victoria, Jackson, Wharton, Fort Bend, Brazoria and Harris Counties to the KMLT Pasadena and Oil Tanking Terminals located on the Houston Ship Channel.

- East Texas Response Zone

General:

- The Kinder Morgan Crude & Condensate LLC includes pipeline sections described below as well as supporting equipment and facilities.
- This Plan is written in English and understood by personnel responsible for carrying out the Plan.

Pipeline Specifications:

- **Products Type:**

Natural Gas Condensate

- **Pipe Detail:**The pipeline system consists of the following pipeline sections with the indicated diameters.

24" and 30" of varying wall thickness

RESPONSE ZONE INFORMATION***Response Resources:***

Facility spill mitigation procedures and response guidelines are provided in Section 3.0 for discharges that could result from any of the following scenarios:

- Pipeline rupture/leak
- Explosion and/or fire
- Failure of facility piping
- Equipment failure (e.g. pumping system failure, relief valve failure, etc.)

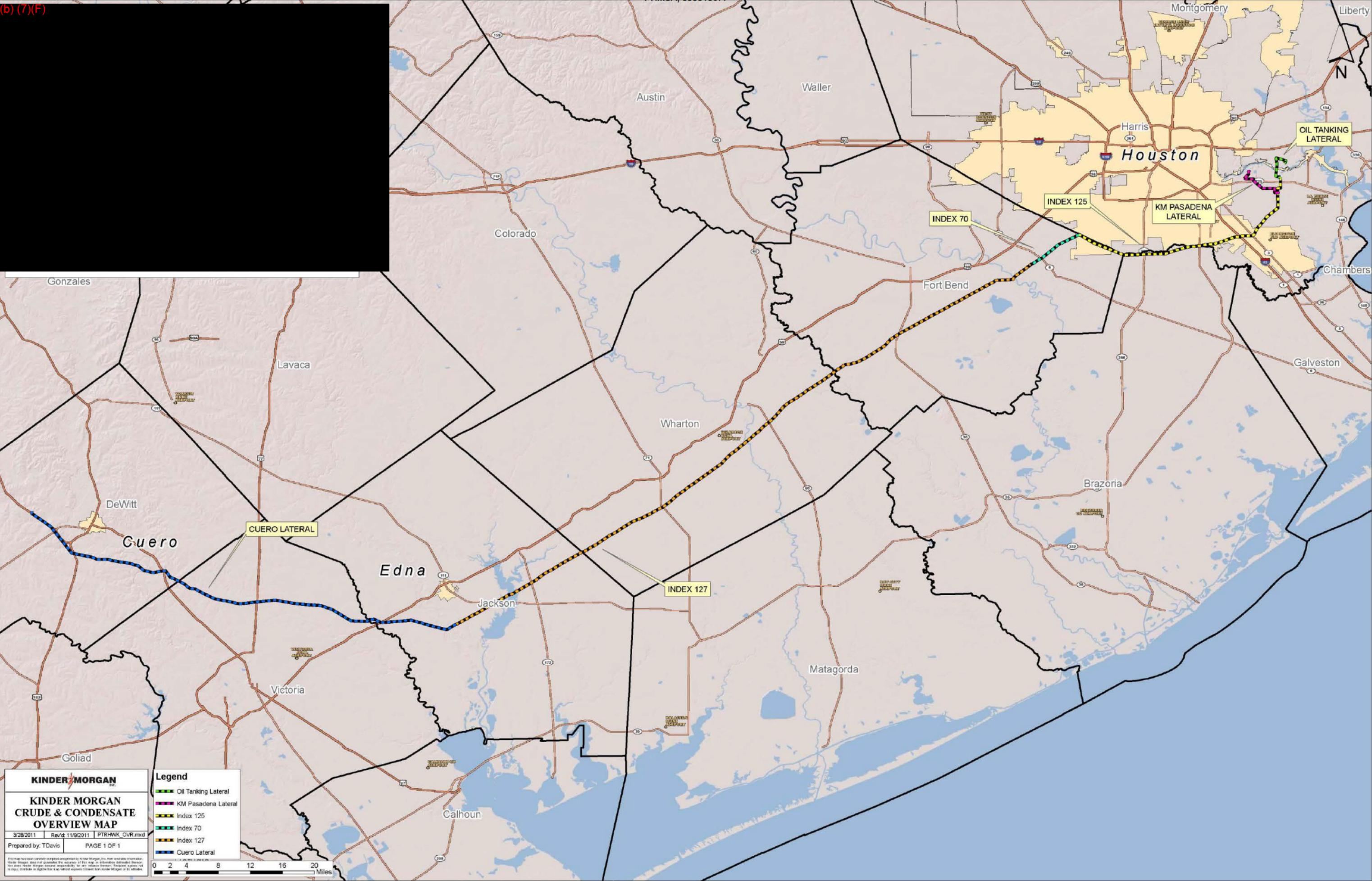
These scenarios could result in the following discharge volumes (additional details in Appendix B):

(b) (7)(F)



**FIGURE 1.2
PIPING SYSTEM OVERVIEW**

(b) (7)(F)



KINDER MORGAN

**KINDER MORGAN
CRUDE & CONDENSATE
OVERVIEW MAP**

3/28/2011 Rev'd: 11/9/2011 PTRHWK_OVR.mxd

Prepared by: TDavis PAGE 1 OF 1

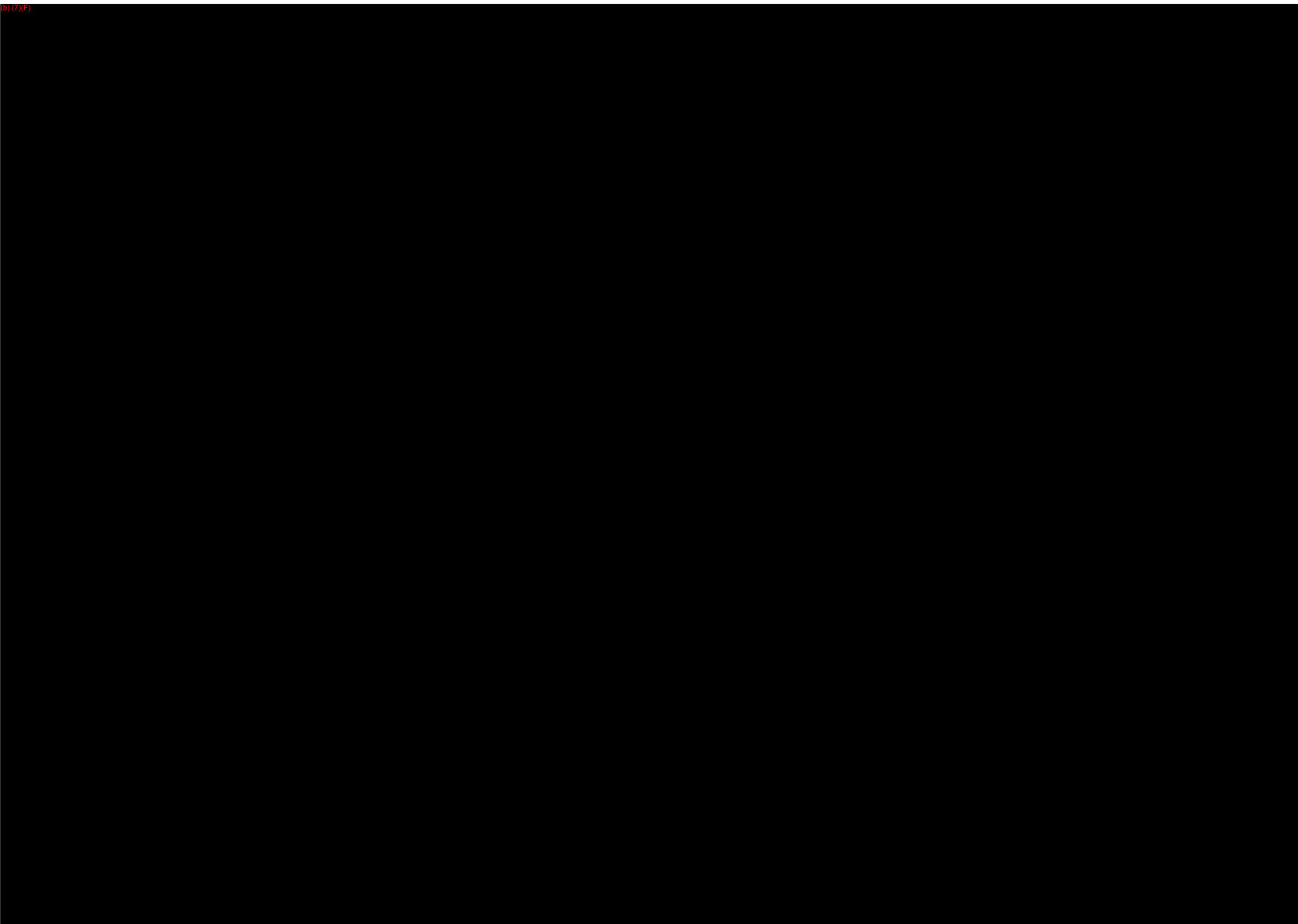
Legend

- Oil Tanking Lateral
- KM Pasadena Lateral
- Index 125
- Index 70
- Index 127
- Cuero Lateral

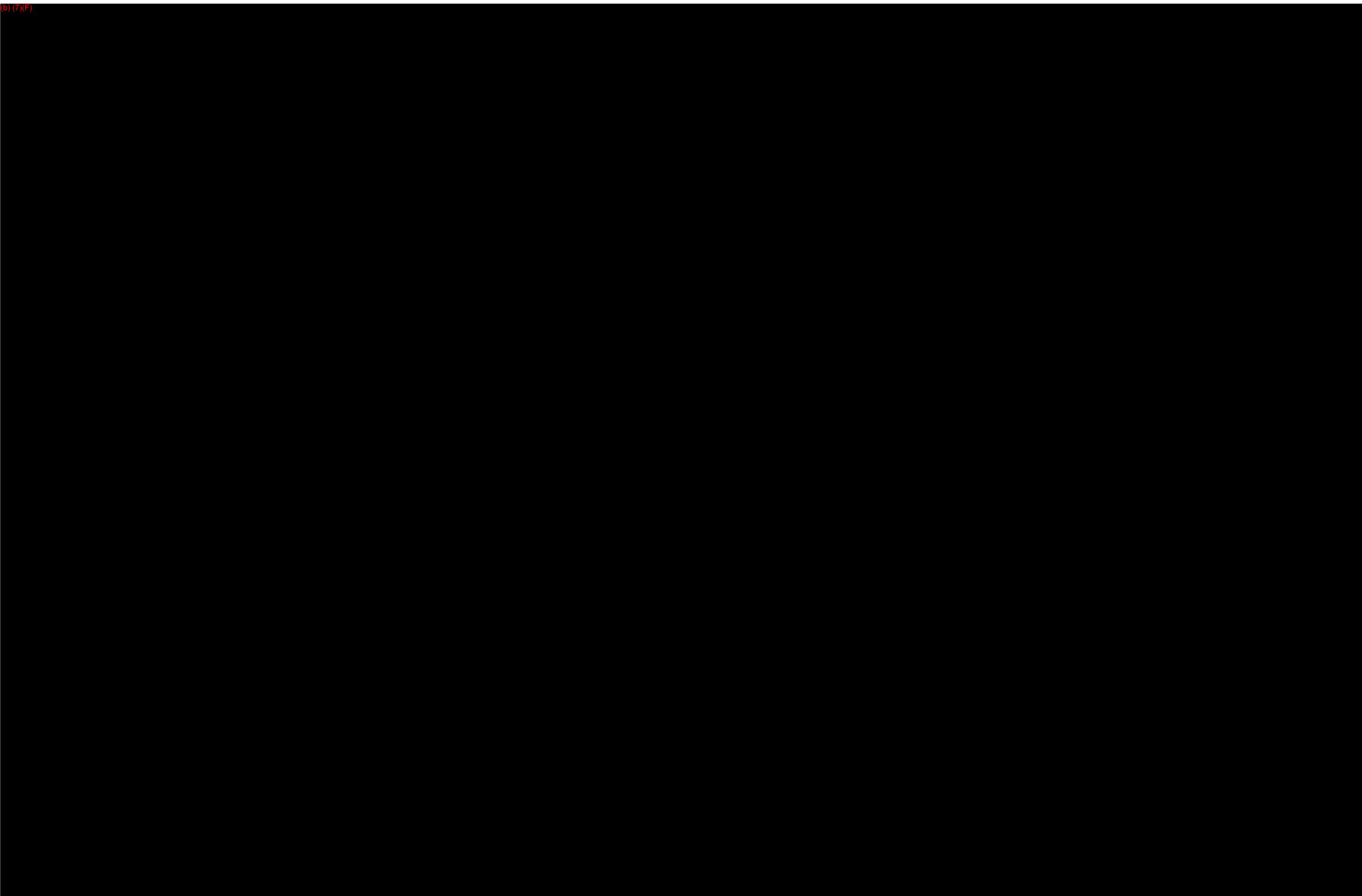
0 2 4 8 12 16 20 Miles

This map has been carefully designed and prepared by Kinder Morgan, Inc. from available information. Kinder Morgan does not warrant the accuracy of this map. Information obtained from this map should be verified independently for any release. Kinder Morgan agrees not to copy, distribute, or otherwise use this map without express consent from Kinder Morgan or its affiliates.

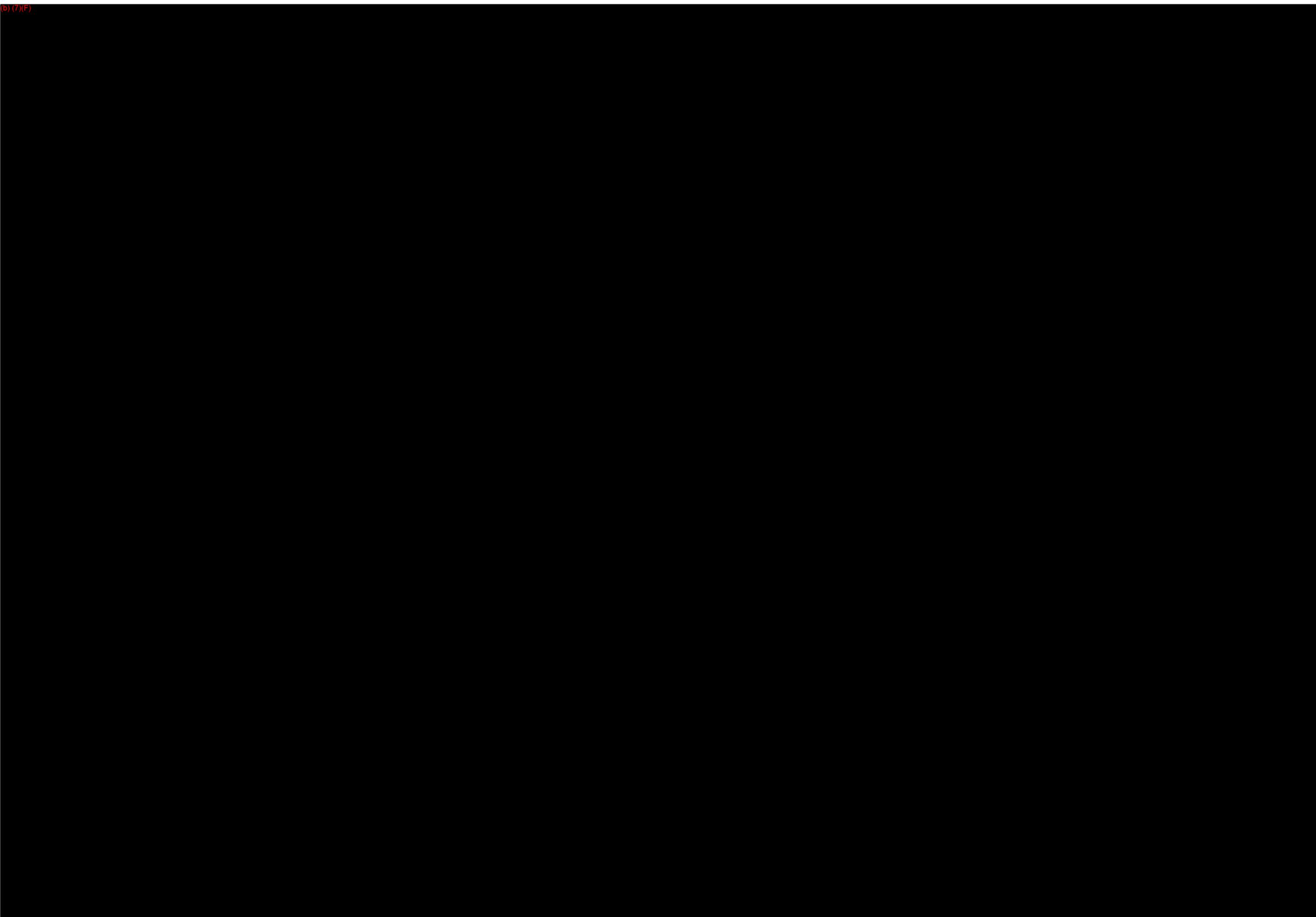
(b) (7)(F)



(b) (7)(F)



(b) (7)(F)



2.0 NOTIFICATION PROCEDURES

2.1 [Internal Notifications](#)

2.2 [External Notifications](#)

Figure 2.1 [Internal Notification Sequence](#)

Figure 2.2 [Internal Notification References](#)

Figure 2.3 [Notification Data Sheet](#)

Figure 2.4 [External Notification Flowchart](#)

Figure 2.5 [External Notification References](#)

2.1 INTERNAL NOTIFICATION

The following internal notifications should be made for each emergency incident to the extent that the incident demands (telephone reference is provided in Figure 2.2). In no event shall notification be delayed because the immediate supervisor is inaccessible. Authorization is given to bypass management levels if necessary to provide timely notification to appropriate management. The typical internal notification responsibilities for each person potentially involved in the initial response are as follows:

Company phone numbers contained herein are considered confidential and are for internal use only.

Detection of Releases

There are several means available to assist personnel to detect and recognize a release. Releases involving unmanned facilities and pipelines may be detected by Supervisory Control and Data Acquisition (SCADA), KMEP personnel or the public.

Estimating Spill Volumes

Initial Estimations

Initial estimations of the amount of released product should be based on visual observation. Use visual observations and the appropriate method described in L O&M 159 Attachment 5 to compute an initial volume estimate. When reporting initial volume, use the word "approximately" when describing the volume, unless the exact volume is known.

Subsequent Estimation

Later in the response, the volume of released product may be determined by utilizing tank gauges and/or pumping rates. For pipeline incidents the volume of released product may be determined by considering the calculation of flow rates in the affected pipeline multiplied by the maximum time to detect the spill and shut off pumps plus an estimated line drain down volume. Company Policy provides that all estimates are reviewed and approved by management before being released.

Notifications

In the event of an emergency, the notification process begins when a KM employee or agent is notified of or becomes aware of a release or threatened release.

A flowchart has been provided to ensure essential internal and external notification procedures are implemented and all levels of management are notified of the situation, as appropriate. **With the exception of notification to 911 and/or local fire/police agencies, Environmental, Health and Safety (EHS-Remediation) and/or Compliance Codes and Standards (CCS) is responsible for making all regulatory required external notifications.** The flowchart is intended to simplify the process by designating what position of employee is required to make certain notifications.

Immediate verbal notification must be made to Houston Control Center (800) 265-6000. After verbal notifications have been made, the Notification Data Sheet (Figure 2.3) must be completed and faxed to the Houston Control Center (713) 369-9394.

For Notification of OSROs

For Notifications of KMEP Oil Spill Removal Organization the designated individual shall refer to Figure 2.5.

Guidelines For Considerations When Initiating Notifications

The following are guidelines to be considered when initiating notifications:

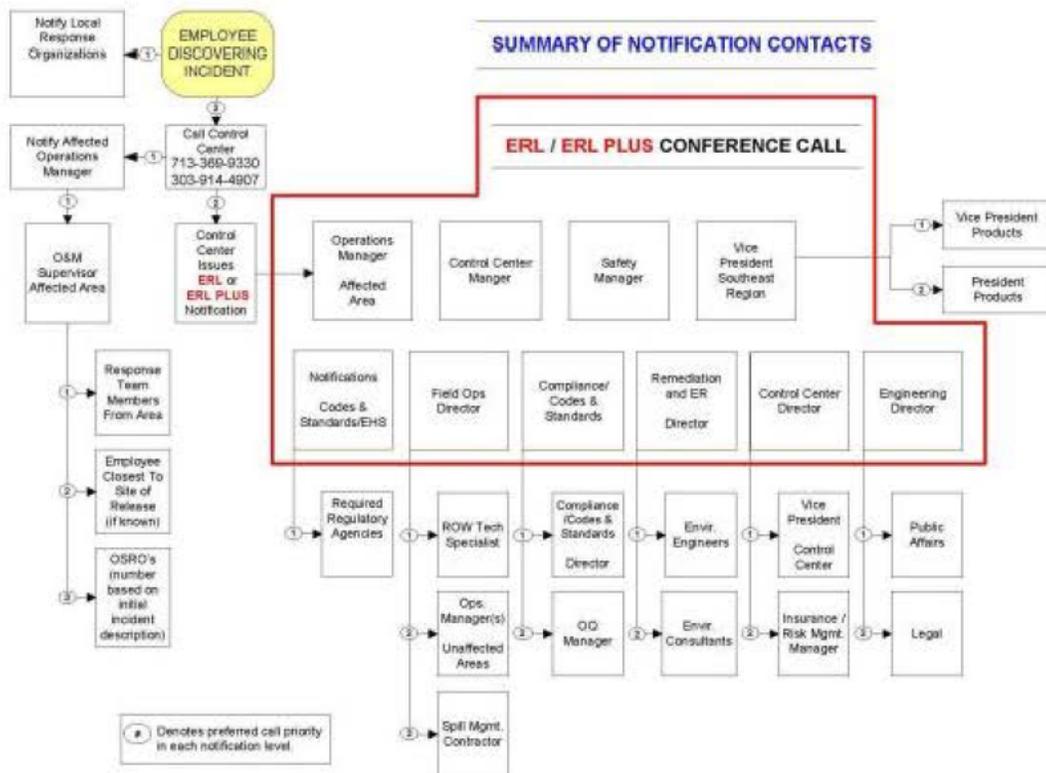
- Do not report information that has not been verified or confirmed, usually by field personnel.
- Do not speculate as to the cause of an incident or make any statements about liability.
- Do not delay notifications because of incomplete information.
- When making notifications, document:
 - Agency notified, including telephone number
 - Date and time of notification
 - Person notified
 - Content of message
 - Incident number, if applicable

Periodic Follow-up Notification during Emergency Response

Periodic follow-up notification must be made within KMEP as well as to federal, state, and local agencies. Responsibility for periodic follow-up notifications remains with each individual as initially assigned within the notification process flowcharts provided in Figure 2.1, unless that responsibility has been transferred based on the magnitude of the response.

KMEP Company contact numbers are provided in Figure 2.2 Internal Notification References.

FIGURE 2.1
INTERNAL NOTIFICATION SEQUENCE



SUMMARY OF NOTIFICATION CONTACTS

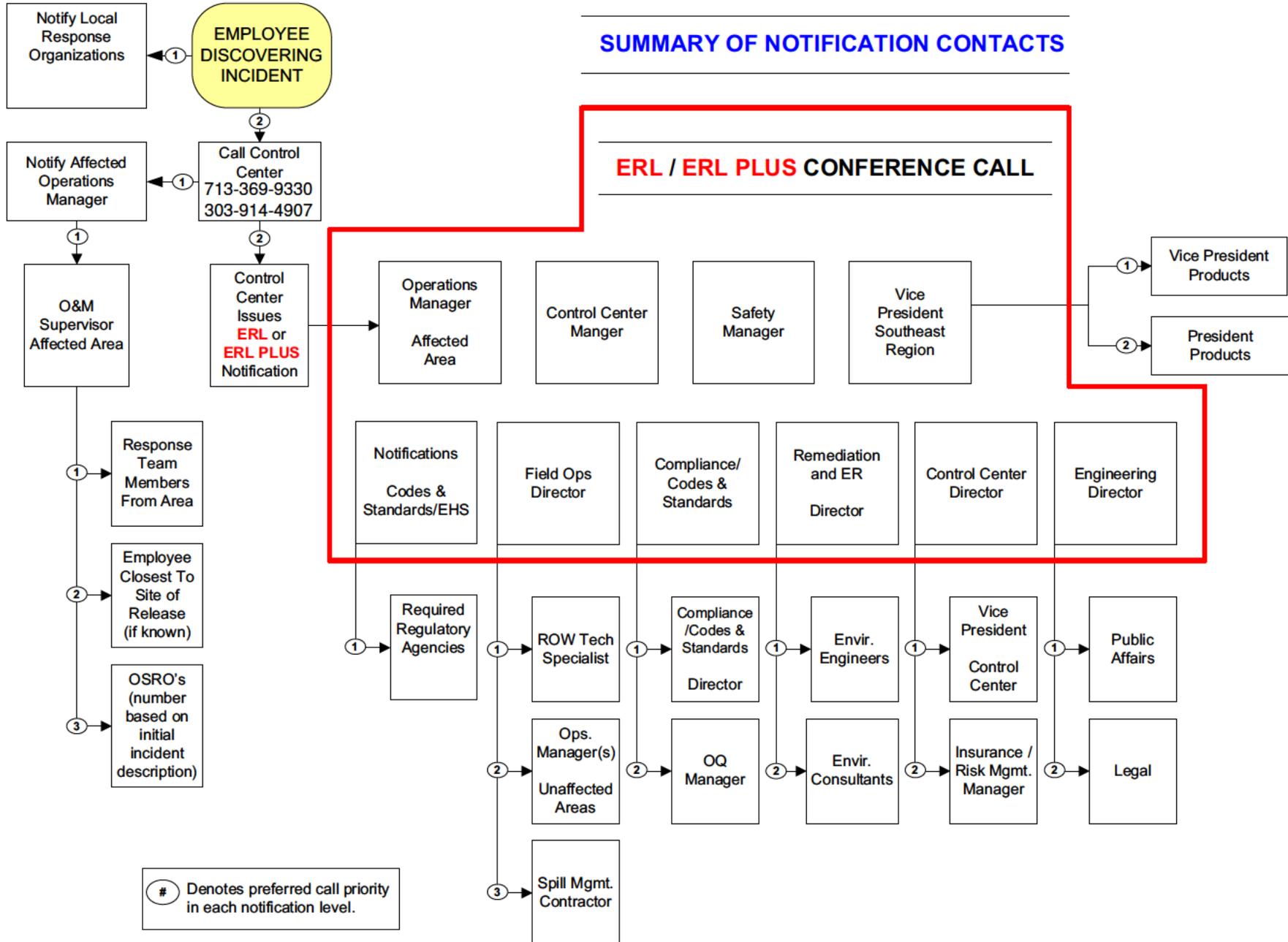


FIGURE 2.2
INTERNAL NOTIFICATION REFERENCES

East Texas Response Zone				
POSITION/TITLE	NAME	OFFICE	HOME	OTHER
AREA: Deer Park District Response Area				
Line Patroller	Erik Eagleton	(281) 479-1234 Ext. 32937	(b) (6)	
Line Patroller	Frank Gibson	(281) 478-2938		(713) 204-8138 CELL
Line Patroller	Edward Wilkerson	(281) 478-2945		(713) 816-4852 CELL
Line Patroller	Pete Hartley	(281) 478-2939		(281) 253-8741 CELL
Line Patroller	Carl Coleman	(281) 478-2947		(281) 229-5908 CELL
Local Responder - Deer Park	Tyler Woerner	(281) 478-2942 Ext. 32910		(713) 898-3202 CELL
Local Responder - Deer Park	Jonathan Varela	(281) 478-2943		(713) 253-6377 CELL
Operations Specialist	Mark Palumbo	(281) 478-2908		(281) 620-9678 CELL
Local Responder - Deer Park	Joe Moore	(281) 478-2933		(713) 248-4733 CELL
Local Responder - Deer Park	Johnny Lowe	(281) 478-2906		(713) 254-8896 CELL
Local Responder - Deer Park	Mark Garcia	(281) 478-2934		(713) 705-7846 CELL
Local Responder - Deer Park	Lawrence Babineaux	(281) 478-2937		(713) 249-4842 CELL
Local Responder - Deer Park	Craig Zeringue	(281) 478-2916		(713) 248-4739 CELL
Line Patroller	Damascus Porter	(281) 478-2940		(281) 910-7112 CELL
DP Supervisor	Freddie Fitzgerald	(281) 478-2902		(713) 248-3917 CELL
Operations Manager	Mike Mugnier	(281) 689-4504		(281) 638-1895 CELL
Director-Operations	Dennis Wamsley	(281) 689-4510		(713) 206-7889 CELL
Operations Manager	James Hay	(281) 689-4520 Alternate (713) 689-3205 ext 44520		(713) 818-9119 CELL
Local Responder - Deer Park	Robert Riley	(281) 478-2946		(281) 726-6180 CELL
Operations Manager	Jonathan Thonsgaard	(979) 532-2359 ext 225		(979) 533-2886 CELL

AREA: Missouri City District Response Area				
Operations Manager	Mike Mugnier	(281) 689-4504		(281) 638-1895 CELL
Director-Operations	Dennis Wamsley	(281) 689-4510		(713) 206-7889 CELL
Operations Manager	James Hay	(281) 689-4520 Alternate (713) 689-3205 ext 44520		(713) 818-9119 CELL
Operations Manager	Jonathan Thonsgaard	(979) 532-2359 ext 225		(979) 533-2886 CELL
Line Patroller	Frank Herrera	(281) 886-1802		(713) 598-1493 CELL
Line Patroller	Mike Menchaca	(713) 369-9553		(713) 204-0192 CELL
Line Patroller	Mike Luna	(281) 886-1802		(713) 539-9646 CELL
Line Patroller	LB Young	(281) 886-1802		(281) 467-6762 CELL
Line Patroller	Rick Contorno	(281) 886-1801		(713) 962-6638 CELL
Line Patroller	John Renken	(281) 886-1817		(281) 433-8157 CELL
Line Patroller	Leonard Kluth	(281) 886-1816		(713) 560-0429 CELL
Local Responder - Missouri City	Randy Moreland	(281) 886-1803		(713) 582-6117 CELL
Local Responder - Missouri City	Antonio Salinas	(713) 369-9508		(713) 201-6579 CELL
Local Responder - Missouri City	Jimmy Rivas Sr.	(713) 369-9508		(281) 605-9618 CELL
Local Responder - Missouri City	Doug Hinson II	(713) 369-9508		(713) 205-2306 CELL
Local Responder - Missouri City	Andrew Adams	(281) 886-1800		(979) 533-3768 CELL
AREA: Victoria District Response Area				
Director-Operations	Dennis Wamsley	(281) 689-4510		(713) 206-7889 CELL
Operations Manager	James Hay	(281) 689-4520 Alternate (713) 689-3205 ext 44520		(713) 818-9119 CELL
Operations Manager	Jonathan Thonsgaard	(979) 532-2359 ext 225		(979) 533-2886 CELL
E & C Tech	Mario Araiza Jr.	(281) 689-4560		(713) 806-7436 CELL
E & C Tech	Nathan Hanselka	(316) 576-4404 Ext. 226		(361) 894-2059 CELL
Operations Manager	Tony Palacios	(361) 998-3022		(361) 438-3411 CELL

Local Responder - Victoria	Kyle Neuvar	(361) 576-4404 ext 336		(361) 935-2377 CELL
Local Responder - Victoria	Bill Thibodeaux	(361) 526-4954		(361) 676-4516 CELL
Ops Supervisor - Victoria	Daniel Chumchal	(361) 576-4404 ext 222		(361) 935-1190 CELL
AREA: Wharton District Response Area				
Director-Operations	Dennis Wamsley	(281) 689-4510		(713) 206-7889 CELL
Operations Manager	James Hay	(281) 689-4520 Alternate (713) 689-3205 ext 44520		(713) 818-9119 CELL
Operations Manager	Jonathan Thonsgaard	(979) 532-2359 ext 225		(979) 533-2886 CELL
Line Patroller	Josh Haynie	(979) 532-2359		(979) 943-8351 CELL
Local Responder - Wharton	Gary Ryman	(979) 532-2359 ext 335		(979) 533-1179 CELL
Local Responder - Wharton	Jock Powers	(979) 532-2359 ext 227		(361) 443-0031 CELL
Local Responder - Wharton	Arthur Zahn Jr.	(979) 532-2359 ext 339		(979) 533-0509 CELL
Local Responder - Wharton	Dale Staff	(979) 532-2359 ext 331		(979) 531-9207 CELL
Local Responder - Wharton	Louis Srubar	(979) 532-2359 ext 336		(979) 533-3767 CELL
Local Responder - Wharton	Johnny Kunkel	(979) 532-2359 ext 222		(979) 533-0401 CELL

CORPORATE CRISIS SUPPORT PERSONNEL INTERNAL NOTIFICATIONS				
POSITION/TITLE	NAME	OFFICE	HOME	OTHER
Operations	Kevin Philbrick	(307) 232-4420	(b) (7)(F)	(307) 262-1633 CELL
Business Management	Mark Kissel	(719) 520-4443		(303) 396-9308 CELL
Business Management	Randy Holstlaw	(303) 914-4517		(303) 907-2491 CELL
DOT / Pipeline Safety	Bruce Hancock	(303) 914-7959		(303) 358-2178 CELL
Alt. Houston Media Relations	Joe Hollier	(713) 369-9176		(713) 823-5419 CELL
Alt. Webmaster Public Information	Brandon Appelt	(713) 369-9008		
Alt. Legal	Christie Billings	(713) 369-9413		(713) 882-6308 CELL
Alt. EPA / Environmental	John Greer	(713) 369-9193		(713) 829-0209 CELL
Alt. Engineering	Bruce Olsen	(303) 914-7796		(303) 681-6509 CELL
Alt. Procurement	Lance Bradford	(303) 914-7801		(303) 726-5456 CELL
Alt. Procurement	David Nelson	(713) 369-8513		(832) 326-7281 CELL
Director-Operations	Dennis Wamsley	(281) 689-4510		(713) 206-7889 CELL
Procurement	Corey Staab	(713) 369-9676		(303) 204-1526 CELL
Business Management	Dave Devine Jr.	(713) 369-9310		(713) 817-6444 CELL

CORPORATE CRISIS SUPPORT PERSONNEL INTERNAL NOTIFICATIONS (C)				
POSITION/TITLE	NAME	OFFICE	(b) (6)	OTHER
Business Management	James Brett	(630) 725-3040		(630) 437-0103 CELL
Business Management	Rene Jagot	(713) 369-9242		(713) 819-4188 CELL
Business Management	Duane Kokinda	(713) 369-9409		(713) 252-4911 CELL
Houston Control Center	Ray Miller	(713) 369-9330		(713) 206-8338 CELL
Houston Control Center	Danny Ivy	(713) 369-9311		(713) 829-2761 CELL
Lakewood Control Center	Eddy Thomas	(303) 914-4907		(303) 242-4347 CELL
Lakewood Control Center	Stefan Evanoff	(303) 914-7828		(303) 941-4664 CELL
Business Management	David Kinder	(713) 369-9469		(713) 829-3400 CELL
Business Management	Peter Barbour	(303) 763-3248		(303) 489-3196 CELL
DOT / Pipeline Safety	Toby Fore	(713) 369-9413		(713) 899-3319 CELL
EPA / Environmental	Tom Bach	(303) 914-7842		(303) 910-8235 CELL
Engineering	Jorge Torres	(713) 369-9232		(713) 824-8962 CELL
Operations	Ed Donohoe	(308) 865-0720		(308) 390-1069 CELL
Operations	Dwayne Burton	(713) 369-9356		(281) 414-2137 CELL

CORPORATE CRISIS SUPPORT PERSONNEL INTERNAL NOTIFICATIONS (Cont'd)				
POSITION/TITLE	NAME	OFFICE	HOME	OTHER
Operations	Allen Fore	(630) 725-3044	(b) (6)	(815) 988-2873 CELL
Operations	Joe McLaughlin	(713) 369-9847		(630) 269-3006 CELL
Operations	Bob Montgomery	(806) 379-2041 Ext: 225		(806) 679-0320 CELL
Liaison	Yvette Abraham	(713) 369-9513		(713) 203-8361 CELL
Incident Commander	Ron McClain	(713) 369-9152		(832) 418-1470 CELL
Alt. Incident Commander/Operations	James Holland	(713) 369-9428		(714) 231-0126 CELL
Coast Guard Liaison	Chuck Mathis	(713) 369-8530		(832) 405-1701 CELL
Liaison	Buzz Fant	(713) 369-9454		(713) 724-7533 CELL
Liaison	Jaime Hernandez	(713) 369-9443		(281) 384-5609 CELL
Legal	Jessica Toll	(303) 763-3313		(303) 668-7805 CELL
Alt. Legal	Nancy Van Burgel	(303) 914-4634		(303) 910-9356 CELL
Human Resources Planning	Roger Mosby	(713) 369-9466		(713) 898-2558 CELL
Alt. Human Resources Planning	Jim Street	(713) 369-9464		(713) 907-0960 CELL
MidCon Planning	Michelle Merriman	(713) 369-9134		(713) 702-7750 CELL

CORPORATE CRISIS SUPPORT PERSONNEL INTERNAL NOTIFICATIONS (Cont'd)				
POSITION/TITLE	NAME	OFFICE	HOME	OTHER
Planning	Brian Williams	(770) 751-4248	(b) (6)	(404) 386-2880 CELL
MidCon Planning	Bob Cote	(713) 369-8801		(713) 805-5710 CELL
Investor Relations Public Info	Kim Dang	(713) 369-9470		(713) 201-3007 CELL
Investor Relations Public Info	Mindy Mills Thornock	(713) 369-9449		
Houston Media Relations	Emily Mir	(713) 369-8060		(713) 823-6565 CELL
Houston Media Relations	Larry Pierce	(713) 369-9407		(281) 330-2981 CELL
Webmaster Public Information	Mike Edwards	(713) 369-8012		(832) 373-8624 CELL
Alt. Webmaster Public Information	Azad Haq	(713) 369-9007		(713) 249-1105 CELL
Alt. Webmaster Public Information	Ken Thomason	(713) 369-9028		(281) 415-8675 CELL
Risk Management Finance	Steve Hawes	(303) 763-3457		(303) 919-2528 CELL
Alt. Risk Management Finance	Bob Dillard	(713) 369-9492		(713) 502-9243 CELL
Houston/Alpharetta Logistics	Linda Warner	(713) 369-9229		(281) 830-4131 CELL
Alt. Houston Logistics	Orlando Munive Jr.	(713) 369-9225		(281) 830-4134 CELL
Lakewood Logistics	Robert Scott	(303) 763-3410		(303) 356-4497 CELL

CORPORATE CRISIS SUPPORT PERSONNEL INTERNAL NOTIFICATIONS (Cont'd)				
POSITION/TITLE	NAME	OFFICE	HOME	OTHER
Alt. Lakewood Logistics	Nancy Michelson	(303) 914-4593	(b) (6)	(303) 551-3943 CELL
Houston IT	Hank Neumann Jr.	(713) 369-9030		(713) 206-1384 CELL
Alt. Houston IT	Brian Broyles	(713) 369-9012		(713) 819-7074 CELL
Alt. Houston IT	Paul Davis	(713) 369-8946		(713) 299-2669 CELL
Procurement	Lisa Shorb	(713) 369-9677		
Alt. Procurement	Kathleen Logan	(303) 914-4770		(303) 877-6304 CELL
Alt. Procurement	Judy Marsh	(770) 751-4237		(770) 842-5434 CELL
Alt. Procurement	Travel Desk	(800) 801-3445		

2.2 EXTERNAL NOTIFICATIONS

External notifications are those made to entities outside of the Company including Federal, State and local regulatory agencies, as well as railroad and utility companies. These notifications include both verbal and written requirements.

NOTE: Refer to Figure 2.5 for any additional State written reporting requirements.

FIGURE 2.3

NOTIFICATION DATA SHEET														
Date of Incident: _____		Time of Incident: _____												
INCIDENT DESCRIPTION														
Reporter's Full Name: _____		Position: _____												
Day Phone Number: _____		Evening Phone Number: _____												
Company: Kinder Morgan Energy Partners, L.P.		Organization Type: _____												
Facility Address: 500 Dallas Street, Suite 1000 Houston, Texas 77002		Owner's Address: 500 Dallas Street, Suite 1000 Houston, Texas 77002												
Facility Latitude: _____		Facility Longitude: _____												
Incident Address/Location: _____														
(if not at Facility): _____														
On-Scene Weather Conditions: _____														
Responsible Party's Name: _____		Phone Number: _____												
Responsible Party's Address: _____														
Source and/or cause of discharge (Description): _____														
Nearest City: _____														
County/Parish: _____		State: _____	Zip Code: _____											
Section: _____	Township: _____	Range: _____	Borough: _____											
Distance from City: _____		Unit of Measure: _____	Direction from City: _____											
Container Type: _____		Container Storage Capacity: _____	Unit of Measure: _____											
Facility Oil Storage Capacity: _____		Unit of Measure: _____												
Were Materials Discharged? (Y / N) Confidential? (Y / N)														
<table border="1"> <thead> <tr> <th>CHRIS Code</th> <th>Total Quantity Released</th> <th>Water Impact (YES or NO)</th> <th>Quantity into Water</th> <th>Unit of Measure</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>					CHRIS Code	Total Quantity Released	Water Impact (YES or NO)	Quantity into Water	Unit of Measure					
CHRIS Code	Total Quantity Released	Water Impact (YES or NO)	Quantity into Water	Unit of Measure										
RESPONSE ACTION(S)														
Action(s) taken to Correct, Control, or Mitigate Incident: _____														
Number of Injuries: _____		Number of Deaths: _____	Evacuation(s): (Y / N)	Number Evacuated: _____										
Was there any damage? (Y / N) Medium Affected: _____														
Description: _____														
More information about impacted medium: _____														
CALLER NOTIFICATIONS														
National Response Center (NRC):		1-800-424-8802												
Additional Notifications (Circle all applicable): USCG EPA State OSHA Other _____														
Describe: _____														
NRC Incident Assigned No.: _____														
ADDITIONAL INFORMATION														
Any information about the incident not recorded elsewhere in this report: _____														
Meeting Federal Obligations to Report (Y / N)		Date Called _____												
Calling for Responsible Party? (Y / N)		Time Called _____												
NOTE: DO NOT DELAY NOTIFICATION PENDING COLLECTION OF ALL INFORMATION.														

FIGURE 2.4
EXTERNAL NOTIFICATION FLOWCHART

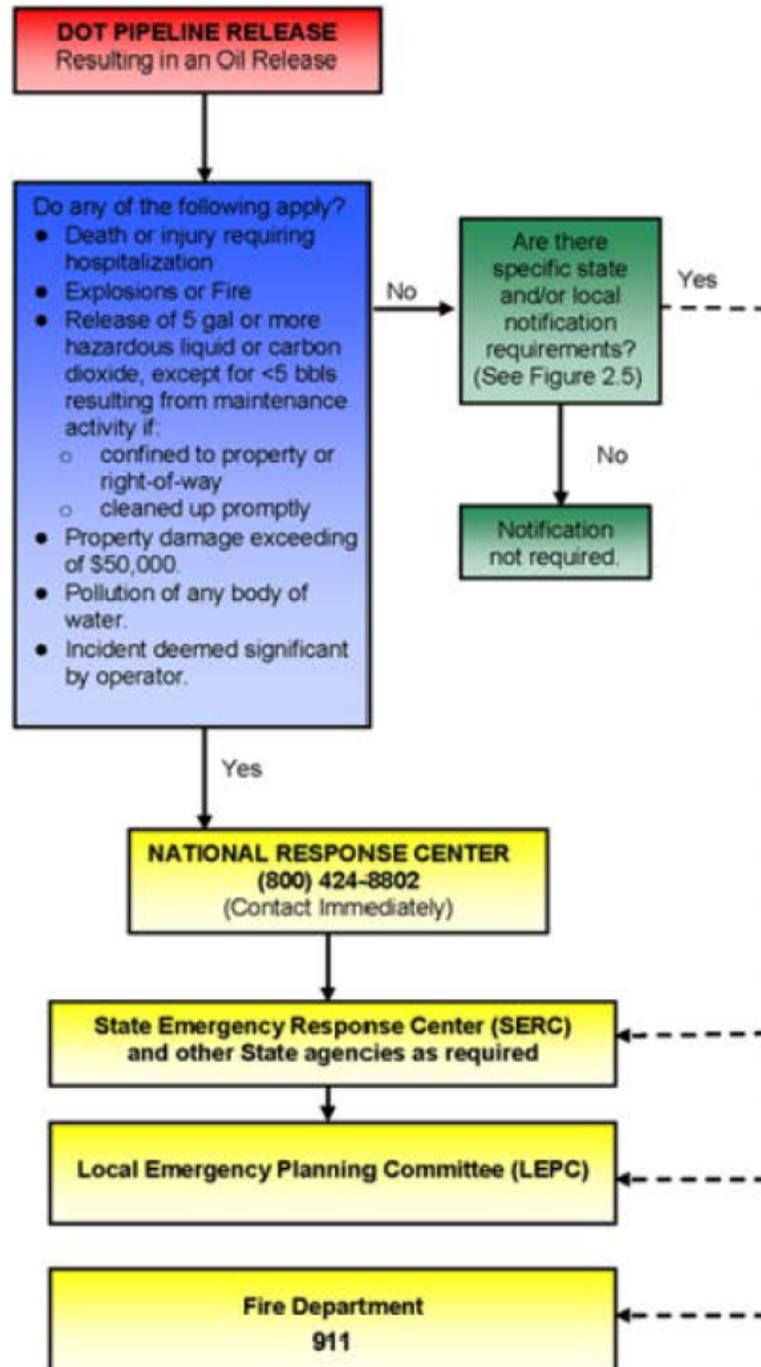


FIGURE 2.5
EXTERNAL NOTIFICATION REFERENCES

Required Notifications	
National Response Center (NRC)	
c/o United States Coast Guard (CG-5335) - Stop 7581, 2100 2nd Street, SW Washington, District Of Columbia 20593-0001	(800) 424-8802 (202) 267-2675
REPORTING REQUIREMENTS	
TYPE: Any discharge or sighting of oil on navigable waters.	
VERBAL: Immediate notification required (within 2 hours).	
WRITTEN: If an RQ limit is reached, refer to state requirements for written report requirements.	
NOTE: A call to the NRC must also be made for spills or releases of hazardous substances that meet or exceed their RQ.	
<i>* Additional reporting information may be contained in the Document Library under Other Documents.</i>	
Department of Transportation for DOT Jurisdiction Office of Pipeline Safety	
Pipeline and Hazardous Materials Safety Administration, Room 2103, 400 Seventh Street SW Washington, District Of Columbia 20590	(800) 424-8802 (202) 267-2675 NRC Direct (202) 366-4433 PHMSA Switchboard
REPORTING REQUIREMENTS	
TYPE: In addition to the reporting of accidents to the NRC, a written accident report may be required for incidents .	
VERBAL: Call to the NRC meets the required verbal notification under DOT reporting requirement.	
WRITTEN: As soon as practicable, an accident meeting any of the requisite criteria must be reported on PHMSA Form 7000-1.	
NOTE:	
<i>* Additional reporting information may be contained in the Document Library under Other Documents.</i>	
Texas Emergency Response Center (TERC)	
Austin, Texas	(800) 832-8224
REPORTING REQUIREMENTS	
TYPE: All spills of products into water and/or discharges onto land that meet or exceed state RQs.	
VERBAL: Immediately	
WRITTEN: As the agency may request depending on circumstances.	
NOTE: http://www.tceq.texas.gov/response/spill_rq.html	
<i>* Additional reporting information may be contained in the Document Library under Other Documents.</i>	

TRRC (De Witt, Victoria, Jackson Counties)

10320 IH 37 Corpus Christi, Texas 78410	(361) 242-3117
--	----------------

REPORTING REQUIREMENTS

TYPE: In the case of a fire, leak, spill, or break causing loss of over five (5) barrels. For pipeline incidents reportable to the NRC, notify the TRRC Pipeline Safety Section. District Office by telephon

VERBAL: Immediate notification to the District Office.

WRITTEN: File Form H-8 (attached) in duplicate when appropriate measures have been taken, within 30 days following the date of the incident.

NOTE: For Written Reports: Oil and Gas Division, 1701 N. Congress, P.O. Box 12967, Capital Station, Austin, TX 78711-2967

** Additional reporting information may be contained in the Document Library under Other Documents.*

TRRC (Wharton, Fort Bend, Brazoria, Harris)

1706 Seamist Drive, Suite 501 Houston, Texas 77008-3135	(713) 869-8425
--	----------------

REPORTING REQUIREMENTS

TYPE: In the case of a fire, leak, spill, or break causing loss of over five (5) barrels. For pipeline incidents reportable to the NRC, notify the TRRC Pipeline Safety Section. District Office by telephon

VERBAL: Immediate notification to the District Office.

WRITTEN: File Form H-8 (attached) in duplicate when appropriate measures have been taken, within 30 days following the date of the incident.

NOTE: For Written Reports: Oil and Gas Division, 1701 N. Congress, P.O. Box 12967, Capital Station, Austin, TX 78711-2967

** Additional reporting information may be contained in the Document Library under Other Documents.*

US Dept. of the Interior, Bureau of Reclamation

Great Plains Regional Office, P.O. Box 36900 Billings, Montana 59107-6900	(406) 247-7600
--	----------------

REPORTING REQUIREMENTS

TYPE: Notification must be made to the Bureau of Reclamation for releases impacting reservoirs.

VERBAL: Immediate

WRITTEN: As requested by agency.

NOTE: N/A

** Additional reporting information may be contained in the Document Library under Other Documents.*

Occupational Safety & Health Administration (OSHA)

200 Constitution Avenue Washington, District Of Columbia 20210	(800) 321-6742
---	----------------

REPORTING REQUIREMENTS

TYPE: Fatality from a work related incident or the inpatient hospitalization of three (3) or more employees as a result of a work related incident.

VERBAL: Immediately.

WRITTEN: As requested by the Agency.

NOTE: N/A

** Additional reporting information may be contained in the Document Library under Other Documents.*

Harris County / Southeast Regional, TX LEPC

PO Box 1148 Pasadena, Texas 77501	(713) 475-7088 (713) 477-9364
--------------------------------------	----------------------------------

REPORTING REQUIREMENTS

TYPE: Any spill which escapes the boundary of the Facility or exceeds an RQ.

VERBAL: Immediately.

WRITTEN: As requested by the agency.

NOTE: N/A

** Additional reporting information may be contained in the Document Library under Other Documents.*

Brazoria County LEPC

111 East Locust Street Angleton, Texas 77515	(979) 849-2441
---	----------------

REPORTING REQUIREMENTS

TYPE: Any spill or discharge that requires notification to the NRC.

VERBAL: Immediately

WRITTEN: As the agency may request depending on circumstances.

NOTE: N/A

** Additional reporting information may be contained in the Document Library under Other Documents.*

De Witt County LEPC	
208 E. Liveoak Cuero, Texas 77954	(361) 275-5734
REPORTING REQUIREMENTS	
TYPE:	Any spill or discharge that requires notification to the NRC.
VERBAL:	Immediately
WRITTEN:	As the agency may request depending on circumstances.
NOTE:	N/A
<i>* Additional reporting information may be contained in the Document Library under Other Documents.</i>	

Fort Bend County LEPC	
307 Fort Street Richmond, Texas 77469	(281) 342-6185
REPORTING REQUIREMENTS	
TYPE:	Any spill or discharge that requires notification to the NRC.
VERBAL:	Immediately
WRITTEN:	As the agency may request depending on circumstances.
NOTE:	N/A
<i>* Additional reporting information may be contained in the Document Library under Other Documents.</i>	

Jackson County LEPC	
115 West Main, Room 104 Edna, Texas 77957	(361) 782-3398 / (361) 782-5247
REPORTING REQUIREMENTS	
TYPE:	Any spill or discharge that requires notification to the NRC.
VERBAL:	Immediately
WRITTEN:	As the agency may request depending on circumstances.
NOTE:	N/A
<i>* Additional reporting information may be contained in the Document Library under Other Documents.</i>	

Victoria County LEPC	
205 N. Bridge St., Suite B101 Victoria, Texas 77901	(361) 580-5770
REPORTING REQUIREMENTS	
TYPE:	Any spill or discharge that requires notification to the NRC.
VERBAL:	Immediately
WRITTEN:	As the agency may request depending on circumstances.
NOTE:	N/A
<i>* Additional reporting information may be contained in the Document Library under Other Documents.</i>	

Wharton County LEPC	
315 E. Elm Wharton, Texas 77488	(979) 532-1123
REPORTING REQUIREMENTS	
TYPE:	Any spill or discharge that requires notification to the NRC.
VERBAL:	Immediately
WRITTEN:	As the agency may request depending on circumstances.
NOTE:	N/A
<i>* Additional reporting information may be contained in the Document Library under Other Documents.</i>	

USCG CLASSIFIED OIL SPILL REMOVAL ORGANIZATIONS (OSRO)		
COMPANY	LOCATION	TELEPHONE
National Response Corporation	Houston, Texas	(800) 899-4672 / (281) 606-4848

PSAP		
NAME	LOCATION	TELEPHONE
Brazoria County Sheriff's Department	Brazoria, Texas	(979) 864-2392
De Witt County Sheriff's Office	De Witt, Texas	(361) 275-5734
El Campo Police Department	El Campo, Texas	(979) 543-5311
Fort Bend Sheriff's Department	Fort Bend, Texas	(281) 364-4665
Harris County Sheriff's Office	Harris, Texas	(713) 755-2208
Jackson County Sheriff's Office	Jackson, Texas	(361) 782-3541
Victoria County Police Department	Victoria, Texas	(361) 573-3221
Wharton County Sheriff's Office	Wharton, Texas	(979) 532-1550
Wharton Police Department	Wharton, Texas	(979) 532-3133

ADDITIONAL RESPONSE RESOURCES		
COMPANY	LOCATION	TELEPHONE
Gulf Coast Wildlife Rescue	Angleton, Texas	(979) 849-0184
O'Brien's Response Management Inc.	Slidell, Louisiana	(985) 781-0804
Texas Parks and Wildlife	Houston, Texas	(281) 456-7029
Wildlife Rescue & Rehabilitation	Kendalia, Texas	(830) 336-2725

3.0 RESPONSE ACTIONS

- 3.1 [Initial Response Actions](#)
- 3.2 [Documentation of Initial Response Actions](#)
- 3.3 [Oil Containment, Recovery and Disposal/Waste Management](#)
- 3.4 [Storage/Disposal](#)
- 3.5 [Sampling and Waste Analysis Procedures](#)
- 3.6 [Safety Awareness](#)
- 3.7 [Emergency Medical Treatment and First Aid](#)

Figure 3.1 [Specific Incident Response Checklist](#)
[Initial Response](#)
[Line Break Or Leak](#)
[Fire](#)
[Tornadoes](#)
(b) (7)(F)
[Medical Emergency](#)
[Severe Thunderstorm/Flash Flooding](#)

Figure 3.2 [Product Specific Response Considerations](#)

3.1 INITIAL RESPONSE ACTIONS

Initial response actions are those taken by local personnel immediately upon becoming aware of a discharge or emergency incident, before the Local Response Team (described in Section 4.0) is formed and functioning. Timely implementation of these initial steps is of the utmost importance because they can greatly affect the overall response operation.

The pages that follow discuss initial response actions for a variety of emergencies that have the possibility of occurring. These emergencies are discussed in the order listed below:

- o Initial Response
- o Line Break or Leak
- o Fire
- o Tornadoes
- o (b) (7)(F)
- o Medical Emergency
- o Severe Thunderstorm/Flash Flooding

It is important to note that **these actions are intended only as guidelines**. The appropriate response to a particular incident may vary depending on the nature and severity of the incident and on other factors that are not readily addressed. Note, that **without exception, employees and public safety is first priority**.

The first Company person on scene will function as the Incident Commander (IC) until relieved by an authorized supervisor who will assume the IC position. Transfer of command will take place as more senior management respond to the incident. For response operations within the control of the Local Response Team, the role of IC will typically be assumed and retained by area management.

The person functioning as **Incident Commander** during the initial response period **has the authority to take the steps necessary to control the situation and must not be constrained by these general guidelines**.

INITIAL RESPONSE ACTIONS - SUMMARY**PERSONNEL AND PUBLIC SAFETY IS FIRST PRIORITY****CONTROL**

- Eliminate sources of ignition
- Isolate the source of the discharge, minimize further flow

NOTIFY

- Make internal and external notifications
- Activate local Company personnel as necessary
- Activate response contractors and other external resources as necessary

CONTAIN

- Begin spill mitigation and response activities
- Monitor and control the containment and clean-up effort
- Protect the public and environmental sensitive areas

In addition to the potential emergency events outlined in this Section, the Company has identified several "abnormal operations" that could occur at the pipeline facilities. The Company has defined the events and established procedures to identify, eliminate or mitigate the threat of a worst case discharge due to these events. In compliance with 49 CFR 195.402(d), these procedures are defined in the Company's Operations Manual.

First Company Person Notified/On Scene

- Follow the appropriate "**Specific Incident Response Checklist**" in Figure 3.1 and "**Product Specific Response Considerations**" in Figure 3.2.
- Notify **Facility Management** of the incident.
- Utilize local emergency services as necessary (police, fire, medical).

Facility Management

- **Evaluate the Severity**, Potential Impact, Safety Concerns, and Response Requirements based on the initial data provided by the first person on scene.
- Assume the role of **Incident Commander**.
- **Confirm safety** aspects at site, including need for personal protective equipment, sources of ignition, and potential need for evacuation.
- Activate the **primary response contractors**, as the situation demands.
- Coordinate/perform **activation of additional spill response contractors**, as the situation demands (telephone reference is provided in Figure 2.5).
- Perform notifications as per Figure 2.1, including Spill Management Team activation, as necessary.
- Coordinate/perform **regulatory agency notification**, as the situation demands (notification procedures and telephone references are provided in Figures 2.4 and 2.5 respectively).
- Proceed to spill site and **coordinate response and clean-up operations**.
- Direct containment, dispersion, and/or clean-up operations in accordance with the "**Product Specific Response Considerations**" provided in Figure 3.2.

Local Response Team

- Assigned personnel will immediately respond to a discharge from the Facility, as the situation demands.
- Perform response/clean-up operations as directed or coordinated by the Incident Commander.
- Assist as directed at the spill site.

FIGURE 3.1

SPECIFIC INCIDENT RESPONSE CHECKLIST

INITIAL RESPONSE

- Take appropriate personal protective measures.
- Call for medical assistance if an injury has occurred.
- Restrict access to the spill site and adjacent area as the situation demands. Take additional steps necessary to minimize any threat to health and safety.
- Verify the type of product and quantity released.
- Advise personnel in the area of any potential threat and/or initiate evacuation procedures.
- Use testing and sampling equipment to determine potential safety hazards, as the situation demands.
- Identify/Isolate the source and minimize the loss of product.
- Take necessary fire response actions.
- Eliminate possible sources of ignition in the near vicinity of the spill.
- Notify Facility Management of the incident.

All personnel are reminded that outsiders other than emergency services will not be allowed in the Facility during the time of an emergency, and that no statements will be issued to the media or other interested parties except by designated Facility Management. Be courteous with media representatives and direct them to the designated spokesman.

LINE BREAK OR LEAK, SPECIFIC RESPONSE (Including Piping Rupture/ Leak Valve Rupture/Leak and Manifold Failure)

- Notify Management (any level) with the following
 - Location, volume, source and material released
 - Note time found
 - Management to notify Incident Commander and EH&S Department personnel
 - Pull MSDS for product and have it available
 - Initiate internal and external notifications (Incident Commander will ensure agency notifications)
 - Use alternate telephone # for call-backs and out-going calls
 - Begin an incident log with timeline
- Begin initial response
 - Evacuate and secure immediate area
 - Account for contractors and Company personnel
 - Approach from upwind direction
 - Eliminate any potential ignition sources
 - Initiate air monitoring (i.e., O₂, LEL, H₂S, chemical, heat stress, etc.) and establish hot warm and cold zones
 - First responder to stop source and contain (if possible) in a safe manner
- Local Response Team assemble at Command Post for briefing
 - Fill positions in Incident Management System (IMS)(if required based on size and type of incident)
 - Determine PPE requirements indicated on MSDS or PPE matrix
 - Dispatch equipment needed to contain and start clean-up (use of portable or fixed monitors, vacuum trucks, fire truck, boat, absorbents, non-sparking shovels, etc.)
- Continue initial response/ assess situation
 - Ensure that pumps/ electrical equipment have been shut down
 - Include vessel, ships and docks if spill is at dock or on waterfront
 - Control and direct traffic flow (establish and staff staging area if required)
 - Notify any affected neighboring facilities
 - Consider fence line air monitoring if release will affect property off-site
- Establish objectives and priorities based on this assessment
 - Contain to keep from impacting additional areas (closing dike drains, outfalls, etc.)
 - Maintaining foam blanket will be necessary to suppress vapors if material is flammable and posing a threat of a fire or high LEL levels
 - Vacuum up or absorb free product (all equipment used must be grounded)
 - Stop source safely if first responder could not (due to vapor exposures or risk of fire)

FIRES (MINOR, MAJOR, EXPLOSION) SPECIFIC RESPONSE

Individual Discovering the Fire (All Employees)

In the event that a fire response is required by the Local Response Team, the following actions should be taken in order:

NOTE: KM personnel do not have fire brigade training and are only permitted to use fire extinguishers in small incipient stage fires. If the situation warrants, and your personal safety is ensured, initial efforts to extinguish small incipient stage fires may prove to be the best action. In these situations, if you believe that your personal safety is not at risk, and you can take interim measures to mitigate a situation while the Emergency Responders are deploying- do so.

- Notify Management (any level).
 - Acknowledge information and switch all emergency communications to an alternate channel.
 - Have the Local Response Team members secure all operations on which they are working before responding.
 - Note time of call.
 - Contact the local fire department (911).
 - Have staff member check weather for any changes in wind direction.
- Account for contractors and Company personnel.
- Incident Commander (IC) mobilize to scene.
 - Check wind direction - **approach from upwind**.
 - Confirm and conduct a preliminary assessment of the situation upon arrival at the scene.
 - Evaluate scene for potential hazards (i.e., overhead power lines, obstacles wind direction).
 - Determine what product is involved and have MSDS pulled and reviewed for PPE and firefighting instructions.
- Assemble the Local Response Team at the Command Post.
 - Fill positions (as required) in the Incident Management System.
 - If not already present, notify IC, Safety Officer, and Operations Chief.
 - Initiate internal and external notifications in accordance with the fire and other emergency response plans.
- Eliminate any sources of ignition in the immediate area.
 - Shut down pumps and any movement into/ out of area.
 - Shut down contractor activity.
 - Stop traffic flow into and out of area.
 - Adjacent tank pumps and motors.
 - Be aware of static electricity.
- Assist the fire department in establishing objectives and priorities based on this assessment.
 - Availability of water or foam resources and locations of monitors and hydrants.
 - Overhead power lines. DO NOT flow water near them.
 - Water will quickly fill the dike area and the need to evaluate the water usage and determine whether or not to open/close the internal and external dike drains.
 - Determine off site flowpath and potential impact of firefighting water and product.

SEVERE THUNDERSTORM (Flash Flooding) SPECIFIC RESPONSE***Natural Disaster (Tornado and Severe Storms)***

Although many disasters cannot be prevented or predicted, preparation can significantly reduce losses. In the event of a severe weather condition or a natural disaster, the Area Manager or an Operator will be the Emergency Coordinator.

- **Be Aware of Changing Weather Conditions**
 1. Tornado watch - conditions are right for the formation of a tornado.
 2. Tornado warning - a tornado has been sighted but is not in the area at this time.
 3. Tornado alert - a tornado has been sighted in the immediate area take cover immediately.
- **If Severe Weather Conditions Threaten**
 1. Alert Facility personnel of condition.
 2. If time permits, all personnel should assemble at an inside room in the Facility for shelter.
 3. If time does not permit, seek shelter in low level area away from glass.
 4. Make certain that Facility personnel are aware of the condition.
 5. Stay in shelter until "**all clear**" has been issued.
- **Immediately After the Storm**
 1. Account for all personnel.
 2. Survey for damages to the Facility.
 3. Initiate team for any repairs if needed (i.e. high tank alarms, lighting, etc.).
 4. Refer to this Plan for additional response guidance regarding fires, spills, etc., as needed.

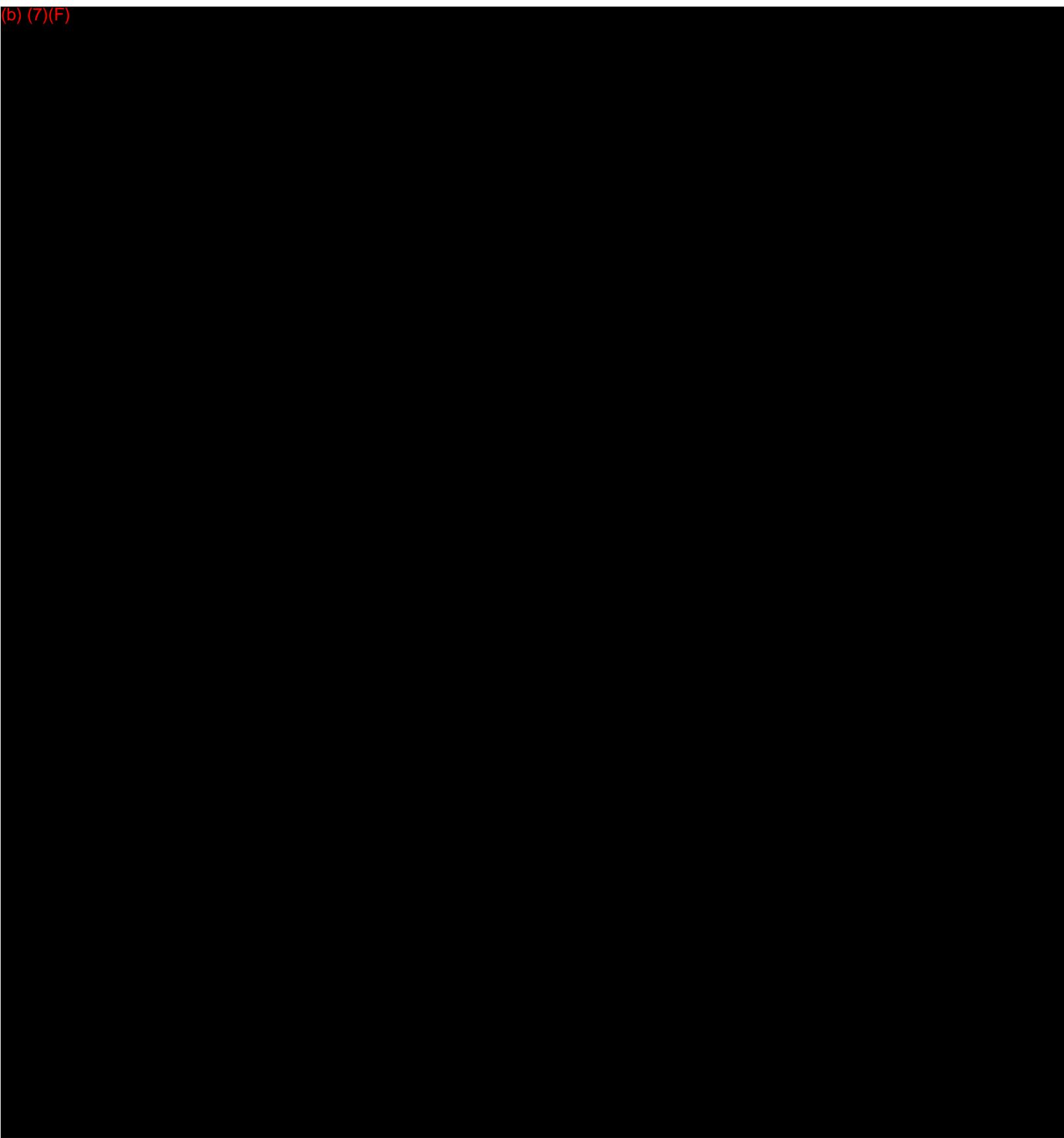
TORNADO/STRAIGHT LINE WINDS SPECIFIC RESPONSE

Warning times for tornadoes may be very short and the information not very precise. The Superintendent should notify all employees of any tornado watch or tornado warning announced by the Weather Bureau.

If a tornado is sighted:

- The Superintendent should announce the sighting over the Company Radio System and tell all employees to report immediately to the Emergency Tornado Shelters.
- All Employees should proceed immediately to the Tornado shelters.
- After the Tornado is over, the Superintendent will organize search and rescue teams if anyone is not accounted for.
- Handle any injured personnel according to the severe injury procedure outlined in the beginning of this section.
- The Superintendent will assess the situation to determine the best approach to follow in returning to normal operations.

(b) (7)(F)



MEDICAL EMERGENCY

- Apply appropriate first aid for both injury and shock, exercising care not to cause further injury.
- If victim is unconscious and not breathing, immediately apply artificial respiration (if trained in CPR) and continue without interruption until natural breathing is restored or relieved by another trained CPR personnel or other qualified medical personnel.
- Call for ambulance or other medical evacuation resources, if appropriate.
- Notify hospital of patient arrival and extent of injury.
- Notify victim's immediate family.
- Complete follow-up and written reporting, as the situation demands. Refer to the Company's injury procedures for additional information.

3.2 DOCUMENTATION OF INITIAL RESPONSE ACTIONS

It is difficult, particularly during the first few minutes of an initial response operation, to think about the importance of documentation. A log should be maintained that documents the history of the events and communications that occur during the response. When recording this information, it is important to remember that the log may become instrumental in legal proceedings, therefore:

- Record only facts, do not speculate.
- Do not criticize the efforts and/or methods of other people/operations.
- Do not speculate on the cause of the spill.
- Do not skip lines between entries or make erasures. If an error is made, draw a line through it, add the correct entry above or below it, and initial the change.
- Record the recommendations, instructions, and actions taken by government/regulatory officials.
- Document conversations (telephone or in person) with government/regulatory officials.
- **Request that government/regulatory officials document and sign their recommendations or orders (especially if company personnel do not agree with the suggestions, instructions, or actions).**

3.3 OIL CONTAINMENT, RECOVERY AND DISPOSAL/WASTE MANAGEMENT

The disposal of recovered oil and oily debris poses potential immediate and long term problems; therefore, every effort should be made to reclaim as much of the recovered oil as possible. All contaminated material will be disposed of in accordance with all applicable state, federal and local regulations. The Environmental, Health and Safety (EHS) - Remediation Department must be consulted to ensure compliance with these regulations.

Recovered oil, oily liquids, gasoline or diesel contaminated soil, and other cleanup debris such as concrete, wood, oily rags, spill booms and sorbent materials will be collected, temporarily stored and eventually disposed of off-site. The disposal method will be determined by testing the wastes for ignitability, corrosivity, reactivity, and toxicity characteristics. Other tests required by recycling/disposal facilities will be conducted as required. Crude oil contaminated soil may be bio-remediated at one of the Kinder Morgan facilities on a Railroad Commission of Texas approved remediation pad.

Waste containing any kind of oil is considered hazardous unless it can be shown to be non-hazardous by a certified laboratory analysis. To be classified as non-hazardous, the waste must be certified not to possess any of the following characteristics: ignitability, corrosivity, reactivity or toxicity. Laboratory analysis will be required by any disposal facility before they will accept oily waste for disposal. Kinder Morgan has ongoing contracts with various laboratories. Analytical methods that are commonly used are:

- Benzene SW-846-8020
- Toluene SW-846-8020
- Ethyl benzene SW-846-8020
- Xylene SW-846-8020

- Total Petroleum Hydrocarbons 418.113550

Total Metals;

- Arsenic SW-846-7060
- Cadmium SW-846-7130
- Chromium SW-846-7191
- Lead SW-846-7420

Hazardous Waste Characteristics;

- Ignitability SW-846-1010
- Corrosivity SW-846-1110
- Cyanide SW-846-7.3.3.2
- Reactivity Sulfide SW-846-7.3.4.2
- TCLP Volatiles SW-846-8260

As directed by the EHS - Remediation Department, materials deemed non-recyclable will be:

1. Sold to a commercial recycler, or
2. Disposed of off-site.

Kinder Morgan has existing disposal contracts for Class I, II, and III non-hazardous materials and for hazardous materials. Kinder Morgan also has contracts for the incineration of hazardous materials. The EHS - Remediation Department will coordinate; labeling, placarding, manifesting and permitting requirements for waste shipments offsite.

FIGURE 3.2

PRODUCT SPECIFIC RESPONSE CONSIDERATIONS

FLAMMABLE LIQUIDS (Non-Polar/Water-Immiscible)	
The following information provides the initial responder(s) with data that may be useful in making quick decisions and executing prompt response actions. <u>The information is intended for guideline purposes only.</u>	
HEALTH	
GUIDE NO. 128	<ul style="list-style-type: none"> ● Inhalation or contact with material may irritate or burn skin and eyes. ● Fire may produce irritating, corrosive and/or toxic gases. ● Vapors may cause dizziness or suffocation. ● Runoff from fire control or dilution water may cause pollution.
FIRST AID	
<ul style="list-style-type: none"> ● Move victim to fresh air. ● Call 911 or emergency medical service. ● Give artificial respiration if victim is not breathing. ● Administer oxygen if breathing is difficult. ● Remove and isolate contaminated clothing and shoes. ● In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes. ● Wash skin with soap and water. ● In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin. ● Keep victim warm and quiet. ● Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed. ● Ensure medical personnel are aware of materials involved and take precautions to protect themselves. 	
PUBLIC SAFETY	
<ul style="list-style-type: none"> ● CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover. ● Isolate spill or leak area immediately for at least 25 to 50 meters (80 to 160 feet) in all directions. ● Keep unauthorized personnel away. ● Stay upwind. ● Keep out of low areas. ● Ventilate closed spaces before entering. 	
EVACUATION	<p>Large Spill</p> <ul style="list-style-type: none"> ● Consider initial downwind evacuation for at least 300 meters (1,000 feet). <p>Fire</p> <ul style="list-style-type: none"> ● If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.
Information provided by the Emergency Response Guidebook 2012.	

3.4 STORAGE/DISPOSAL

Strict rules designed to ensure safe and secure handling of waste materials govern the Company waste disposal activities. To ensure proper disposal of recovered oil and associated debris, the following guidelines should be considered:

- In the event of a product spill, the Facility has limited capacity to store recovered product and water. Separated product is pumped to trucks to be carried to a facility for processing.
- Oily debris will be segregated on site and containerized for temporary storage prior to disposal in accordance with RCRA/CERCLA regulations.
- Transportation of waste material will be performed in accordance with all applicable federal and state guidelines.
- Waste associated with the spill will be disposed of at Company pre-approved sites which have the necessary permits to accept the type of waste to be discharged.

The Company's EHS Manager will coordinate activities and secure the necessary permits to ensure proper disposal or recycling of recovered product and debris.

3.5 SAMPLING AND WASTE ANALYSIS PROCEDURE

The Company's sampling and waste analysis practices are governed by the regulations for the applicable state and the United States Environmental Protection Agency (EPA). These regulations outline methods and procedures for determining the chemical and physical characteristics of wastes generated by the Facility, including waste associated with spills, so that they may be properly stored, treated, or disposed.

3.6 SAFETY AWARENESS

It is the corporate policy of the Company to provide a safe workplace for all workers. All employees and contractors are responsible for maintaining the safety and health of all workers at the Facility and the response operations.

Prior to engaging in **any** spill response activity:

- All employees/contractors must have received orientation from the Company Safety Plan.
- All contractor response personnel must be in compliance with OSHA training requirements.
- All other personnel will have completed appropriate training for their position as outlined in Section 4.0.
- No employee/contractor shall engage in activities which place them at risk without the appropriate protective equipment and training.

General Response Safety

All company and contractor personnel are expected to comply with the Site Safety and Health Plan for each spill incident.

- Any concern regarding health or safety issues should be immediately addressed.
- The First Responder must consider the spill site as dangerous and the local atmosphere explosive until air monitoring procedures prove that the area is safe.
- The First Responder must exit the area against or across the wind if possible and must also evacuate others who are working in the area.
- All injuries, no matter how minor, must be reported to the Facility Management in a timely manner.
- Prior to entering a spill area, a qualified person must perform an initial safety and health evaluation of the site.

Air Monitoring

A Safety Monitor shall be designated who is trained in the operation of air monitoring equipment. The Incident Commander must ensure that Safety Monitors are trained and that their equipment is maintained and ready for use.

- The air monitoring equipment shall be activated and checked at the location in which it is stored.
- Air monitoring measurements which are to be made prior to entry into the spill area include:
 - Lower Explosive Limit (LEL)
 - Oxygen content
- LEL readings above 10% require immediate evacuation of the area and elimination of ignition sources.
- Oxygen readings below 19.5% require the use of air supplied respiratory protection.
- The Incident Commander is responsible for industrial hygiene monitoring in the post discovery period.

Decontamination

Through training programs, personnel know and understand the importance of the removal of hazardous substances from their person if they are contaminated. Eyewash stations and safety showers provide a means to quickly remove gross contamination of harmful agents, including gasoline. Personnel must immediately shower and remove any clothing which is wet or otherwise contaminated. Showers in the change room are to be used for thorough cleansing. Persons should inspect themselves thoroughly before donning a fresh change of clothing

Contaminated clothing should be disposed of properly. Contaminated personal protective equipment must be washed and sanitized before re-using. The washing of contaminated equipment is performed in a "contained area" to assure that the disposal of the wash water can be handled properly.

Establishing "Exclusion - Hot", "Decontamination - Decon", and "Support - Safe" zones are required to prevent the removal of contaminants from the contaminated area as well as unauthorized entry into contaminated areas.

- Regardless of the decontamination facilities available, all efforts to minimize personnel exposure should be taken.

- Decontamination facilities should be positioned prior to employee/ contractor entrance to areas where the potential for exposure to contamination exists. The appropriate Material Safety Data Sheets (MSDS) are available to aid health professionals treating the injured parties. MSDS are separately maintained at the nearest Facility.
- Decontamination facilities should be designed to prevent further contamination of the environment and should have a temporary storage area for items that will be reused in the contaminated area.
- Particular attention should be paid to personal hygiene prior to eating, drinking, or smoking.

Personal Protective Equipment (PPE)

The following represents OSHA/USEPA designated PPE levels for responding to emergencies, post emergency cleanup sites, and/or Temporary Storage and Disposal (TSD) sites. The responder's PPE should be chosen based on his/her level of training and assigned job duties.

Personal Protective Equipment (PPE)	
<p>LEVEL A</p> <ul style="list-style-type: none"> ● Self Contained Breathing Apparatus (SCBA) (worn inside suit) ● Encapsulated Chemical Protective Suit ● Chemical Protective Gloves ● Chemical Protective Boots ● Hard Hat ● Safety Toe Footwear ● Safety Glasses 	<p>To be selected when the greatest level of skin, respiratory, and eye protection is required.</p>
<p>LEVEL B</p> <ul style="list-style-type: none"> ● SCBA (worn outside suit) ● Chemical Protective Suit w/Hood ● Chemical Protective Boots ● Chemical Protective Gloves ● Hard Hat ● Safety Toe Footwear ● Safety Glasses 	<p>To be selected when the highest level of respiratory protection is necessary but a lesser level of skin protection is needed.</p>
<p>LEVEL C</p> <ul style="list-style-type: none"> ● Air Purifying Respirator (APR) ● APR a½ Face or Full Face ● Hard Hat ● Glasses (worn with a½ face APR) ● Chemical Protective Boots ● Chemical Protective Gloves ● Chemical Protective Suit/Tyvek ● Safety Toe Footwear ● Safety Glasses 	<p>To be selected when the concentration and type of airborne substances is known and the criteria for using air purifying respirators are met.</p>
<p>MODIFIED LEVEL C Same as level C except no APR requirements.</p>	<p>To be selected when the concentration and type of airborne substances is known and the levels are below the criteria for using air purifying respirators.</p>
<p>LEVEL D</p> <ul style="list-style-type: none"> ● Hard Hat ● Safety Glasses ● Work Uniform / Clothes ● Leather Gloves ● Safety Boots ● Nomex (if required by the Company) 	<p>The atmosphere contains no known hazard and work functions preclude the potential for unexpected inhalation of or contact with hazardous levels of any chemicals.</p>

3.7 EMERGENCY MEDICAL TREATMENT AND FIRST AID

On-site emergency medical response requires the same rapid assessment of the patient as any other situation, but requires the responders to be aware of other considerations that may affect the way they handle the patient. These considerations include the following:

- The potential for contamination of the patient, responders, and equipment should be addressed. Responders should arrange to treat all patients **AFTER** the injured party has been decontaminated according to the Site Safety and Health Plan.
- Site personnel should make the initial assessment of the patient and determine the severity of the injury/illness.
- If the treatment needed is critical care or "life saving" treatment, rapid decontamination of the injured/ill party should be started. Refer to the Site Safety and Health Plan for steps to be taken in an "abbreviated" decontamination for medical treatment.
- **The need for full decontamination should be carefully weighed against the need for prompt medical treatment.**
- The ambulance responding to medical emergencies shall be contacted as soon as possible and instructed exactly where to respond when needed and the nature of the contaminant. Telephone reference is provided in Figure 2.5.
- MSDS information will be available from the Incident Commander and should be provided to medical personnel to alert them of decontamination requirements.
- If emergency medical treatment is needed, the Incident Commander, or his designated representatives, will request assistance from trained medical personnel.

4.0 RESPONSE TEAMS

- 4.1 [Introduction](#)
- 4.2 [Qualified Individual](#)
- 4.3 [Local Response Team](#)
- 4.4 [Crisis Support Team](#)
- 4.5 [Incident Command System \(ICS\)](#)
- 4.6 [Unified Command](#)
- 4.7 [ICS Roles and Responsibilities](#)

Figure 4.1 [Incident Command System](#)

Figure 4.2 [Operational Period Planning Cycle](#)

4.1 INTRODUCTION

This section describes organizational features and duties of the Local Response Team and the broader Company Crisis Support Team.

The key to an effective emergency response is a rapid, coordinated, tiered response by the affected facility, and the Crisis Support Team, consistent with the magnitude of an incident.

First response to an incident at the Facility will be provided by the Local Response Team (LRT). The Crisis Support Team will respond, to the degree necessary, to incidents exceeding local capability. If a response exceeds the Local Response Team's capabilities, the Local Incident Commander will activate the Crisis Support Team.

These response teams will use the NIMS Incident Command System (ICS) to manage the emergency response activities. Because ICS is a management tool that is readily adaptable to incidents of varying magnitude, it will typically be used for all emergency incidents. Staffing levels will be adjusted to meet specific response team needs based on incident size, severity, and type of emergency.

An explanation of ICS and the roles and responsibilities for primary members of the response teams are provided in Section 4.7. The USCG Incident Management Handbook (IMH) contains an in-depth description of all ICS positions, ICS development, response objectives and strategies, command responsibilities, ICS specific glossary/acronyms, resource typing, the IAP process, and meetings.

4.2 QUALIFIED INDIVIDUAL

It is the responsibility of the Qualified Individual (QI) or his/her designee to coordinate with the Federal On-Scene Coordinator (FOSC) and State On-Scene Coordinator (SOSC) throughout the response, if applicable.

Vital duties of the Qualified Individual (QI) include:

- Activate internal alarms and hazard communication systems to notify all Facility personnel and contract with required oil spill removal organizations (OSROs).
- Activate Company personnel and equipment.
- Obligate any funds required to carry out all required or directed oil spill response activities.
- Arrangements will be made to ensure that the Qualified Individual (QI) or the Alternate Qualified Individual (AQI) is available on a 24-hour basis and is able to arrive at the Facility in a reasonable time.
- The AQI shall replace the QI in the event of his/her absence and have the same responsibilities and authority.

4.3 LOCAL RESPONSE TEAM

The first Company person on scene will function as the Incident Commander and person-in-

charge until relieved by an authorized supervisor who will then assume the position of Incident Commander (IC). Transfer of command will take place as more qualified management respond to the incident.

The number of positions/personnel required to staff the Local Response Team will depend on the size and complexity of the incident. The duties of each position may be performed by the IC directly or delegated as the situation demands. The IC is always responsible for directing the response activities and will assume the duties of all the primary positions until the duties can be delegated to other qualified personnel.

A complete functional ICS organization is shown in Figure 4.1. The LRT should try to fill the necessary positions and request additional support from the Crisis Support Team to fill/back up all the positions as the incident may dictate. Detailed job descriptions of the primary response team positions are provided in Section 4.7.

4.4 CRISIS SUPPORT TEAM

For spill response operations outside the capabilities of the Local Response Team (LRT), the QI/AQI or IC will determine the need for mobilization of the Crisis Support Team (CST). The members of the LRT will typically become members of the CST.

The Crisis Support Team (CST), once fully staffed, is designed to cover all aspects of a comprehensive and prolonged incident response. The number of positions/ personnel required to staff the CST will depend on the size and complexity of the incident. During a prolonged response, additional personnel may be cascaded in, and more than one level within the Team may be involved to sustain 24-hour operations.

The CST is basically organized according to the NIMS Incident Command System principles (Figure 4.2). Led by the Incident Commander, the team is composed of the following principal components:

- Command
- Operations
- Planning
- Logistics
- Finance

The Crisis Support Team is staffed by specially trained personnel from various facility/corporate locations, and by various contract resources as the situation requires. (CST organization chart is provided in Figure 4.2; telephone reference is provided in Figure 2.2.) Command and Unit Leader responsibilities are described in Section 4.7.

4.5 INCIDENT COMMAND SYSTEM (ICS)

The Incident Command System is intended to be used as an emergency management tool to aid in mitigating all types of emergency incidents. This system is readily adaptable to very small emergency incidents as well as more significant or complex emergencies. The Incident Command System utilizes the following criteria as key operational factors:

- Assigns overall authority to one individual
- Provides structured authority, roles and responsibilities during emergencies

- The system is simple and familiar, and is used routinely at a variety of incidents
- Communications are structured
- There is a structured system for response and assignment of resources
- The system provides for expansion, escalation, and transfer/transition of roles and responsibilities
- The system allows for "Unified Command" where agency involvement at the command level is required

Effective establishment and utilization of the Incident Command System during response to all types of emergencies can:

- Provide for increased safety
- Shorten emergency mitigation time by providing more effective and organized mitigation
- Cause increased confidence and support from local, State, Federal, and public sector emergency response personnel
- Provide a solid cornerstone for emergency planning efforts

Section 4.7 provides a comprehensive list of every response team member's duty assignment.

4.6 UNIFIED COMMAND

As a component of an Incident Command System, the Unified Command (UC) is a structure that brings together the Incident Commanders of all major organizations involved in the incident to coordinate an effective response while still meeting their own responsibilities. The Unified Command links the organizations responding to the incident and provides a forum for the Responsible Party and responding agencies to make consensus decisions. Under the Unified Command, the various jurisdictions and/or agencies and responders may blend together throughout the organization to create an integrated response team. The Incident Command System process requires the Unified Command to set clear objectives to guide the on-scene response resources.

Multiple jurisdictions may be involved in a response effort utilizing Unified Command. These jurisdictions could be represented by any combination of:

- Geographic boundaries
- Government levels
- Functional responsibilities
- Statutory responsibilities

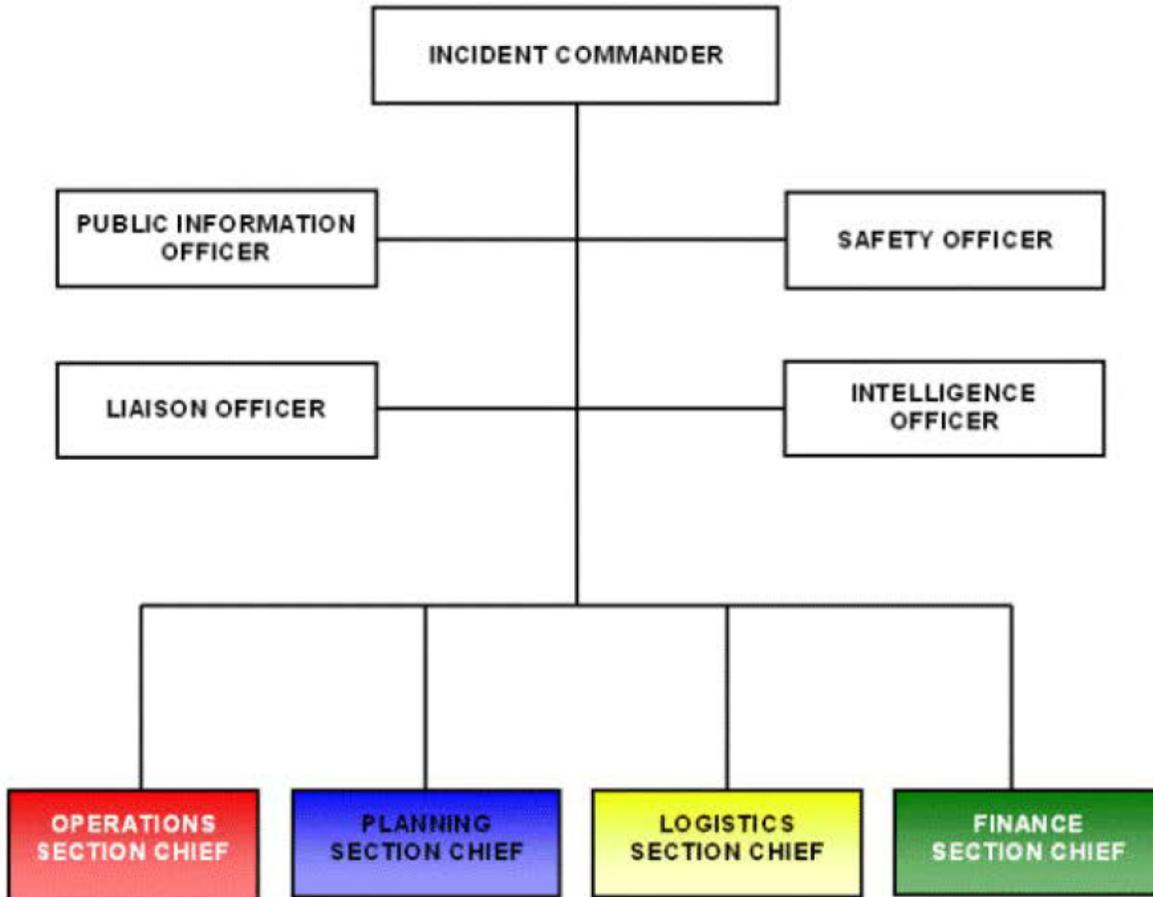
The participants of Unified Command for a specific incident will be determined taking into account the specifics of the incident and existing response plans and/or decisions reached during the initial meeting of the Unified Command. The Unified Command may change as an incident progresses, in order to account for changes in the situation.

The Unified Command is responsible for overall management of an incident. The Unified Command directs incident activities and approves and releases resources. The Unified Command structure is a vehicle for coordination, cooperation and communication which is essential to an effective response.

Unified Command representatives must be able to:

- Agree on common incident objectives and priorities
- Have the capability to sustain a 24-hour-7-day-per-week commitment to the incident
- Have the authority to commit agency or Company resources to the incident
- Have the authority to spend agency or Company funds
- Agree on an incident response organization
- Agree on the appropriate Command and General Staff assignments
- Commit to speak with "one voice" through the Public Information Officer or Joint Information Center
- Agree on logistical support procedures
- Agree on cost-sharing procedures

FIGURE 4.1
INCIDENT COMMAND SYSTEM



4.7 ICS ROLES AND RESPONSIBILITIES

COMMON RESPONSIBILITIES

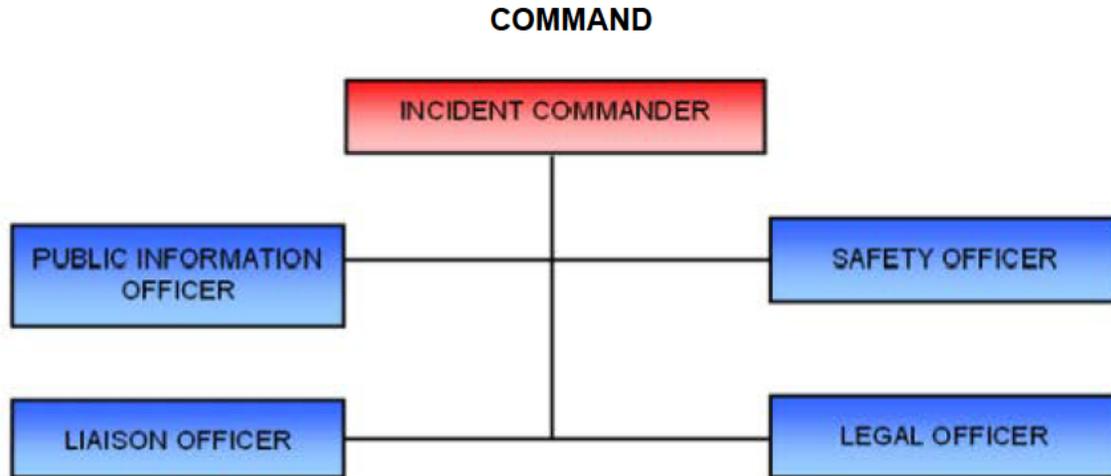
The following is a checklist applicable to all personnel in an Incident Command System organization:

- Receive assignment, including:
 - Job assignment
 - Resource order number and request number
 - Reporting location
 - Reporting time
 - Travel instructions
 - Special communications instructions
- Upon arrival, check-in at designated check-in location.
- Receive briefing from immediate supervisor.
- Acquire work materials.
- Supervisors maintain accountability for assigned personnel.
- Organize and brief subordinates.
- Know your assigned radio frequency(s) and ensure communications equipment is operating properly.
- Use clear text and Incident Command System terminology (no codes) in all communications.
- Complete forms and reports required of the assigned position and send to Documentation Unit.
- Maintain unit records, including Unit Log (ICS Form 214).
- Respond to demobilization orders and brief subordinates regarding demobilization.

UNIT LEADER RESPONSIBILITIES

In Incident Command System, a Unit Leader's responsibilities are common to all units in all parts of the organization. Common responsibilities of Unit Leaders are listed below.

- Review common responsibilities.
- Receive briefing from Incident Commander, Section Chief or Branch Director, as appropriate.
- Participate in incident planning meetings, as required.
- Determine current status of unit activities.
- Order additional unit staff, as appropriate.
- Determine resource needs.
- Confirm dispatch and estimated time of arrival of staff and supplies.
- Assign specific duties to staff; supervise staff.
- Develop and implement accountability, safety and security measures for personnel and resources.
- Supervise demobilization of unit, including storage of supplies.
- Provide Supply Unit Leader with a list of supplies to be replenished.
- Maintain unit records, including Unit Log (ICS Form 214).



INCIDENT COMMANDER

- Assess the situation and/or obtain a briefing from the prior Incident Commander.
- Determine Incident Objectives and strategy.
- Establish the immediate priorities.
- Establish an Incident Command Post.
- Brief Command Staff and Section Chiefs.
- Review meetings and briefings.
- Establish an appropriate organization.
- Ensure planning meetings are scheduled as required. (Refer to Figure 4.3 "Operational Period Planning Cycle" for assistance).
- Approve and authorize the implementation of an Incident Action Plan.
- Ensure that adequate safety measures are in place.
- Coordinate activity for all Command and General Staff.
- Coordinate with key people and officials.
- Approve requests for additional resources or for the release of resources.
- Keep agency administrator informed of incident status.
- Approve the use of trainees, volunteers, and auxiliary personnel.
- Authorize release of information to the news media.
- Ensure incident Status Summary (ICS Form 209-CG) is completed and forwarded to appropriate higher authority.
- Order the demobilization of the incident when appropriate.
- Assign any of the Incident Commander roles and responsibilities to a Deputy Incident Commander as needed.

PUBLIC INFORMATION OFFICER

- Determine from the Incident Commander if there are any limits on information release.
- Develop material for use in media briefings.
- Obtain Incident Commander approval of media releases.
- Inform media and conduct media briefings.
- Arrange for tours and other interviews or briefings that may be required.
- Obtain media information that may be useful to incident planning.
- Maintain current information summaries and/or displays on the incident and provide information on the status of the incident to assigned personnel.

LIAISON OFFICER

- Be a contact point for Agency Representatives.
- Maintain a list of assisting and cooperating agencies and Agency Representatives. Monitor check-in sheets daily to ensure that all Agency Representatives are identified.
- Assist in establishing and coordinating interagency contacts.
- Keep agencies supporting the incident aware of incident status.
- Monitor incident operations to identify current or potential inter-organizational problems.
- Participate in planning meetings, providing current resource status, including limitations and capability of assisting agency resources.
- Coordinate response resource needs for Natural Resource Damage Assessment and Restoration (NRDAR) activities with the Operations during oil and HAZMAT responses.
- Coordinate response resource needs for incident investigation activities with the Operations.
- Ensure that all required agency forms, reports and documents are completed prior to demobilization.
- Coordinate activities of visiting dignitaries.

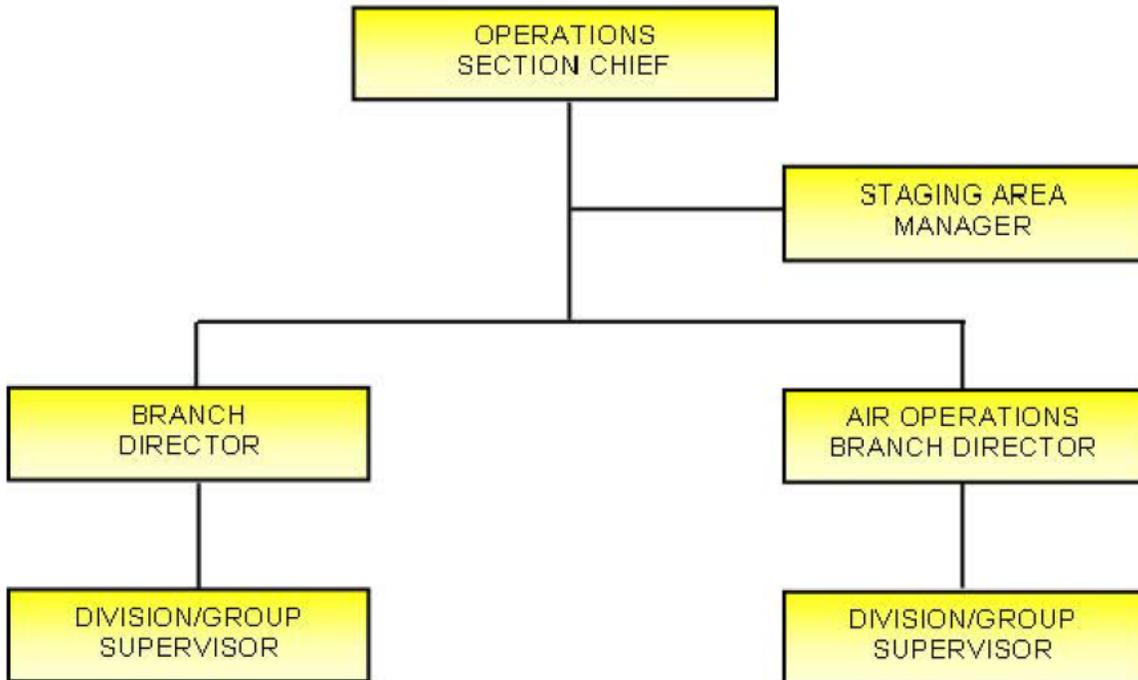
SAFETY OFFICER

- Participate in planning meetings.
- Identify hazardous situations associated with the incident.
- Review the Incident Action Plan for safety implications.
- Exercise emergency authority to stop and prevent unsafe acts.
- Investigate accidents that have occurred within the incident area.
- Review and approve the medical plan.
- Develop the Site Safety Plan and publish Site Safety Plan summary (ICS Form 208) as required.

LEGAL OFFICER

- Participate in planning meetings, if requested.
- Advise on legal issues relating to in-situ burning, use of dispersants, and other alternative response technologies.
- Advise on legal issues relating to differences between Natural Resource Damage Assessment Restoration (NRDAR) and response activities.
- Advise on legal issues relating to investigations.
- Advise on legal issues relating to finance and claims.
- Advise on legal issues relating to response.

OPERATIONS



OPERATIONS SECTION GENERAL FUNCTIONS

- Responsible for managing tactical operations at the incident site directed toward reducing the immediate hazard, saving lives and property, establishing situational control, and restoring normal operations.
- Directs and coordinates all incident tactical operations.
- Executes the Incident Action Plan.

OPERATIONS SECTION CHIEF

- Develop operations portion of Incident Action Plan.
- Brief and assign Operations Section personnel in accordance with the Incident Action Plan.
- Supervise Operations Section.
- Determine need and request additional resources.
- Review suggested list of resources to be released and initiate recommendation for release of resources.
- Assemble and disassemble strike teams assigned to the Operations Section.
- Report information about special activities, events, and occurrences to the Incident Commander.
- Respond to resource requests in support of National Resource Damage Assessment and Restoration activities.

BRANCH DIRECTOR

- Develop with subordinates alternatives for Branch control operations.
- Attend planning meetings at the request of the Operations.
- Review Assignment List (ICS Form 204-CG) for Divisions/Groups within the Branch. Modify lists based on effectiveness of current operations.
- Assign specific work tasks to Division/Group Supervisors.
- Supervise Branch operations.
- Resolve logistic problems reported by subordinates.
- Report to Operations when: the Incident Action Plan is to be modified; additional resources are needed; surplus resources are available; or hazardous situations or significant events occur.
- Approve accident and medical reports originating within the Branch.

DIVISION/GROUP SUPERVISOR

- Implement Incident Action Plan for Division/Group.
- Provide the Incident Action Plan to Strike Team Leaders, when available.
- Identify increments assigned to the Division/Group.
- Review Division/Group assignments and incident activities with subordinates and assign tasks.
- Ensure that the Incident Commander and/or Resources Unit is advised of all changes in the status of resources assigned to the Division/Group.
- Coordinate activities with adjacent Division/Group.
- Determine need for assistance on assigned tasks.
- Submit situation and resources status information to the Branch Director or the Operations.
- Report hazardous situations, special occurrences, or significant events (e.g., accidents, sickness, discovery of unanticipated sensitive resources) to the immediate supervisor.
- Ensure that assigned personnel and equipment get to and from assignments in a timely and orderly manner.
- Resolve logistics problems within the Division/Group.
- Participate in the development of Branch plans for the next operational period.

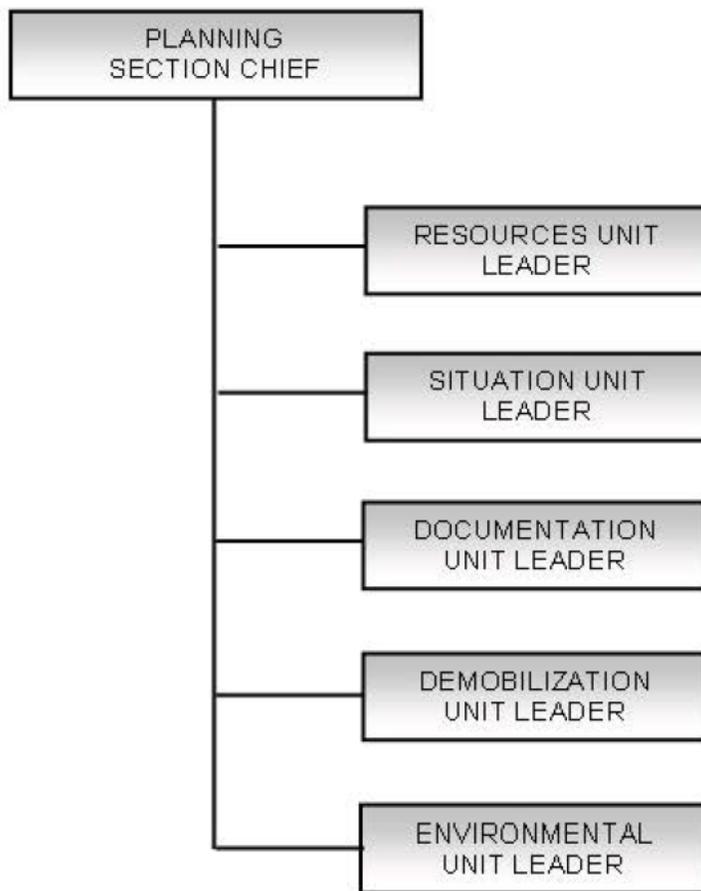
STAGING AREA MANAGER

- Establish Staging Area layout.
- Determine any support needs for equipment, feeding, sanitation and security.
- Establish check-in function as appropriate.
- Post areas for identification and traffic control.
- Request maintenance service for equipment at Staging Area as appropriate.
- Respond to request for resource assignments.
- Obtain and issue receipts for radio equipment and other supplies distributed and received at Staging Area.
- Determine required resource levels from the Operations.
- Advise the Operations when reserve levels reach minimums.
- Maintain and provide status to Resource Unit of all resources in Staging Area.
- Demobilize Staging Area in accordance with the Incident Demobilization Plan.

AIR OPERATIONS BRANCH DIRECTOR

- Organize preliminary air operations.
- Request declaration (or cancellation) of restricted air space
- Participate in preparation of the Incident Action Plan through the Operations. Insure that the air operations portion of the Incident Action Plan takes into consideration the Air Traffic Control requirements of assigned aircraft.
- Perform operational planning for air operations.
- Prepare and provide Air Operations Summary (ICS Form 220) to the Air Support Group and Fixed-Wing Bases.
- Determine coordination procedures for use by air organization with ground Branches, Divisions, or Groups.
- Coordinate with appropriate Operations Section personnel.
- Supervise all air operations activities associated with the incident.
- Evaluate helibase locations.
- Establish procedures for emergency reassignment of aircraft.
- Schedule approved flights of non-incident aircraft in the restricted air space area.
- Coordinate with the Operations Coordination Center (OCC) through normal channels on incident air operations activities.
- Inform the Air Tactical Group Supervisor of the air traffic situation external to the incident.
- Consider requests for non-tactical use of incident aircraft.
- Resolve conflicts concerning non-incident aircraft.
- Coordinate with Federal Aviation Administration.
- Update air operations plans.
- Report to the Operations on air operations activities.
- Report special incidents/accidents.
- Arrange for an accident investigation team when warranted.

PLANNING



PLANNING SECTION GENERAL FUNCTIONS

- Responsible for gathering, evaluating, and disseminating tactical information and intelligence critical to the incident.
- Maintaining incident documentation and providing documentation services.
- Preparing and documenting Incident Action Plans.
- Conducting long-range and/or contingency planning.
- Developing alternative strategies.
- Tracking resources assigned to the incident.
- Developing plans for waste disposal.
- Developing plans for demobilization.

PLANNING SECTION CHIEF

- Collect and process situation information about the incident.
- Supervise preparation of the Incident Action Plan.
- Provide input to the Incident Commander and the Operations in preparing the Incident Action Plan.
- Chair planning meetings and participate in other meetings as required. (Refer to Figure 4.5 "Operational Period Planning Cycle" for assistance.)
- Reassign out-of-service personnel already on-site to Incident Command System organizational positions as appropriate.
- Establish information requirements and reporting schedules for Planning Section Units (e.g., Resources, Situation Units).
- Determine the need for any specialized resources in support of the incident.
- If requested, assemble and disassemble Strike Teams and Task Forces not assigned to Operations.
- Establish special information collection activities as necessary (e.g., weather, environmental, toxics, etc.).
- Assemble information on alternative strategies.
- Provide periodic predictions on incident potential.
- Report any significant changes in incident status.
- Compile and display incident status information.
- Oversee preparation and implementation of the Incident Demobilization Plan.
- Incorporate plans (e.g., Traffic, Medical, Communications, Site Safety) into the Incident Action Plan.

RESOURCES UNIT LEADER

- Establish the check-in function at incident locations.
- Prepare Organization Assignment List (ICS Form 203-CG) and Incident Organization (ICS Form 207-CG).
- Prepare appropriate parts of Assignment List (ICS Form 204).
- Prepare and maintain the Incident Command Post display (to include organization chart and resource allocation and deployment).
- Maintain and post the current status and location of all resources.
- Maintain master roster of all resources checked in at the incident.

SITUATION UNIT LEADER

- Begin collection and analysis of incident data as soon as possible.
- Prepare, post, or disseminate resource and situation status information as required, including special requests.
- Prepare periodic predictions or as requested by the Planning Section Chief.
- Prepare the Incident Status Summary (ICS Form 209-CG).
- Provide photographic services and maps if required.

DOCUMENTATION UNIT LEADER

- Set up work area; begin organization of incident files.
- Establish duplication service; respond to requests.
- File all official forms and reports.
- Review records for accuracy and completeness; inform appropriate units of errors or omissions.
- Provide incident documentation as requested.
- Store files for post-incident use.

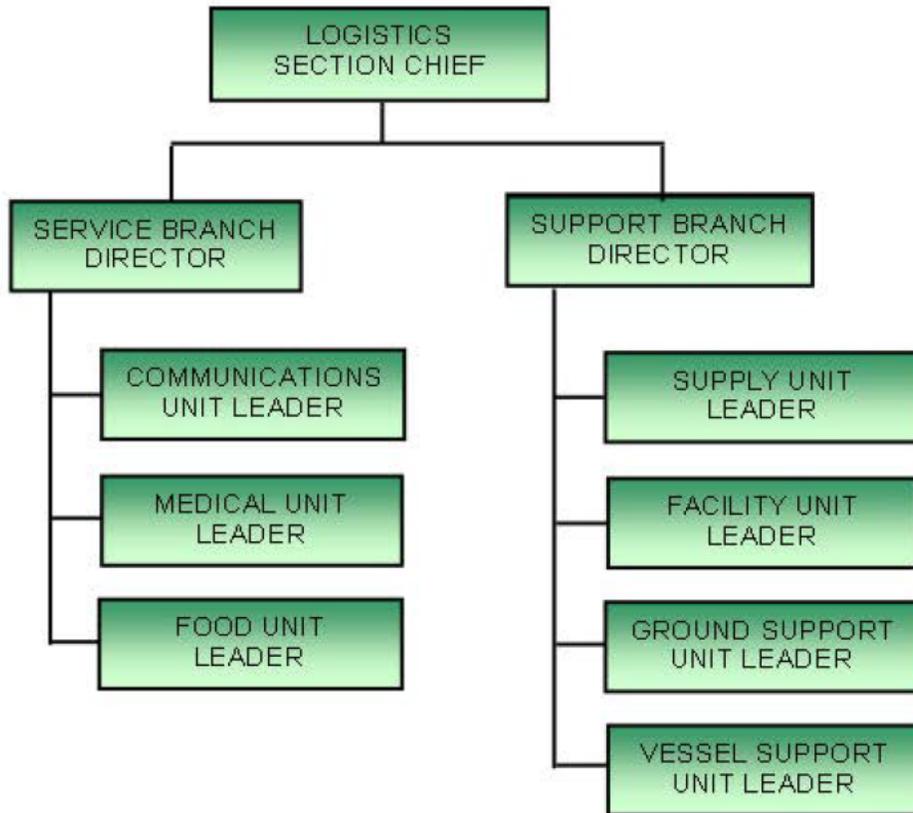
DEMOBILIZATION UNIT LEADER

- Participate in planning meetings as required.
- Review incident resource records to determine the likely size and extent of demobilization effort.
- Based on the above analysis, add additional personnel, workspace, and supplies as needed.
- Coordinate demobilization with Agency Representatives.
- Monitor the on-going Operations Section resource needs.
- Identify surplus resources and probable release time.
- Develop incident check-out function for all units.
- Evaluate logistics and transportation capabilities to support demobilization.
- Establish communications with off-incident facilities, as necessary.
- Develop an Incident Demobilization Plan detailing specific responsibilities and release priorities and procedures.
- Prepare appropriate directories (e.g., maps, instructions, etc.) for inclusion in the demobilization plan.
- Distribute demobilization plan (on and off-site).
- Provide status reports to appropriate requestors.
- Ensure that all Sections/Units understand their specific demobilization responsibilities.
- Supervise execution of the Incident Demobilization Plan.
- Brief the Planning Section Chief on demobilization progress.

ENVIRONMENTAL UNIT LEADER

- Participate in Planning Section meetings.
- Identify sensitive areas and recommend response priorities.
- Following consultation with natural resource trustees, provide input on wildlife protection strategies (e.g., removing oiled carcasses, pre-emptive capture, hazing, and/or capture and treatment).
- Determine the extent, fate and effects of contamination.
- Acquire, distribute and provide analysis of weather forecasts.
- Monitor the environmental consequences of cleanup actions.
- Develop shoreline cleanup and assessment plans. Identify the need for, and prepare any special advisories or orders.
- Identify the need for, and obtain, permits, consultations, and other authorizations including Endangered Species Act (ESA) provisions.
- Following consultation with the Federal OnScene Coordinator's Historical/Cultural Resources Technical Specialist identify and develop plans for protection of affected historical/cultural resources.
- Evaluate the opportunities to use various response technologies.
- Develop disposal plans.
- Develop a plan for collecting, transporting, and analyzing samples.

LOGISTICS



LOGISTICS SECTION GENERAL FUNCTIONS

- Responsible for all support requirements needed to facilitate effective and efficient incident management, including ordering resources from off-incident locations.
- Ordering, obtaining, maintaining, and accounting for essential personnel, equipment, and supplies.
- Providing communication planning and resources.
- Setting up food services.
- Setting up and maintaining incident facilities.
- Providing support transportation.
- Providing medical services to incident personnel.

LOGISTICS SECTION CHIEF

- Plan the organization of the Logistics Section.
- Assign work locations and preliminary work tasks to Section personnel.
- Notify the Resources Unit of the Logistics Section units activated including names and locations of assigned personnel.
- Assemble and brief Branch Directors and Unit Leaders.
- Participate in preparation of the Incident Action Plan.
- Identify service and support requirements for planned and expected operations.
- Provide input to and review the Communications Plan, Medical Plan and Traffic Plan.
- Coordinate and process requests for additional resources.
- Review the Incident Action Plan and estimate Section needs for the next operational period.
- Advise on current service and support capabilities.
- Prepare service and support elements of the Incident Action Plan.
- Estimate future service and support requirements.
- Receive Incident Demobilization Plan from Planning Section.
- Recommend release of Unit resources in conformity with Incident Demobilization Plan.
- Ensure the general welfare and safety of Logistics Section personnel.

SERVICE BRANCH DIRECTOR

- Determine the level of service required to support operations.
- Confirm dispatch of Branch personnel.
- Participate in planning meetings of Logistics Section personnel.
- Review the Incident Action Plan.
- Organize and prepare assignments for Service Branch personnel.
- Coordinate activities of Branch Units.
- Inform the Logistics Section Chief of Branch activities.
- Resolve Service Branch problems.

COMMUNICATIONS UNIT LEADER

- Prepare and implement the Incident Radio Communications Plan (ICS Form 205-CG).
- Ensure the Incident Communications Center and the Message Center is established.
- Establish appropriate communications distribution/maintenance locations within the Base/Camp(s).
- Ensure communications systems are installed and tested.
- Ensure an equipment accountability system is established.
- Ensure personal portable radio equipment from cache is distributed per Incident Radio Communications Plan.
- Provide technical information as required on:
 - Adequacy of communications systems currently in operation.
 - Geographic limitation on communications systems.
 - Equipment capabilities/limitations.
 - Amount and types of equipment available.
 - Anticipated problems in the use of communications equipment.
- Supervise Communications Unit activities.
- Maintain records on all communications equipment as appropriate.
- Ensure equipment is tested and repaired.
- Recover equipment from Units being demobilized.

MEDICAL UNIT LEADER

- Participate in Logistics Section/Service Branch planning activities.
- Prepare the Medical Plan (ICS Form 206-CG).
- Prepare procedures for major medical emergency.
- Declare major emergency as appropriate.
- Respond to requests for medical aid, medical transportation, and medical supplies.
- Prepare and submit necessary documentation.

FOOD UNIT LEADER

- Determine food and water requirements.
- Determine the method of feeding to best fit each facility or situation.
- Obtain necessary equipment and supplies and establish cooking facilities.
- Ensure that well-balanced menus are provided.
- Order sufficient food and potable water from the Supply Unit.
- Maintain an inventory of food and water.
- Maintain food service areas, ensuring that all appropriate health and safety measures are being followed.
- Supervise caterers, cooks, and other Food Unit personnel as appropriate.

SUPPORT BRANCH DIRECTOR

- Determine initial support operations in coordination with the Logistic Section Chief and Service Branch Director.
- Prepare initial organization and assignments for support operations.
- Assemble and brief Support Branch personnel.
- Determine if assigned Branch resources are sufficient.
- Maintain surveillance of assigned units work progress and inform the Logistic Section Chief of their activities.
- Resolve problems associated with requests from the Operations Section.

SUPPLY UNIT LEADER

- Participate in Logistics Section/Support Branch planning activities.
- Determine the type and amount of supplies en route.
- Review the Incident Action Plan for information on operations of the Supply Unit.
- Develop and implement safety and security requirements.
- Order, receive, distribute, and store supplies and equipment.
- Receive and respond to requests for personnel, supplies, and equipment.
- Maintain an inventory of supplies and equipment.
- Service reusable equipment.
- Submit reports to the Support Branch Director.

FACILITY UNIT LEADER

- Review the Incident Action Plan.
- Participate in Logistics Section/Support Branch planning activities.
- Determine requirements for each facility, including the Incident Command Post.
- Prepare layouts of incident facilities.
- Notify Unit Leaders of facility layout.
- Activate incident facilities.
- Provide Base and Camp Managers and personnel to operate facilities.
- Provide sleeping facilities.
- Provide security services.
- Provide facility maintenance services (e.g., sanitation, lighting, clean up).
- Demobilize Base and Camp facilities.
- Maintain facility records.

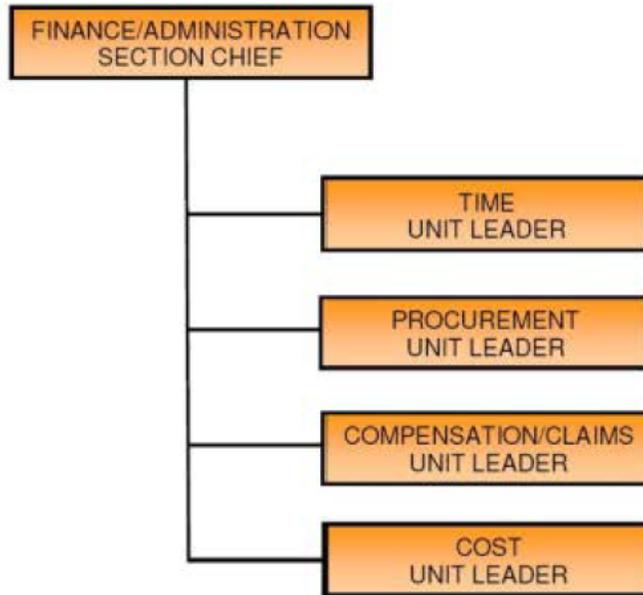
GROUND SUPPORT UNIT LEADER

- Participate in Support Branch/Logistics Section planning activities.
- Develop and implement the Traffic Plan.
- Support out-of-service resources.
- Notify the Resources Unit of all status changes on support and transportation vehicles.
- Arrange for and activate fueling, maintenance, and repair of ground resources.
- Maintain Support Vehicle Inventory and transportation vehicles (ICS Form 218).
- Provide transportation services, In accordance with requests from the Logistic Section Chief or Support Branch Director.
- Collect information on rented equipment.
- Requisition maintenance and repair supplies (e.g., fuel, spare parts).
- Maintain incident roads.
- Submit reports to Support Branch Director as directed.

VESSEL SUPPORT UNIT LEADER

- Participate in Support Branch/Logistics Section planning activities.
- Coordinate development of the Vessel Routing Plan.
- Coordinate vessel transportation assignments with the Protection and Recovery Branch or other sources of vessel transportation.
- Coordinate water-to-land transportation with the Ground Support Unit, as necessary.
- Maintain a prioritized list of transportation requirements that need to be scheduled with the transportation source.
- Support out-of-service vessel resources, as requested.
- Arrange for fueling, dockage, maintenance and repair of vessel resources, as requested.
- Maintain inventory of support and transportation vessels.

FINANCE/ADMINISTRATION



FINANCE/ADMINISTRATION SECTION GENERAL FUNCTIONS

- Responsible for all financial and cost analysis aspects of an incident. (Note: Not all incidents will require a separate Finance/Administration Section. In cases that require only one specific function (e.g., cost analysis), this service may be provided by a member of the Planning Section.)
- Administering any contract negotiation.
- Providing cost analysis as it pertains to the Incident Action Plan.
- Maintaining cost associated with the incident.
- Tracking personnel and equipment time.
- Addressing compensation for injury or damage to property issues.

FINANCE/ADMINISTRATION SECTION CHIEF

- Attend planning meetings as required.
- Manage all financial aspects of an incident.
- Provide financial and cost analysis information as requested.
- Gather pertinent information from briefings with responsible 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/Administration matters.
- Ensure that all personnel time records are accurately completed and transmitted, according to policy.
- Provide financial input to demobilization planning.
- Ensure that all obligation documents initiated at the incident are properly prepared and completed.
- Brief administrative personnel on all incident-related financial issues needing attention or follow-up prior to leaving incident.

TIME UNIT LEADER

- Determine incident requirements for time recording function.
- Determine resource needs.
- Contact appropriate agency personnel/representatives.
- Ensure that daily personnel time recording documents are prepared and in compliance with policy.
- Establish time unit objectives.
- Maintain separate logs for overtime hours.
- Establish commissary operation on larger or long-term incidents as needed.
- Submit cost estimate data forms to the Cost Unit, as required.
- Maintain records security.
- Ensure that all records are current and complete prior to demobilization.
- Release time reports from assisting agency personnel to the respective Agency Representatives prior to demobilization.
- Brief the Finance/Administration Section Chief on current problems and recommendations, outstanding issues, and follow-up requirements.

PROCUREMENT UNIT LEADER

- Review incident needs and any special procedures with Unit Leaders, as needed.
- Coordinate with local jurisdiction on plans and supply sources.
- Obtain the Incident Procurement Plan.
- Prepare and authorize contracts and land-use agreements.
- Draft memoranda of understanding as necessary.
- Establish contracts and agreements with supply vendors.
- Provide for coordination between the Ordering Manager, agency dispatch, and all other procurement organizations supporting the incident.
- Ensure that a system is in place that meets agency property management requirements. Ensure proper accounting for all new property.
- Interpret contracts and agreements; resolve disputes within delegated authority.
- Coordinate with the Compensation/Claims Unit for processing claims.
- Coordinate use of impress funds, as required.
- Complete final processing of contracts and send documents for payment.
- Coordinate cost data in contracts with the Cost Unit Leader.
- Brief the Finance/Administration Section Chief on current problems and recommendations, outstanding issues, and follow-up requirements.

COMPENSATION/CLAIMS UNIT LEADER

- Establish contact with the incident Security Officer and Liason Officer (or Agency Representatives if no Liason Officer is assigned).
- Determine the need for Compensation for Injury and Claims Specialists and order personnel as needed.
- Establish a Compensation for Injury work area within or as close as possible to the Medical Unit.
- Review Medical Plan (ICS Form 206-CG).
- Ensure that Compensation/Claims Specialists have adequate workspace and supplies.
- Review and coordinate procedures for handling claims with the Procurement Unit.
- Brief the Compensation/Claims Specialists on incident activity.
- Periodically review logs and forms produced by the Compensation/Claims Specialists to ensure that they are complete, entries are timely and accurate and that they are in compliance with agency requirements and policies.
- Ensure that all Compensation for Injury and Claims logs and forms are complete and routed appropriately for post-incident processing prior to demobilization.
- Keep the Finance/Administration Section Chief briefed on Unit status and activity.
- Demobilize unit in accordance with the Incident Demobilization Plan.

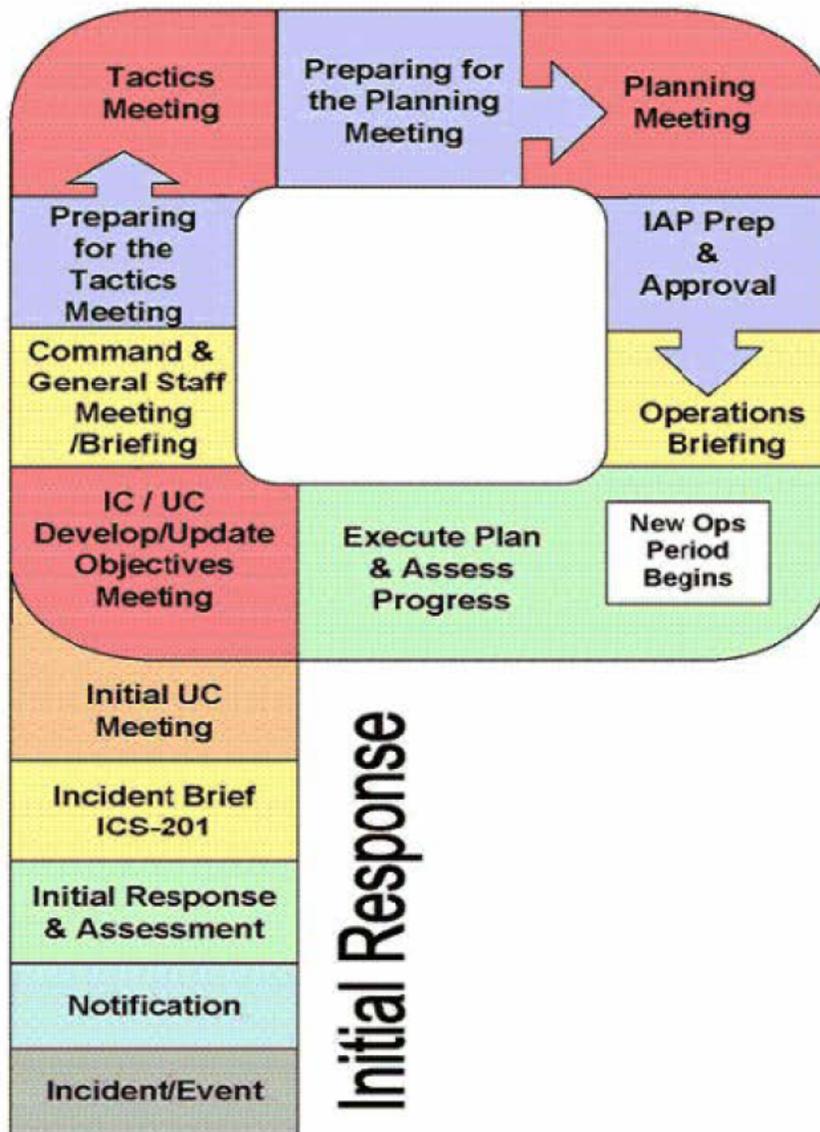
COST UNIT LEADER

- Coordinate cost reporting procedures.
- Collect and record all cost data.
- Develop incident cost summaries.
- Prepare resources-use cost estimates for the Planning Section.
- Make cost-saving recommendations to the Finance/Administration Section Chief.
- Ensure all cost documents are accurately prepared.
- Maintain cumulative incident cost records.
- Complete all records prior to demobilization.
- Provide reports to the Finance/Administration Section Chief.

FIGURE 4.2

UNITED STATES COAST GUARD
Operations Period Planning

The Operational Planning "P"



5.0 RESPONSE PLANNING

5.1 [Incident Action Plan](#)

5.2 [Site Safety Plan](#)

5.1 INCIDENT ACTION PLAN

Emergency response activities are planned and coordinated through the use of an Incident Action Plan (IAP), which is developed for each Operational Period of a response by the Initial Response Team. For small responses, an ICS 201 may be used as the IAP and, for all incidents, the ICS 201 will serve as the initial IAP.

For larger or more complex incidents, a more complete IAP will be necessary. These IAPs are generally created through the completion and compilation of several standard Incident Command System forms. These forms include, but are not limited to:

ICS FORM NUMBER	FORM TITLE	PREPARED BY
IAP Cover Sheet	ICS IAP Cover Sheet	Planning Section - Situation Unit Leader
201-CG	Incident Briefing	Command Section - Initial Response Incident Commander
202-CG	Incident Objectives	Planning Section - Planning Section Chief
203-CG	Organization Assignment List	Planning Section - Resources Unit Leader
204-CG	Assignment List	Operations Section - Chief & Resources Unit Leader
204a-CG	Assignment List Attachment	Operations Section - Chief & Resources Unit Leader
205-CG	Incident Radio Communication Plan	Logistics Section - Communication Unit Leader
205a-CG	Communications List	Logistics Section - Communication Unit Leader
206-CG	Medical Plan	Logistics Section - Medical Unit Leader
207-CG	Incident Organization	Planning Section - Resources Unit Leader
209-CG	Incident Status Summary	Command Section - Incident Commander
211-CG	Check-In List	
213-RR CG	Resource Request Message	
214-CG	Unit Log	Planning Section - Situation Unit Leader
215-CG	Operational Planning Worksheet	
215A-CG	Incident Action Plan Safety Analysis	
218	Support Vehicle Inventory	Logistics Section - Ground Support Unit Leader
220-CG	Air Operations Summary	Operations Section - Air Operations Branch Director
230-CG	Daily Meeting Schedule	
232-CG	Resources at Risk Summary	Planning Section - Situation Unit Leader
232a-CG	ACP Site Index	
233-CG	Incident Open Action Tracker	
234-CG	Work Analysis Matrix	
235-CG	Facility Needs Assessment Worksheet	
	Site Safety Plan	Command Section - Safety Officer
	Employee Certification Page	
	Media Statement	

Depending on the nature and severity of the emergency, additional documents may be included in the Incident Action Plan. These may include:

- Sensitivity Maps (Provided in Section 6)
- Waste Management and Disposal Plans (Provided in Appendix E)
- Plans for use of Alternative Technologies (Dispersant/In-situ Burning/ Bioremediation)
- Security Plans
- Decontamination Plans
- Traffic Plans

5.2 SITE SAFETY PLAN

Site Safety Plans (SSPs) are required by United States Occupational Safety and Health Administration (29 CFR 1910.120(b)(4)) for all hazardous waste operations. The Site Safety Plan should address all on-site operations and hazardous as well as on-site emergency procedures.

The Site Safety Plan is typically prepared by the Safety Officer and approved by the Incident Commander. All personnel must be familiar with the contents of the Site Safety Plan and the Site Safety Plan must be updated as conditions, operations and hazards associated with the response change.

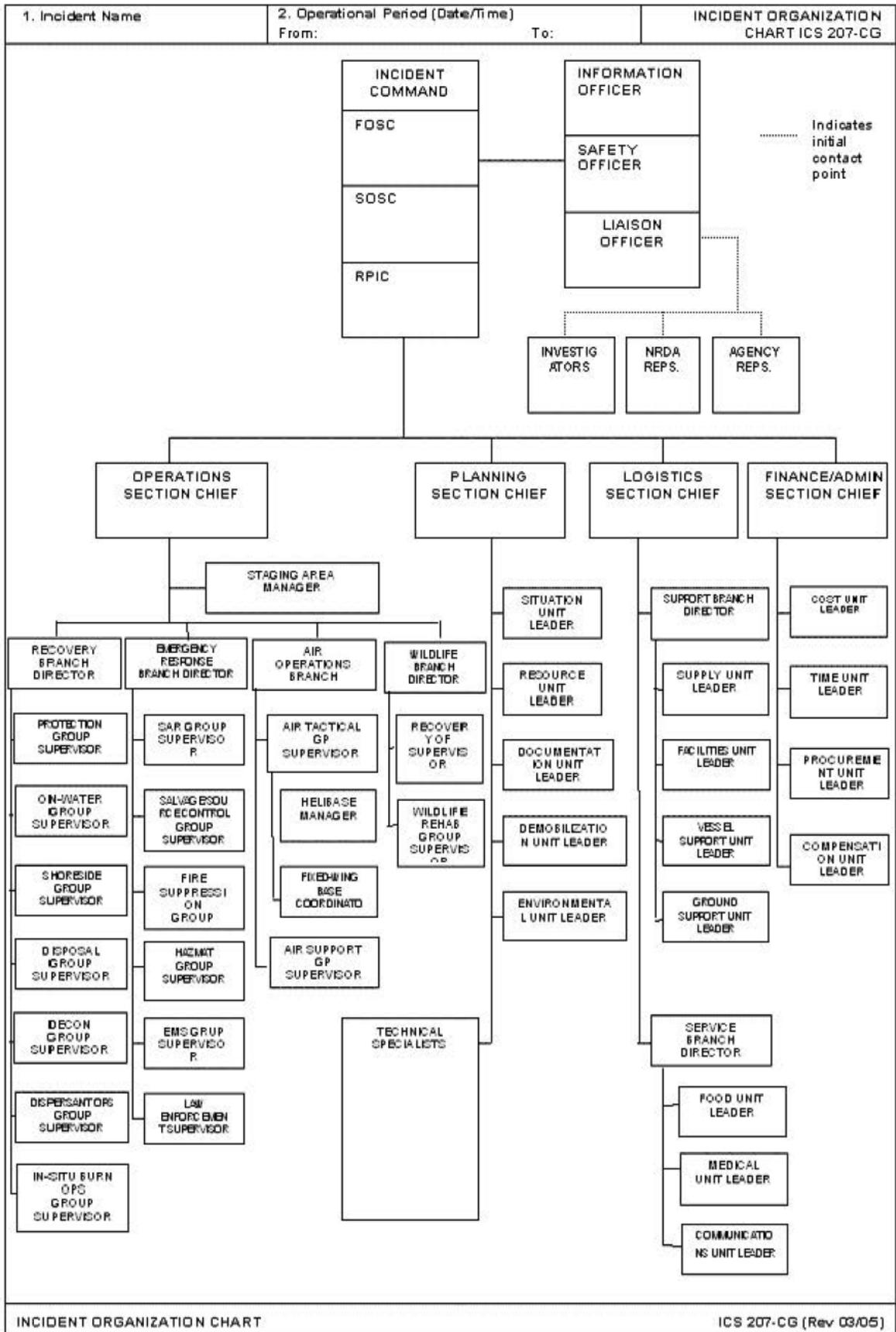
1. Incident Name []	2. Operational Period to be covered by IAP (Date/Time) From: [] To: []	IAP COVER SHEET
3. Approved by:		
FOSC []		
SOSC []		
RPIC []		
[]		
[]		
INCIDENT ACTION PLAN		
The items checked below are included in this Incident Action Plan:		
<input type="checkbox"/> ICS 202-OS (Response Objectives) <hr/>		
<input type="checkbox"/> ICS 203-OS (Organization List) – OR – ICS 207-OS (Organization Chart) <hr/>		
<input type="checkbox"/> ICS 204-OSs (Assignment Lists) One Copy each of any ICS 204-OS attachments:		
<input type="checkbox"/> Map		
<input type="checkbox"/> Weather forecast		
<input type="checkbox"/> Tides		
<input type="checkbox"/> Shoreline Cleanup Assessment Team Report for location		
<input type="checkbox"/> Previous day's progress, problems for location		
<hr/> <input type="checkbox"/> ICS 205-OS (Communications List) <hr/>		
<input type="checkbox"/> ICS 206-OS (Medical Plan)		
<input type="checkbox"/> []		
4. Prepared by: [] Date/Time []		
IAP COVER SHEET		
June 2000		

1. Incident Name [Redacted]	2. Prepared by: (name) [Redacted] Date: [Redacted] Time: [Redacted]	INCIDENT BRIEFING ICS 201-CG
3. Map/Sketch (include sketch, showing the total area of operations, the incident site/area, overflight results, trajectories, impacted shorelines, or other graphics depicting situational and response status) [Redacted]		
4. Current Situation: [Redacted] [Redacted] [Redacted] [Redacted] [Redacted] [Redacted] [Redacted] [Redacted] [Redacted] [Redacted]		

1. Incident Name []	2. Prepared by: (name) [] Date: [] Time: []	INCIDENT BRIEFING ICS 201-CG
3. Current Organization		
<p>Unified Command</p> <p>FOSC [] _____ SOSC [] _____ RPIC [] _____ [] _____ [] _____</p> <p>Safety Officer [] _____ Liaison Officer [] _____ Information Officer [] _____</p> <p>Operations Section [] Planning Section [] Logistics Section [] Finance Section []</p> <p>Div./Group [] _____ Div./Group [] _____ Div./Group [] _____ Div./Group [] _____ Div./Group [] _____</p>		

1. Incident Name █	2. Operational Period (Date/Time) From: █ To: █	INCIDENT OBJECTIVES ICS 202-CG
3. Objective(s) █		
4. Operational Period Command Emphasis (Safety Message, Priorities, Key Decisions/Directions) █		
Approved Site Safety Plan Located at: █		
5. Prepared by: (Planning Section Chief) █	Date/Time █	

1. Incident Name []		2. Operational Period (Date/Time) From: [] To: []		ORGANIZATION ASSIGNMENT LIST ICS 203-CG	
3. Incident Commander(s) and Staff			7. OPERATION SECTION		
Agency	IC	Deputy	Chief	[]	[]
[]	[]	[]	Deputy	[]	[]
[]	[]	[]	Deputy	[]	[]
[]	[]	[]	Staging Area Manager	[]	[]
[]	[]	[]	Staging Area Manager	[]	[]
[]	[]	[]	Staging Area Manager	[]	[]
Safety Officer: []			[]	[]	[]
Information Officer: []			[]	[]	[]
Liaison Officer: []			[]	[]	[]
[]			[]	[]	[]
4. Agency Representatives			a. Branch – Division Groups		
Agency	Name		Branch Director	[]	[]
[]	[]		Deputy	[]	[]
[]	[]		Division Group	[]	[]
[]	[]		Division Group	[]	[]
[]	[]		Division Group	[]	[]
[]	[]		Division/Group	[]	[]
[]	[]		Division/Group	[]	[]
5. PLANNING/INTEL SECTION			b. Branch – Division/Groups		
Chief	[]		[] Branch Director	[]	[]
Deputy	[]		Deputy	[]	[]
Resources Unit	[]		Division/Group	[]	[]
Situation Unit	[]		Division/Group	[]	[]
Environmental Unit	[]		Division/Group	[]	[]
Documentation Unit	[]		Division/Group	[]	[]
Demobilization Unit	[]		Division/Group	[]	[]
Technical Specialists	[]		c. Branch – Division/Groups		
[]	[]		[] Branch Director	[]	[]
[]	[]		[] Deputy	[]	[]
[]	[]		Division/Group	[]	[]
[]	[]		Division/Group	[]	[]
[]	[]		Division/Group	[]	[]
[]	[]		Division/Group	[]	[]
6. LOGISTICS SECTION			d. Air Operations Branch		
Chief	[]		Air Operations Br. Dir	[]	[]
Deputy	[]		Helicopter Coordinator	[]	[]
a. Support Branch			8. FINANCE/ADMINISTRATION SECTION		
Director	[]		Chief	[]	[]
Supply Unit	[]		Deputy	[]	[]
Facilities Unit	[]		Time Unit	[]	[]
Vessel Support Unit	[]		Procurement Unit	[]	[]
Ground Support Unit	[]		Compensation/Claims Unit	[]	[]
[]	[]		Cost Unit	[]	[]
b. Service Branch			[]	[]	[]
Director	[]		[]	[]	[]
Communications Unit	[]		[]	[]	[]
Medical Unit	[]		[]	[]	[]
Food Unit	[]		[]	[]	[]
9. Prepared By: (Resources Unit)			Date/Time		
[]	[]		[]	[]	[]



SITE SAFETY PLAN

I. General

Pump Station Pipeline Spill Spill to Water Excavation Other: _____

Location: _____

Work to be performed: _____

Issuing Date: _____	Time: _____
Temperature: _____ °	Wind Direction: _____
Humidity: _____	

II. Hazards to be Evaluated

				SPECIFIC HAZARDS				
Y	H	Y	H	Y	H			
<input type="checkbox"/>	<input type="checkbox"/>	Oxygen Deficient/Enriched	<input type="checkbox"/>	<input type="checkbox"/>	Ingestion / Skin Absorption	<input type="checkbox"/>	<input type="checkbox"/>	Crude Oil
<input type="checkbox"/>	<input type="checkbox"/>	Flammable Atmosphere (Explosion Fire)	<input type="checkbox"/>	<input type="checkbox"/>	Frostbite	<input type="checkbox"/>	<input type="checkbox"/>	Other* ()
<input type="checkbox"/>	<input type="checkbox"/>	Toxic Atmosphere: _____	<input type="checkbox"/>	<input type="checkbox"/>	Chemical/MSDS # _____ (Must be attached)			
<input type="checkbox"/>	<input type="checkbox"/>	Boat Operations	<input type="checkbox"/>	<input type="checkbox"/>	Physical Hazard _____			
<input type="checkbox"/>	<input type="checkbox"/>	Confined Space	<input type="checkbox"/>	<input type="checkbox"/>	Traffic _____			
			<input type="checkbox"/>	<input type="checkbox"/>	Vapor Cloud			

III. Testing & Monitoring (Check required items)

Tests are to be performed in the order listed.

ACCEPTABLE ENTRY CONDITIONS

Y	N	Continuous	Frequency	ACCEPTABLE ENTRY CONDITIONS		
				19.5 – 23.0% <i>l</i> air	< 19.5% or 23.0% <i>l</i> air	< 16.0 or ≥ 23.5% <i>l</i> air
<input type="checkbox"/>	<input type="checkbox"/>	Oxygen Level	<input type="checkbox"/> Y <input type="checkbox"/> N _____ every _____	< 10% <i>l</i> air	≥ 10.0 but < 20.0% <i>l</i> air	≥ 20.0% <i>l</i> air
<input type="checkbox"/>	<input type="checkbox"/>	LEL	<input type="checkbox"/> Y <input type="checkbox"/> N _____ every _____	< 10 ppm	≥ 10 but < 100 ppm	≥ 100 ppm
<input type="checkbox"/>	<input type="checkbox"/>	Hydrogen Sulfide	<input type="checkbox"/> Y <input type="checkbox"/> N _____ every _____	< 5 ppm	≥ 5 but < 10 ppm	≥ 10 ppm
<input type="checkbox"/>	<input type="checkbox"/>	Benzene	<input type="checkbox"/> Y <input type="checkbox"/> N _____ every _____	< 300 ppm	≥ 300 but < 750 ppm	≥ 750 ppm
<input type="checkbox"/>	<input type="checkbox"/>	Total Hydrocarbons	<input type="checkbox"/> Y <input type="checkbox"/> N _____ every _____			
<input type="checkbox"/>	<input type="checkbox"/>	Other: _____	<input type="checkbox"/> Y <input type="checkbox"/> N _____ every _____			

IV. Required Personal Protective Equipment (Check for required use)

General	Eye Prot.	Respiratory Prot.	Hearing Prot.	Gloves	Footwear	Clothing
<input type="checkbox"/> Hard Hat	<input type="checkbox"/> Safety Glasses	<input type="checkbox"/> SCBA/Air Line w/Escape	<input type="checkbox"/> Ear Plugs	<input type="checkbox"/> Leather	<input type="checkbox"/> Steel-toes	<input type="checkbox"/> FR Coveralls
<input type="checkbox"/> Safety Harness	<input type="checkbox"/> Goggles	<input type="checkbox"/> Air Line	<input type="checkbox"/> Ear Muffs	<input type="checkbox"/> Rubber	<input type="checkbox"/> Rubber	<input type="checkbox"/> Tyvek
<input type="checkbox"/> PFD	<input type="checkbox"/> Face-shield	<input type="checkbox"/> Air Purifying (Full Mask)	<input type="checkbox"/> Combination	<input type="checkbox"/> Nitrile	<input type="checkbox"/> Hip-boots	<input type="checkbox"/> Coated Tyvek
	<input type="checkbox"/> Tinted Lens	Cartridge Type: <input type="checkbox"/> OV	<input type="checkbox"/> Hepa-OV	<input type="checkbox"/> PVC	<input type="checkbox"/> _____	<input type="checkbox"/> Saranynx

Any other special PPE: _____

V. Emergency Information and Rescue Services

Emergency Contact Person: _____ Contact by: _____

Fire Department: _____ Contact by: _____

Ambulance: _____ Contact by: _____

Hospital: _____ Contact by: _____

Rescue Services: _____ Contact by: _____

(if not provided by above)

VI. Required Safety & Rescue Equipment (on site)

<input type="checkbox"/> Lights	<input type="checkbox"/> Fall Protection	<input type="checkbox"/> First Aid Kit	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Fire Extinguisher	<input type="checkbox"/> Tripod	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Ladder	<input type="checkbox"/> Retrieval Lines	<input type="checkbox"/> Resuscitator	<input type="checkbox"/> Communication Method _____			

VII. Comments or Special Work Procedures

VIII. Report All Injuries Immediately

IX. Control Measures

<ul style="list-style-type: none"> Isolation & Lockout (identify items to be locked out) 	<ul style="list-style-type: none"> Ventilation <input type="checkbox"/> Natural <input type="checkbox"/> Mechanical
<ul style="list-style-type: none"> Establish Work Zones when completed 	<ul style="list-style-type: none"> Continuous <input type="checkbox"/> No <input type="checkbox"/> Yes
<input type="checkbox"/> Hot Zone = Red Ribbon	<ul style="list-style-type: none"> Flagman / Watchman <input type="checkbox"/>
<input type="checkbox"/> Warm Zone = Yellow Ribbon	<ul style="list-style-type: none"> Confined Space – Safety Watch <input type="checkbox"/>
<input type="checkbox"/> Cold Zone = Blue Ribbon	<ul style="list-style-type: none"> Evacuation Routes – (Identify on Map)
	<input type="checkbox"/> Air Horn – Emergency
	<input type="checkbox"/> Primary Route
	<input type="checkbox"/> Secondary Route

X. Monitoring Results	Zone								
	Time								
Oxygen	Level								
	By								
LEL	Time								
	Level								
	By								
	Time								
Hydrogen Sulfide	Level								
	By								
	Time								
	Level								
Benzene	By								
	Time								
VOC	Level								
	By								
	Time								
	Level								
	By								
	Time								
	Level								
	By								
	Time								
	Level								
	By								
	Time								
	Level								
	By								

Equipment: Type: _____ Mfger: _____ Calibration / Expiration: _____
 Type: _____ Mfger: _____ Calibration / Expiration: _____

6.0 SPILL IMPACT CONSIDERATIONS

- 6.1 [Critical Areas to Protect](#)
- 6.2 [Environmental/Socio-Economic Sensitivities](#)
- 6.3 [Fisheries and Wildlife Protection](#)
- 6.4 [Staging Areas](#)
- 6.5 [Containment and Recovery of Spilled Product](#)
- 6.6 [Vulnerability Analysis](#)
- 6.7 [Alternative Response Strategies](#)

Figure 6.1 [On-Water Response Flowchart](#)

Figure 6.2 [Environmental Sensitivity Maps](#)

-

Figure 6.3 [Endangered/Threatened Species Listing](#)

6.1 CRITICAL AREAS TO PROTECT

The critical areas to protect are classified as high, moderate, and low sensitivity to oil for non-coastal/inland environments. The Federal, State, and Local authorities will further clarify these categories at the time of the response. The categories are defined as follows:

HIGH SENSITIVITY

- Areas which are high in productivity, abundant in many species, extremely sensitive, difficult to rehabilitate, or inhabited by threatened/endangered species.
- Areas which consist of forested areas, brush/grassy areas, wooded lake areas, freshwater marshes, wildlife sanctuaries/refuges, and vegetated river/stream banks.

MODERATE SENSITIVITY

- Areas of moderate productivity, somewhat resistant to the effects of oiling.
- Areas which consist of degraded marsh habitat, clay/silt banks with vegetated margins, and gravel/cobble beaches.

LOW SENSITIVITY

- Areas of low productivity, man-made structures, and/or high energy.
- Areas which consist of gravel, sand, or clay material, barren/rocky riverbanks and lake edges, man-made structures, and concrete/compacted earthen drainage ditches.

6.2 ENVIRONMENTAL/SOCIO-ECONOMIC SENSITIVITIES

Environmental/Socio-economic sensitivities are of extreme importance when planning a response effort. The health and safety of the public and the environment, as well as the protection of the various socio-economic sensitivities, must be promptly addressed in order to mitigate the extent of damage and minimize the cost of the clean-up effort.

The Company will explore, where appropriate, equivalent environmental protection systems, methods, devices, or technologies that maintain or may be less damaging to the character of heritage resources or archeological sites. If a release from the pipeline impacts a heritage resource, the Company will respond as outlined in Section 3.0, report to the appropriate authority prescribed by law, cleanup and restore the area as required by regulation, and conduct such sampling, analyses, or associated monitoring during and after restoration.

All environmental/socio-economic sensitivities are worthy of protection, but must be prioritized during a response effort. When making decisions on which areas to designate as collection areas and which to protect, the following sources may be consulted:

- U.S. Fish and Wildlife Service and related state agencies
- Applicable Area Contingency Plans
- Other industry and private experts

The environmental and socio-economic sensitivities in the vicinity of the Pipeline have been broken down into specific categories and identified in this Section. To further clarify the location of the sensitive areas of concern, references to published Area Contingency Plans and Environmental Sensitivity Maps are also provided in this section.

6.3 FISHERIES AND WILDLIFE PROTECTION

The Company will work with Federal, State, and local agency personnel to provide labor and transportation to retrieve, clean, and rehabilitate birds and wildlife affected by an oil spill, as necessary. Oversight of the Company's wildlife preservation activities and coordination with Federal, State, and Local agencies during an oil spill is the responsibility of the Incident Commander.

Protecting fish habitat (e.g. spawning and rearing grounds) is important to both consumers and commercial fisheries. Beyond typical response strategies, other options could include moving floating facilities, temporarily sinking facilities using cages designed for this purpose, temporary suspension of water intakes, or closing sluice gates to isolate the facilities from contamination.

Special consideration should be given to the protection and rehabilitation of endangered species and other wildlife and their habitat in the event of an oil spill and subsequent response. Jurisdictional authorities should be notified and worked with closely on all response/clean-up actions related to wildlife protection and rehabilitation. Laws with significant penalties are in place to ensure appropriate protection of these species.

Wildlife Rescue

The Company will work with Federal, Province/State, and Local agency personnel to provide labor and transportation to retrieve, clean, and rehabilitate wildlife affected by an oil spill, as the situation demands.

The following are items which should be considered for wildlife rescue and rehabilitation during a spill response:

- Bird relocation can be accomplished using a variety of deterrents, encouraging birds to avoid areas of spilled oil. Bird relocation can be accomplished by utilizing deterrent methods including:
 - Use of visual stimuli, such as inflatable bodies, owls, stationary figures, or helium balloons, etc.
 - Use of auditory stimuli, such as propane cannons, recorded sounds, or shell crackers.
 - Use of herding with aircraft, boats, vehicles, or people (as appropriate). Use of capture and relocation.

Search and Rescue - Points to consider

- **The Company's involvement should be limited to offering assistance as needed or requested by the agencies.**
- Prior to initiating any organized search and rescue plan, **authorization must be obtained from the appropriate Federal/State agency.**
- **Initial search and rescue efforts, if needed, should be left up to the appropriate agencies.** They have the personnel, equipment, and training to immediately begin capturing contaminated wildlife.
- With or without authorization, it must be anticipated that volunteer citizens will aid distressed/contaminated wildlife on their own. It is important to communicate that it may be illegal to handle wildlife without express authority from appropriate agencies. Provisions should be made to support an appropriate rehabilitator; however, **no support should be given to any unauthorized volunteer rescue efforts.**
- The regulatory agencies and response personnel should be provided the name and location of a qualified rehabilitator in the event contaminated wildlife is captured.
- Resources and contacts that can assist with wildlife rescue and rehabilitation are provided in Section 2.0. This list includes:
 - Outside rehabilitation organizations
 - Local regulatory agencies
 - Other resources

6.4 STAGING AREAS

When establishing personnel and equipment staging areas for a response to a Pipeline discharge, the following criteria should be evaluated:

- Access to waterborne equipment launching facilities and/or land equipment.
- Access to open space for staging/deployment of heavy equipment and personnel.
- Access to public services utilities (electricity, potable water, public phone, restroom and washroom facilities, etc.).
- Access to the environmental and socio-economically sensitive areas which are projected for impact.

6.5 CONTAINMENT AND RECOVERY OF SPILLED PRODUCT

General descriptions of various specific response techniques that may be applied during a response effort are discussed below. Company responders are free to use all or any combination of these methods as incident conditions require, provided they meet the appropriate safety standards and other requirements relative to the situation encountered. Data was obtained from reports, manuals and pamphlets prepared by the American Petroleum Institute, Environmental Protection Agency, and the United States Coast Guard. The most effective cleanup of a product spill will result from an integrated combination of clean-up methods. Each operation should complement and assist related operations and not merely transfer spillage problems to areas where they could be more difficult to handle.

The spill should be assessed as soon as possible to determine the source, extent and location of travel. Terrain and other physical conditions downgradient of the spill site will determine the methods of control at a point in advance of the moving product. Often, the bulk of a spill can be contained at a single location or a few key locations in the immediate vicinity of the source point. When possible, the execution of this type of initial containment strategy helps confine a spill to a relatively limited area.

Spill on Land (Soil Surfaces)

• Confinement Methods

Product can be trapped in ditches and gullies by earth dams. Where excavating machinery is available, dams can be bulldozed to contain lakes of product. Dams, small and large, should be effectively employed to protect priority areas such as inlets to drains, sewers, ducts and watercourses. These can be constructed of earth, sandbags, absorbents, or any other effective method. If time does not permit a large dam, many small ones can be made, each one holding a portion of the spill as it advances. The terrain will dictate the placement of the dams. If the spill is minor, natural dams or earth absorption will usually stop the product before it advances a significant distance. Cleanup is the main concern in such situations.

In situations where vapors from a spill present a clear and present danger to property or life (possible ignition because of passing automobiles, nearby houses, or work vehicles approaching the area), spraying the surface of the spill with dispersant will greatly reduce the release of additional vapors from the product. This method is especially adapted to gasoline spills on soil surfaces.

Prior to the use of dispersant agents, ensure that permission has been granted by government authorities and local landowner. Local government authorities to be contacted may include city council, county board of commissioners, city or county fire chiefs, the county forestry commission or firetower, and the local environmental protection agency. In seeking permission from these authorities, be prepared to convince them that adequate safety precautions have been and will be taken during the operation.

• Removal Methods

The recovery and removal of free product from soil surfaces is a difficult job. The best approaches at present seem to be:

- Removal with suction equipment to tank truck if concentrated in volumes large enough to be picked up. Channels can be formed to drain pools of product into storage pits. The suction equipment can then be used.
- Small pockets may have to be dipped up by hand.

Spill in Nearshore Urban Areas

Oil spills in urban areas can greatly impact recreational use, human health, wildlife habitat(s), and potential beach or park closures. Manmade structures along waterways require unique protection strategies. Manmade structures could include vertical shore protection structures such as seawalls, piers, and bulkheads, as well as riprap revetments and groins, breakwaters, and jetties. Vertical structures can be constructed of concrete, wood, and corrugated metal. They usually extend below the water surface, although seawalls can have beaches or riprap in front of them. These structures are very common along developed shores, particularly in harbors, marinas, and residential areas.

The range in degree of exposure to waves and currents varies widely, from very low in dead-end canals, to very high on offshore breakwaters. Boat wakes can generate wave energy in otherwise sheltered areas.

Maintaining shipping or other kinds of vessel traffic through navigation channels or waterways during a spill response is a difficult consideration because there is usually economic and political pressure to re-establish normal operations as soon as possible. For these reasons, recovery efforts must be coordinated through the Unified Command to ensure the cooperation of all parties involved.

- **Confinement Methods**

In harbor areas, oil can often be contained by a vessel of opportunity or a dedicated Oil Spill Response Vessel (OSRV) using containment booms and skimmers. Optimum conditions for recovery operations would be with currents of 3 knots or less. The facility could also deploy boom from shore to contain and concentrate product in the vicinity of the release point until the product can be removed.

Spill on Small to Medium Size Streams (Fast-Flowing Creeks)

• Confinement Methods

The techniques used for product containment on fast-flowing shallow streams are quite different from the ones used on lakes, ponds, or other still bodies of water. The containment and removal processes require a calm stretch of water to allow the product to separate onto the surface of the water. If a calm stretch of water does not exist naturally, a deep slow-moving area should be created by damming. The dam can be constructed by using sandbags, planks or earth. If a dam is required, it should be situated at an accessible point where the stream has high enough banks. The dam should be constructed soundly and reinforced to support the product and water pressure.

- Underflow dam - The underflow dam is one method that can be used, especially on small creeks. The water is released at the bottom, of the dam using a pipe or pipes which are laid during construction of the dam. The flow rate through the pipe must be sufficient to keep the dam from overflowing. One method is to lay the pipe at an angle through the dam (while dam is being constructed) so that the height of the downstream end of the pipe will determine the height the water will rise behind the dam.
- Overflow dam - Another method of containment is the overflow type dam. The dam is constructed so that water flows over the dam, but a deep pool is created which slows the surface velocity of the water. Therefore, the condition of a calm stretch of water is met. The overflow dam may be used where larger flow rates (medium size creeks) of water are involved.

With this type dam, a separate barrier (floating or stationary boom) must be placed across the pool created by the dam. The separate barrier arrests the surface layer of product. At the same time, the water is flowing under the barrier and over the top of the dam. The barrier should be placed at an angle of 45 % across the pool to decrease the effective water velocity beneath it. Also, it helps to concentrate the product at the bank and not all along the barrier. A second barrier should be placed approximately 10 to 15 feet downstream of the first one as a secondary back-up.

The stationary boom type barrier should be made of wood planks or other suitable material. The stationary boom should be soundly constructed and sealed against the bank. The ends of the planks can be buried in the banks of the stream and timber stakes driven into the stream bed for support as needed. The necessary length of the boom will be approximately 1-1/2 times the width of the waterway.

The plank boom should extend six to eight inches deep into the water and about two inches or higher above the water level. If the increase in velocity under the stationary boom is causing release of trapped product, it should be moved upward slightly. At no time should barrier be immersed more than 20% of the depth of the pool at the barrier location; that is, if the pool created by damming is three feet deep, do not exceed an immersion depth of seven inches with the barrier at the position the barrier is installed.

Another method used with the underflow dam is having the pipe or pipes sized to carry only a portion of the flow needed. The pipe would be placed at the bottom of the dam and level with the creek bed. The remaining flow of the creek could be siphoned or preferably pumped around the dam from a point away from the dam and from the deepest portion of the pool. The pumping or siphoning can be controlled to maintain the desired water level at the dam. The key is the removal of water through or around the dam at the lowest point in the basin. This prevents the oil from escaping with the released water.

A floating boom can be used in place of the stationary type if the created pool's size (bank to bank) and depth will permit. Since changing the depth and/or length of a standard floating boom in a small stream is difficult, the use of the stationary type permits adjustments to be made in depth to provide for a better separation of product and water. The advantages of using a floating boom are the speed of deployment and the fact that there is no need for additional support as with the stationary boom.

- Multiple Impoundments - Since emergency built dams (either underflow or overflow) are seldom perfect, a series of dams is usually required. The first one or two will trap the bulk and the ones that are downstream will trap the last traces of product. Precautions should be taken to ensure that the foundations of emergency dams are not washed away by the released water. If earth is used to construct an overflow dam, a layer of earth-filled bags should be placed on top of the dam so erosion will not take place.

- **Removal Methods**

Once the containment dams are constructed, the problem or removal of the product from the water surface should be the prime consideration. The removal must be continuous or else build-up of product behind the dams or booms might lead to product escaping the traps.

The type of removal procedures used depends largely on the amount of product being trapped in a given span of time, if the amount of product moving down the stream is of sufficient quantity, the first dam or fixed boom would quite possibly trap enough for the floating skimmer to work efficiently. The skimmer will pump the product and possibly some water to a tank truck or other holding tank. Separated water may be released from the bottom of the tank truck if it becomes necessary. The absorbents could then be used at downstream dams or booms. It is inadvisable to place an absorbent in the stream prior to or at the first dam in anticipation of the arriving product. Let the product accumulate at the first dam and use the floating skimmer to recover the product.

Disposal of gross amount of product-soaked absorbent would not then be a problem. Follow directions on use of each absorbent. Some are designed to be placed on water before product arrives; others are intended only to be placed on the product after it accumulates on the water. Plastic sheets should be used to place the product-soaked absorbent on as it is hand skimmed from the water. Alternatively, the material may be placed in drums or lined roll-off boxes.

The containment and removal of spilled product on small to medium fast-flowing streams might require a combination of underflow or overflow dams, fixed booms, skimmers, and absorbents, to ensure a complete cleanup.

Spill on Lake or Pond (Calm or Slow-Moving Water)

• Confinement Methods

A lake or pond offers the best conditions for removal of product from water. Although the removal is no easy task, the lake or pond presents the favorable conditions of low or no current and low or no waves.

The movement of product on a lake or pond is influenced mainly by wind. The product will tend to concentrate on one shore, bank or inlet. Booms should be set up immediately to hold the product in the confined area in the event of a change in wind direction.

If the spill does not concentrate itself on or near a shore (no wind effect), then a sweeping action using boats and floating booms will be necessary.

The essential requirement for this operation is that it be done very slowly. The booms should be moved at not more than 40 feet per minute. Once the slick is moved to a more convenient location (near shore), the normal operations of removal should begin.

If the slick is small and thin (rainbow effect) and not near the shoreline, an absorbent boom instead of a regular boom should be used to sweep the area very slowly and absorb the slick. The product may not have to be moved to the shoreline.

• Removal Methods

If the confined slick is thick enough, regular suction equipment may be used first; however, in most instances, a floating skimmer should be used.

If the floating skimmer starts picking up excess water (slick becomes thin), drawing the boom closer to the bank as product is removed will also keep film of product thicker. However, when the slick becomes too thin, the skimmer should be stopped and an absorbent applied (with a boat if necessary) to remove the final amounts. The floating skimmer (if speed is a must) or hand skimmers (if water is shallow enough) or both can be used to pick up the product-soaked absorbent. Before pumping the product-soaked absorbent with a floating skimmer, ensure that the absorbent in question can be pumped and will not harm the pump. Several types are nonabrasive to pump internals. If the floating skimmer is used first, the product-soaked absorbent/water mixture should be pumped into a tank truck.

A better method of retrieving the product-soaked absorbent is to draw it in as close to the shore as possible with the booms used to confine the product initially. The absorbent can then be hand skimmed from the water surface and placed in drums, on plastic sheets or in lined roll-off boxes. It should then be disposed of by acceptable means.

The final rainbow on the surface can be removed with additions of more absorbent.

Spill on Large Streams and Rivers

• Confinement Methods

The containment techniques differ considerably on large streams and rivers versus small streams. First, the smooth calm area of water necessary for product-water separation must be found along the stream or river rather than making one as with small streams. Floating booms (rather than fixed booms or dams) must be used to trap the surfaced product.

Local conditions of current and wind must be considered when selecting the site for the boom. A point with a low water velocity near the bank, sufficient depth to operate the product removal equipment, and good access are required. The fact that wind may tend to concentrate the product against one bank must be considered. A smooth, undisturbed area of water is required immediately upstream of the boom to ensure that the product has opportunity to separate out onto the surface. The boom should be positioned where the current is at a minimum. It is more effective to boom at a wide, slow position than on a narrow, fast stretch of water.

If the current of the entire river is 1/2 knot (0.8 ft/sec) or less, then a boom can be positioned straight across the river or large stream, but angled slightly in relation of the banks. By placing the boom at an angle to the banks, product on the surface is diverted along the boom to the side of the river.

The current velocity is usually much slower near the river bank than in the center and the product will move along the boom toward the bank for removal. A water-tight seal between the bank and the boom is essential. A secondary boom should be set up immediately downstream of the first one to capture the amounts that escape the upstream boom. A boom can be employed parallel to the river flow at the bank to form the seal with the booms used to trap the product.

Where the current velocity of the chosen site exceeds 1/2 knot, the boom should be positioned in two smooth curves from a point of maximum velocity (usually the center of the river) to both banks. However, this double-boom required product to be removed from both sides of the river. To determine the appropriate angle of boom placement and support (mooring) needed to hold the booms in position, the current velocity should be measured by timing a floating object which is 80% submerged over a distance of 100 feet. A time of 60 seconds over this distance indicates a water current of approximately 1 knot.

For currents from 1 to 2.5 knots (1.7 to 4.2 ft./sec.), the more the boom will have to be angled acute to the bank. The length of the boom will have to be such to reach the center of the river. For currents between 1/2 and 1 knot (0.8 and 1.7 ft./sec.), the angle of employment can be enlarged.

The major load on the boom is taken by the terminal moorings, particularly the one in the center of the river. However, intermediate moorings are also required both to maintain the smooth curve of the boom to prevent breaking of the boom and to assist with preventing skirt deflection. The intermediate moorings are preferably positioned every 25 feet and must be adjusted to avoid the formation of indentations in the boom profile. These trap product in pockets, prevent its deflection to the bank, and also encourage diving currents. The moorings' ropes should be five times the water depth.

In certain situations, it might be advantageous to position booms to deflect the approaching spilled product to a slower moving area. Naturally, additional booms would have to be positioned around this slower moving area prior to deflecting the product to the area. This approach has been used along river which has lagoons, etc., with a very low current action. The recovery would take place in the lagoons and not along the river bank.

- **Removal Methods**

The product collected upstream of the floating booms in a large stream or river should be removed from the water surface as it accumulates. Regular suction equipment, a floating skimmer, and/or absorbents (including absorbent booms) should be used to remove the product as appropriate to the quantity being trapped in a given span of time. If the amount moving down the stream is of sufficient quantity, the primary floating boom would possibly trap enough for the floating skimmer to work efficiently. The skimmer will pump the product and some water to a tank truck or other holding tank.

The absorbents would then be used upstream of the secondary boom to absorb the underflow from the primary boom. An absorbent boom can also be placed between the primary and secondary booms to help the other absorbents control the underflow from the primary boom.

It is best to hand skim the saturated absorbents and place on plastic sheets. However, if the absorbent used can be pumped after product absorption and speed of removal is a necessity, the floating skimmer can be used to remove the product-soaked absorbent.

The disadvantage of pumping the product-soaked absorbent to a truck is the volume that will accumulate (skimmer will pump excess water) and the disposal problems associated with the large water/product-soaked absorbent mixture.

Spill on Stream which Flows into Lake or Pond

In certain locations where streams (small and large ones) flow into lakes or ponds at relatively short distances, it is conceivable that a spill could reach the lake before containment and recovery operations are set up. If time permits for containment operations to be set up on the stream in question, it then would be handled as described above depending upon the stream size involved.

However, if product in the stream is near the lake site or if product is flowing into the lake with a significant amount yet to arrive, a different containment should be employed.

- **Confinement Methods**

Product on a stream flowing into a lake should be boomed as close to the entrance as possible. The boom should be positioned on the lake at an angle to the residential stream current so as to direct the surface water to a slower moving area. The area where the product is being deflected should be enclosed by booms to contain it. An additional boom for sweeping the product to the bank will be required. This area of containment should not have a current velocity of more than 1/2 knot (0.8 ft./sec.), preferably less.

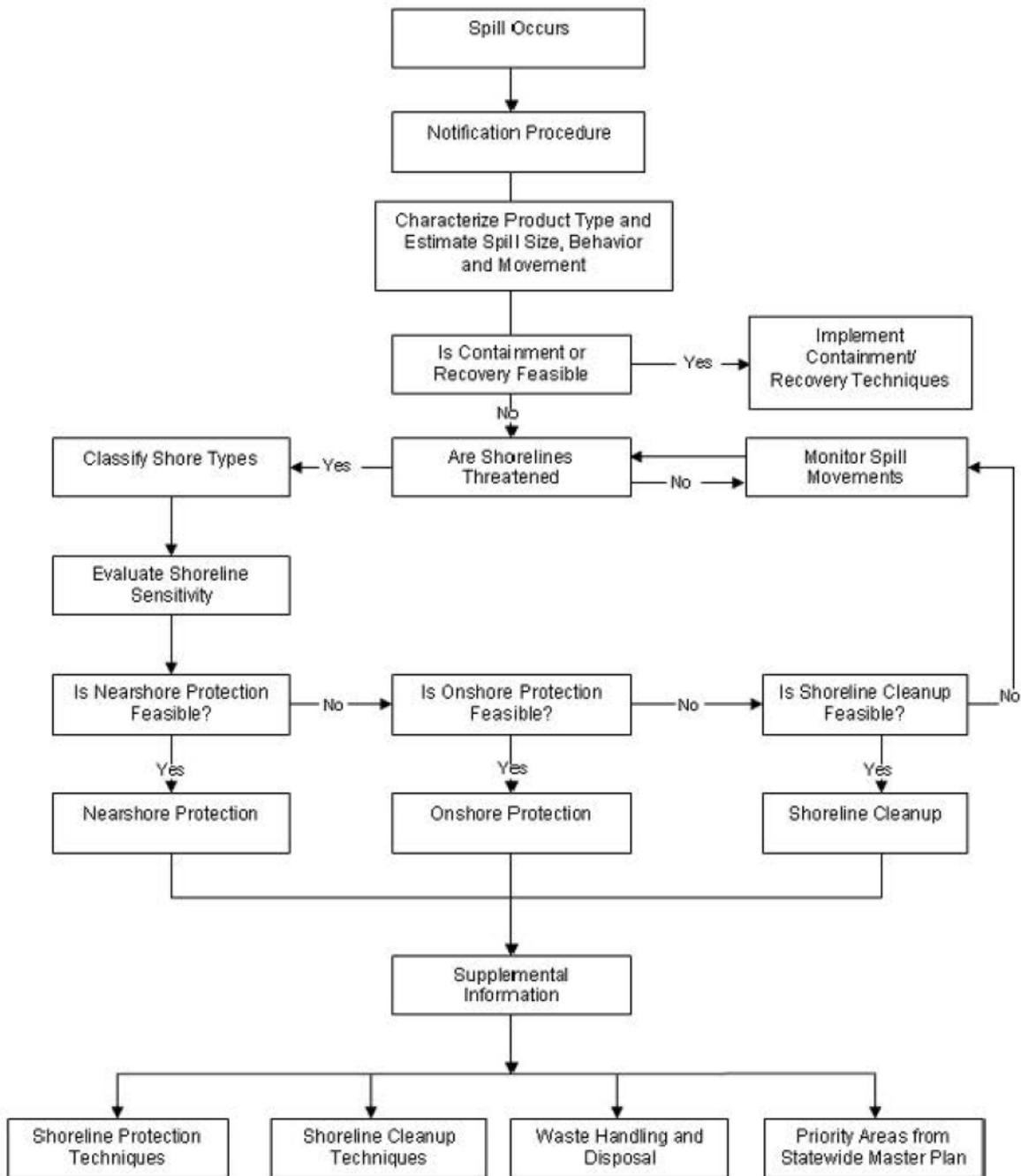
- **Removal Methods**

The removal of product from the lake or pond's surface would be handled as described earlier.

For sizable releases, collected product will usually be pumped into tank trucks and transported to a storage facility. Tank trucks are available at several locations throughout.

FIGURE 6.1

ON-WATER RESPONSE FLOWCHART



6.6 VULNERABILITY ANALYSIS

The thorough examination of published Area Contingency Plans (ACPs) was conducted to identify sensitive areas in all the response zones.

The Environmental Sensitivity Maps located in Figure 6.2 identify sensitive areas along the Pipeline. The appropriate Area Contingency Plan maps are also included to provide more detailed information on sensitivities and possible potential response options.

6.7 ALTERNATIVE RESPONSE STRATEGIES

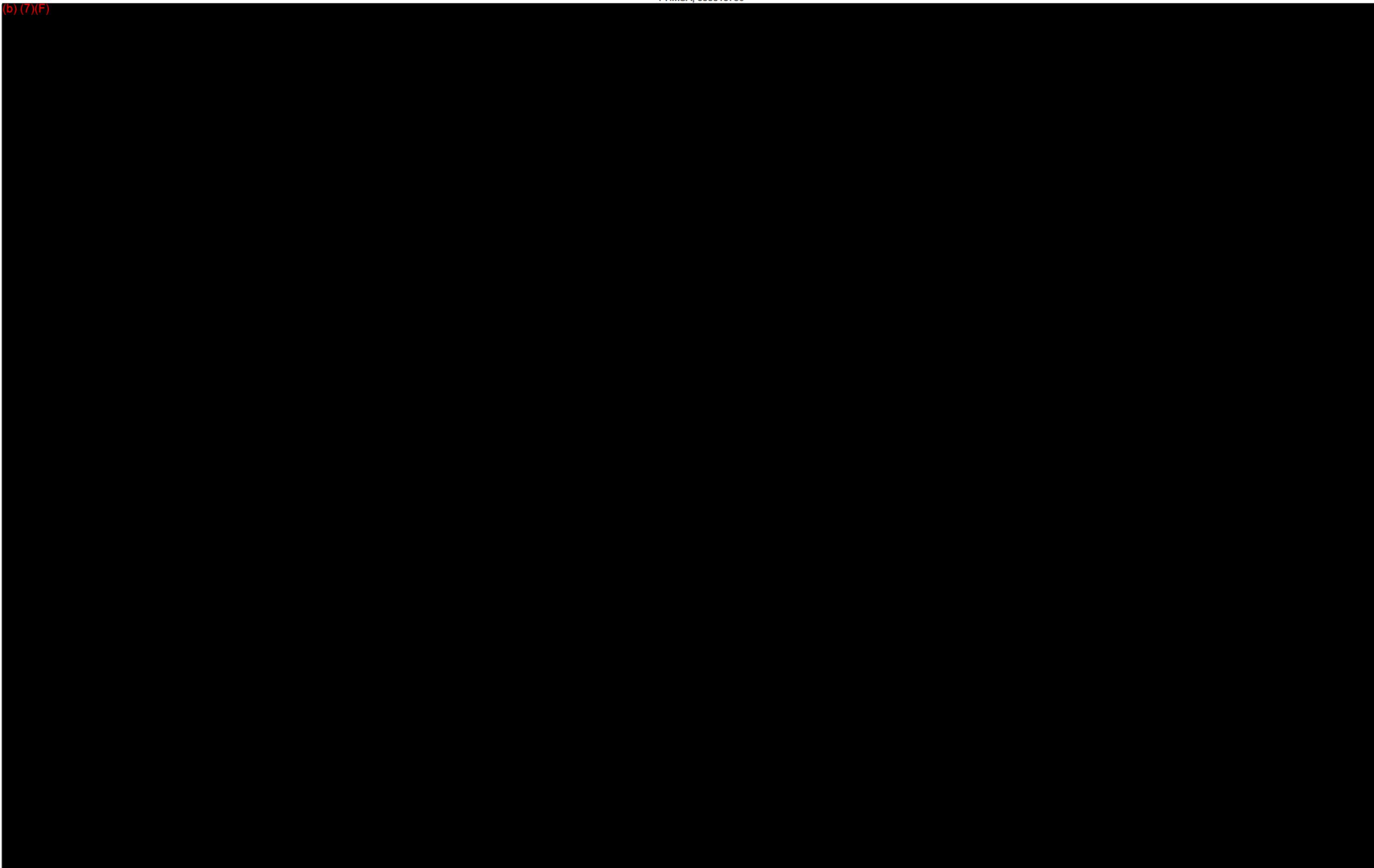
There are no pre-approved response options for inland spills within the United States. Any plans to use dispersants or in situ burn by the Company will be submitted to the Federal On-Scene Coordinator for Regional Response Team approval prior to such action being taken.

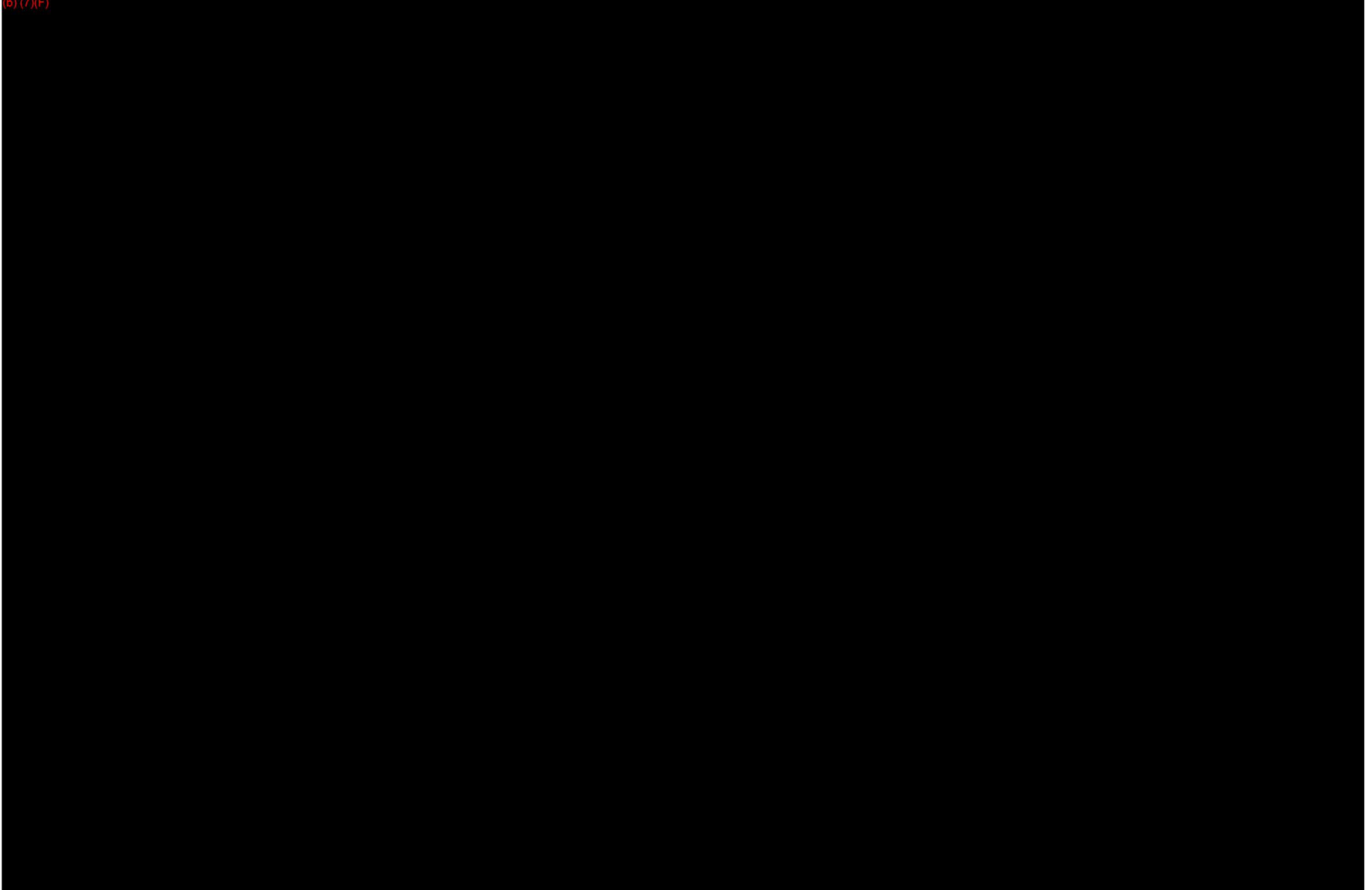
FIGURE 6.2
ENVIRONMENTAL SENSITIVITY MAPS

ESM Index Map	ESM 1	ESM 2
ESM 3	ESM 4	ESM 5
ESM 6	High Consequence Area Maps (Under Development)	Galveston Bay Index Map
Galveston Bay Base Map	Crosby Base Map	Moss Bluff Base Map
Shiloh Base Map	Settegast Map 23	Settegast Map 23 Data
Jacinto City Map 22	Jacinto City Map 22 Data	Highlands Map 21
Highlands Map 21 Data, Page 1	Highlands Map 21 Data, Page 2	Mont Belvieu Base Map
Cove Map 20	Cove Map 20 Data, Page 1	Cove Map 20 Data, Page 2
Anahuac Map 19	Anahuac Map 19 Data, Page 1	Anahuac Map 19 Data, Page 2
Monroe City Base Map	Stowell Base Map	Park Place Map 29
Park Place Map 29 Data	Pasadena Map 28	Pasadena Map 28 Data
La Porte Map 27	La Porte Map 27 Data, Page 1	La Porte Map 27 Data, Page 2
Morgans Point Map 26	Morgans Point Map 26 Data, Page 1	Morgans Point Map 26 Data, Page 2
Umbrella Point Map 25	Umbrella Point Map 25 Data	Oak Island Map 24
Oak Island Map 24 Data, Page 1	Oak Island Map 24 Data, Page 2	Oyster Bayou Base Map
Stanolind Reservoir Base Map	Friendswood Base Map	League City Map 35
League City Map 35 Data, Page 1	League City Map 35 Data, Page 2	Bacliff Map 34
Bacliff Map 34 Data, Page 1	Bacliff Map 34 Data, Page 2	Smith Point Map 33
Smith Point Map 33 Data, Page 1	Smith Point Map 33 Data, Page 2	Lake Stephenson Map 32
Lake Stephenson Map 32 Data, Page 1	Lake Stephenson Map 32 Data, Page 2	Frozen Point Map 31
Frozen Point Map 31 Data, Page 1	Frozen Point Map 31 Data, Page 2	High Island Map 30
High Island Map 30 Data, Page 1	High Island Map 30 Data, Page 2	Dickinson Base Map
Texas City Map 39	Texas City Map 39 Data, Page 1	Texas City Map 39 Data, Page 2
Port Bolivar Map 38	Port Bolivar Map 38 Data, Page 1	Port Bolivar Map 38 Data, Page 2
Flake Map 37	Flake Map 37 Data, Page 1	Flake Map 37 Data, Page 2
Caplen Map 36	Caplen Map 36 Data, Page 1	Caplen Map 36 Data, Page 2
Mustang Bayou Base Map	Hitchcock Map 43	Hitchcock Map 43 Data, Page 1

Hitchcock Map 43 Data, Page 2	Virginia Point Map 42	Virginia Point Map 42 Data, Page 1
Virginia Point Map 42 Data, Page 2	Galveston Map 41	Galveston Map 41 Data, Page 1
Galveston Map 41 Data, Page 2	The Jetties Map 40	The Jetties Map 40 Data, Page 1
The Jetties Map 40 Data, Page 2	Hoskins Mound Map 47	Hoskins Mound Map 47 Data, Page 1
Hoskins Mound Map 47 Data, Page 2	Sea Isle Map 46	Sea Isle Map 46 Data, Page 1
Sea Isle Map 46 Data, Page 2	Lake Como Map 45	Lake Como Map 45 Data, Page 1
Lake Como Map 45 Data, Page 2	South of Galveston Map 44	South of Galveston Map 44 Data
Christmas Point Map 49	Christmas Point Map 49 Data, Page 1	Christmas Point Map 49 Data, Page 2
San Luis Pass Map 48	San Luis Pass Map 48 Data	South of Christmas Point Map 50
South of Christmas Point Map 50 Data		

(b) (7)(F)

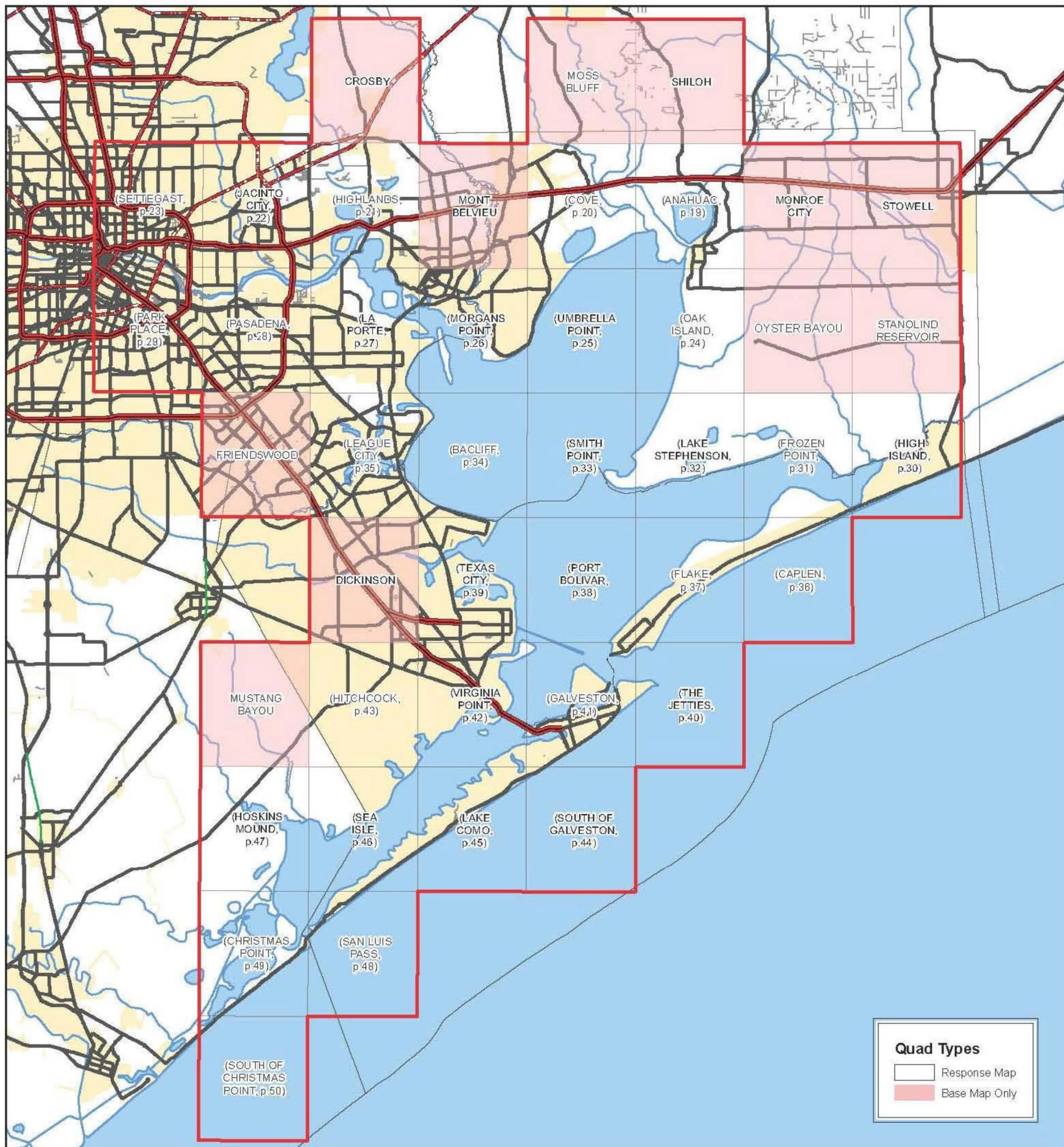




High Consequence Area Maps

(Under Development)

Galveston Bay System Index Map



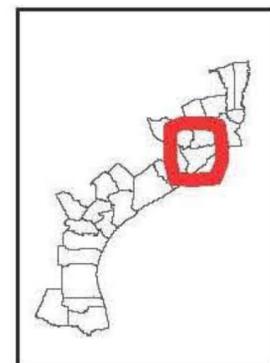
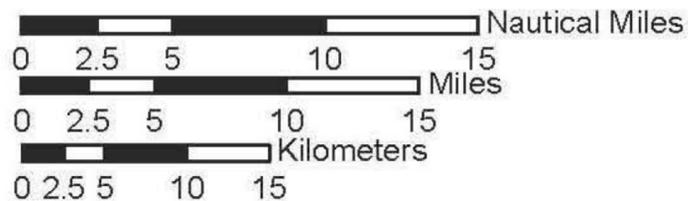
Quad Types

- Response Map
- Base Map Only

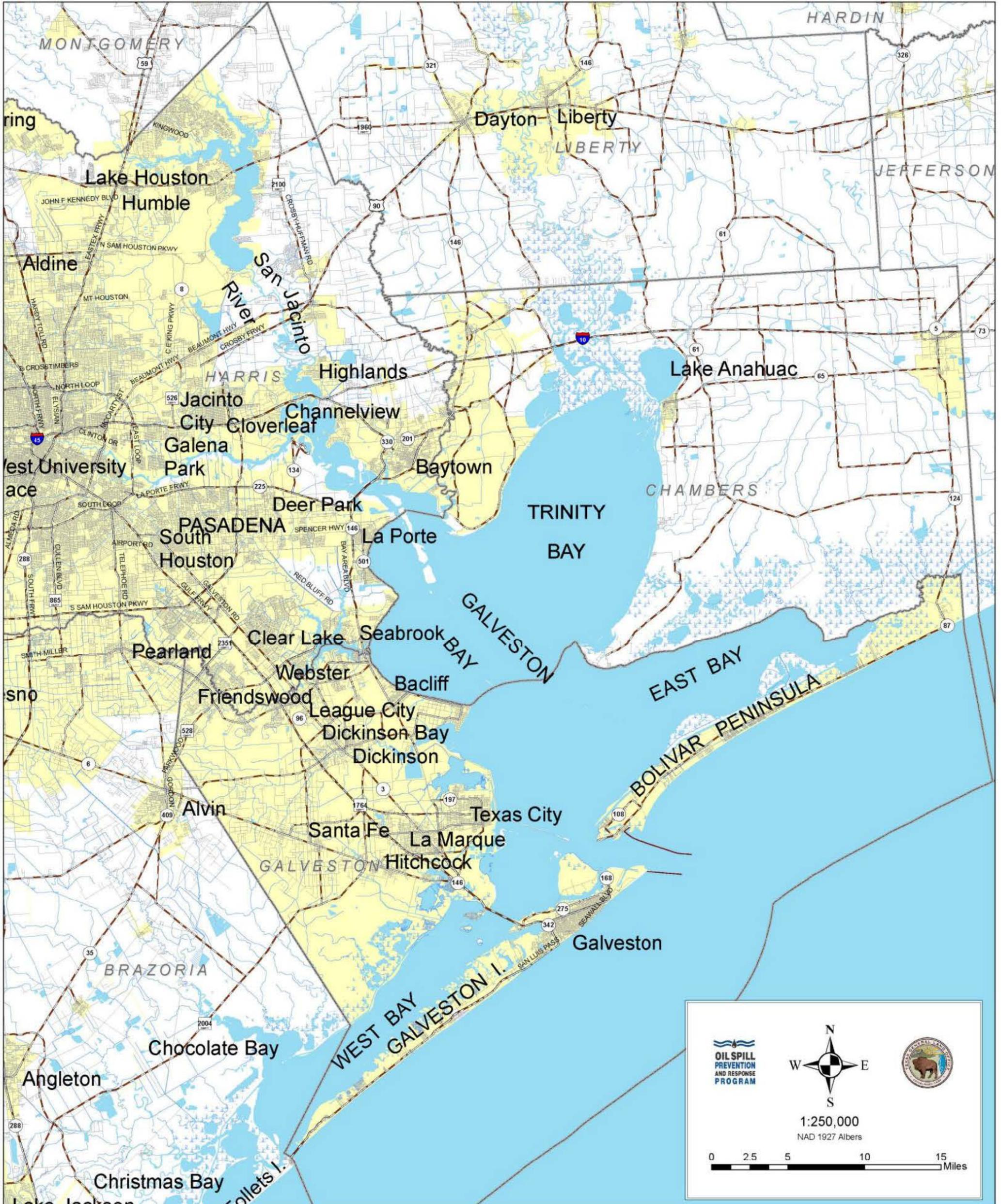
1:600,000



**OIL SPILL
PREVENTION
AND RESPONSE
PROGRAM**



Galveston Bay Area

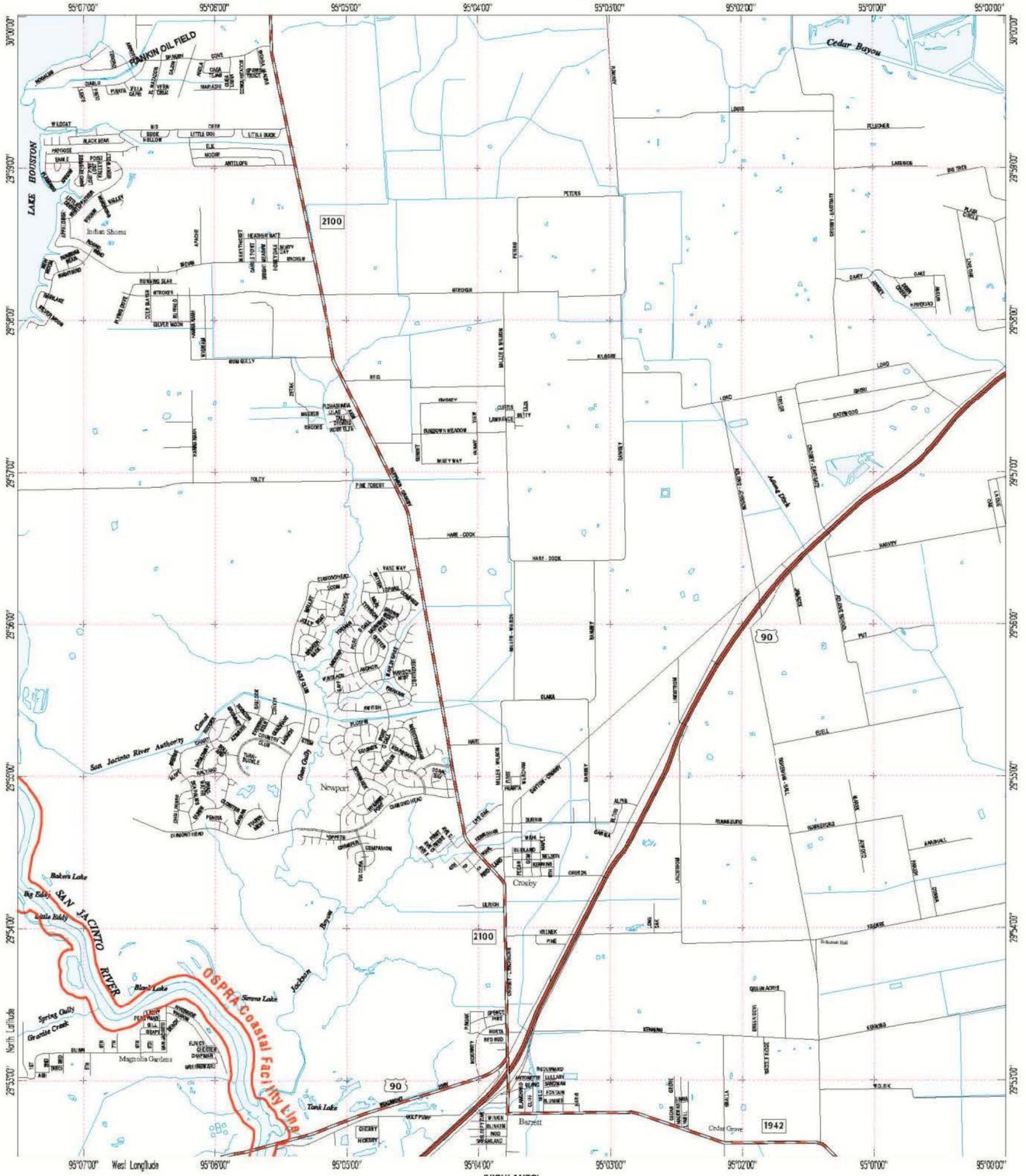


OIL SPILL PREVENTION AND RESPONSE PROGRAM

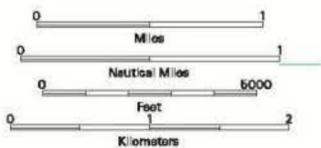
1:250,000
NAD 1927 Albers

0 2.5 5 10 15 Miles

Crosby Base Map



2885-444

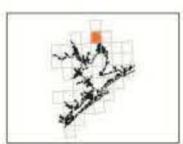
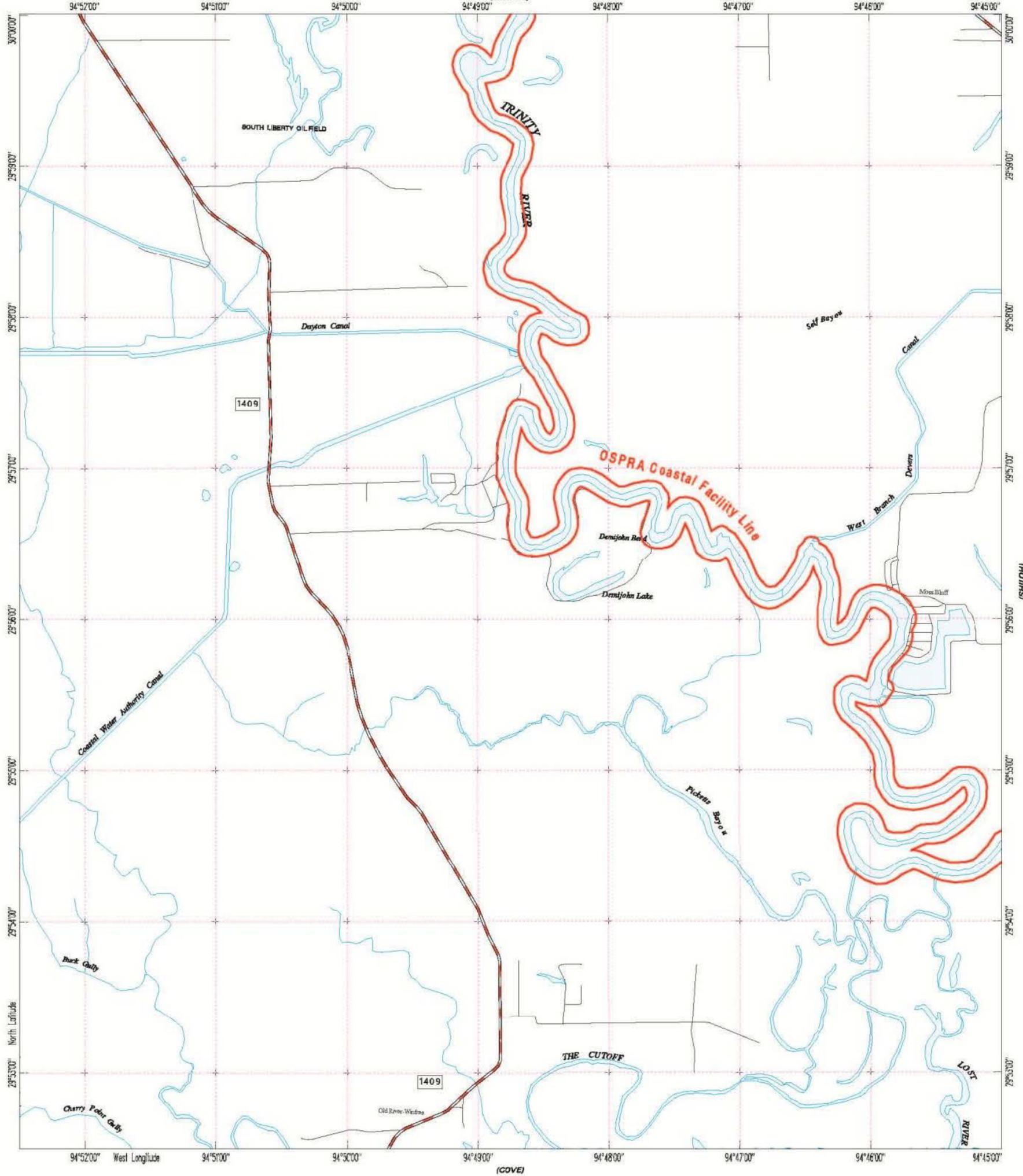


Map Legend

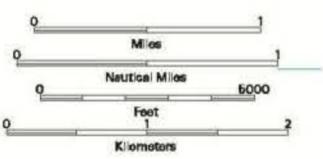
- Lake, Bay, River
- Marsh, Wetland, Swamp
- Flats (Mud, Sand, Tide)
- Divided Highway
TXDOT
- State/Federal Highway
TXDOT
- City Street/County Road
TXDOT
- OSPRA Coastal Facility Designation Line
GLO

Moss Bluff Base Map

(LIBERTY)



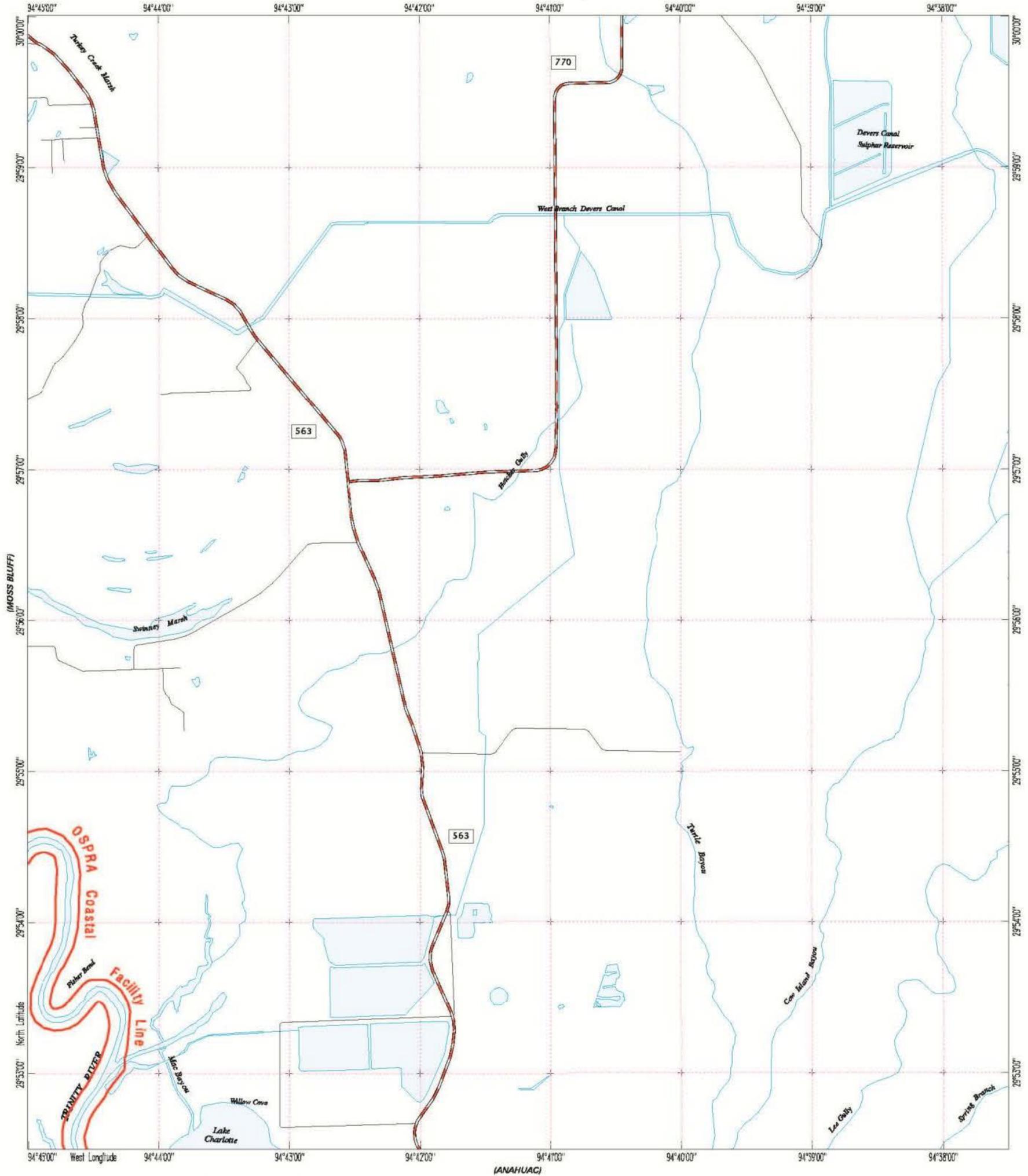
2894-334



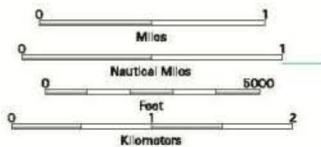
Map Legend

- Lake, Bay, River
- Marsh, Wetland, Swamp
- Flats (Mud, Sand, Tide)
- Divided Highway
- State/Federal Highway
- City Street/County Road
- OSPRA Coastal Facility Designation Line
- GLO

Shiloh Base Map



2894-343



Map Legend

- Lake, Bay, River
- Marsh, Wetland, Swamp
- Flats (Mud, Sand, Tide)
- Divided Highway TxDOT
- State/Federal Highway TxDOT
- City Street/County Road TxDOT
- OSPRA Coastal Facility Designation Line GLO

SETTEGAST**Map #23****HUMAN USE RESOURCES****Heliports**

RARNUM	MANAGER	PHONE
H1223	Don Fletcher	(713) 643-4597
H1228		
H1252	C.R. Farris	(713) 754-2903
H1256	Steve Johnson	(409) 539-5699
H1260	Bruce C. Edwards	(713) 658-7044
H1270	James A. McMullian	(713) 676-3841
H1277	Alexander Brailas	(713) 746-5590
H1279	James Wilson	(713) 654-1911
H1284	J.W. Snelson	(713) 641-0281
H1289	Scoot Dennis	(713) 236-5536
H1290	J.W. Snelson	(713) 641-0281

Water Intake Points

RARNUM	OWNER	TYPE
H072	Gulf Coast Portland Cement Co.	6

JACINTO CITY**Map #22****HUMAN USE RESOURCES****Aquaculture Sites**

RARNUM	NAME	ADDRESS	PHONE
H001	Halbert Fish Farm	9025 Pineland Channelview 77530	(713) 458-8705

Heliports

RARNUM	MANAGER	PHONE
H1274	John D. McHazzlett	(713) 455-1311

Water Intake Points

RARNUM	OWNER	TYPE
H807	Texas Parks & Wildlife Dept.	6
H808	Texas Parks & Wildlife Dept.	6

HIGHLANDS

Map #21

HUMAN USE RESOURCES

Boat Ramps

RARNUM	NAME
H717	Public boat launch
H718	River Terrace Park

Heliports

RARNUM	MANAGER	PHONE
H1172	John Pittman	(713) 479-3435
H1179	George Arnold	(713) 452-8888
H1180	George L. Clogston	(713) 673-7821

Water Intake Points

RARNUM	OWNER	TYPE
H060	Southwestern Barge Fleet Service	1
H061	Coopers Marine Service Inc.	1
H075	Western Towing Co.	1

BIOLOGICAL RESOURCES

Birds																				
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
129	Osprey	S	SC		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
135	Osprey	S	SC		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
143	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP

Fish																				
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV.		
132	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR		
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT		
	Gulf killifish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-SEP	APR-SEP		
	Sheepshead minnow				X	X	X	X	X	X	X	X	X	X	X	X	MAR-OCT	MAR-DEC		
135	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT		
139	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR		
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC		
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT		
	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC		
143	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC		

Shellfish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV.		
132	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT		
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN		
135	Grass shrimp				X	X	X	X	X	X	X	X	X	X	X	X	-	-		
139	White shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT		
143	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG		
	Grass shrimp				X	X	X	X	X	X	X	X	X	X	X	X	-	-		

Plants/Communities

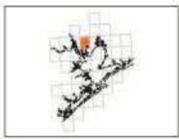
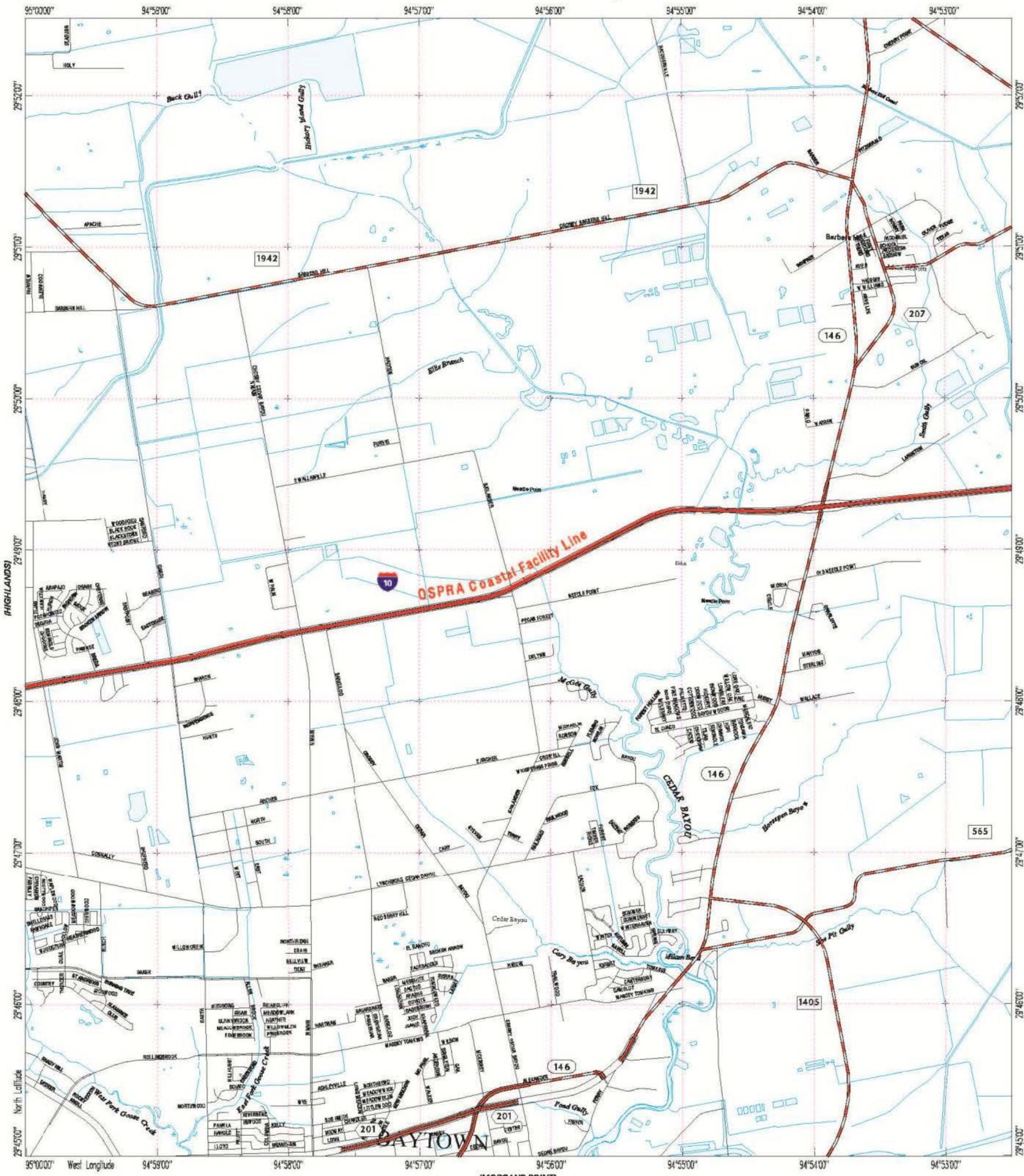
RARNUM	NAME	S/F	T/E
129	Arrowhead		
135	Smooth cordgrass		
775	Threeflower broomweed		

HIGHLANDS

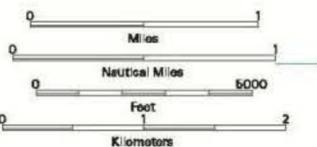
Map # 21

Polygon #	Priority	Description: what organism(s), habitat(s)?
<i>Pinchpoint at mouth of George White Lake can be boomed to protect polygon 1 from spills in San Jacinto River.</i>		
1	Medium	George White Lake. Wetlands (medium), bird habitat (medium).
2	Low	(a) Grennel Slough - Bear Lake - Gilbert Landing area, (b) Burnet Bay, (c) mouth of Buffalo Bayou. Nursery (high).
3	Medium	Fringe marshes along San Jacinto River (a - I). Nursery (high), wetlands (medium).
4	Medium	San Jacinto River island southeast of Bear Lake. Nursery (high), bird habitat (medium).
5	High	San Jacinto River island south of Grennel Slough. Wetlands (high), nursery (high), bird habitat (medium).
6	Medium	South shore of Old River meander island. Wetlands (high), nursery (medium), bird habitat (medium).
7	Medium	Fringe marsh along south shore of Burnet Bay. Wetlands (high), nursery (high).
<i>Pinchpoint at mouth of Santa Anna Bayou (on La Porte quad) can be boomed to protect polygons 8 and 9 from spills in San Jacinto River.</i>		
8	High	West shore of Santa Anna Bayou. Wetlands (high), nursery (high). San Jacinto State Park. Continued on La Porte quad.
9	High	Northern Santa Anna Bayou. Nursery (high).
10	Low	(a & b) Northern Scott Bay. Nursery (high). Continued on La Porte quad.

Mont Belvieu Base Map



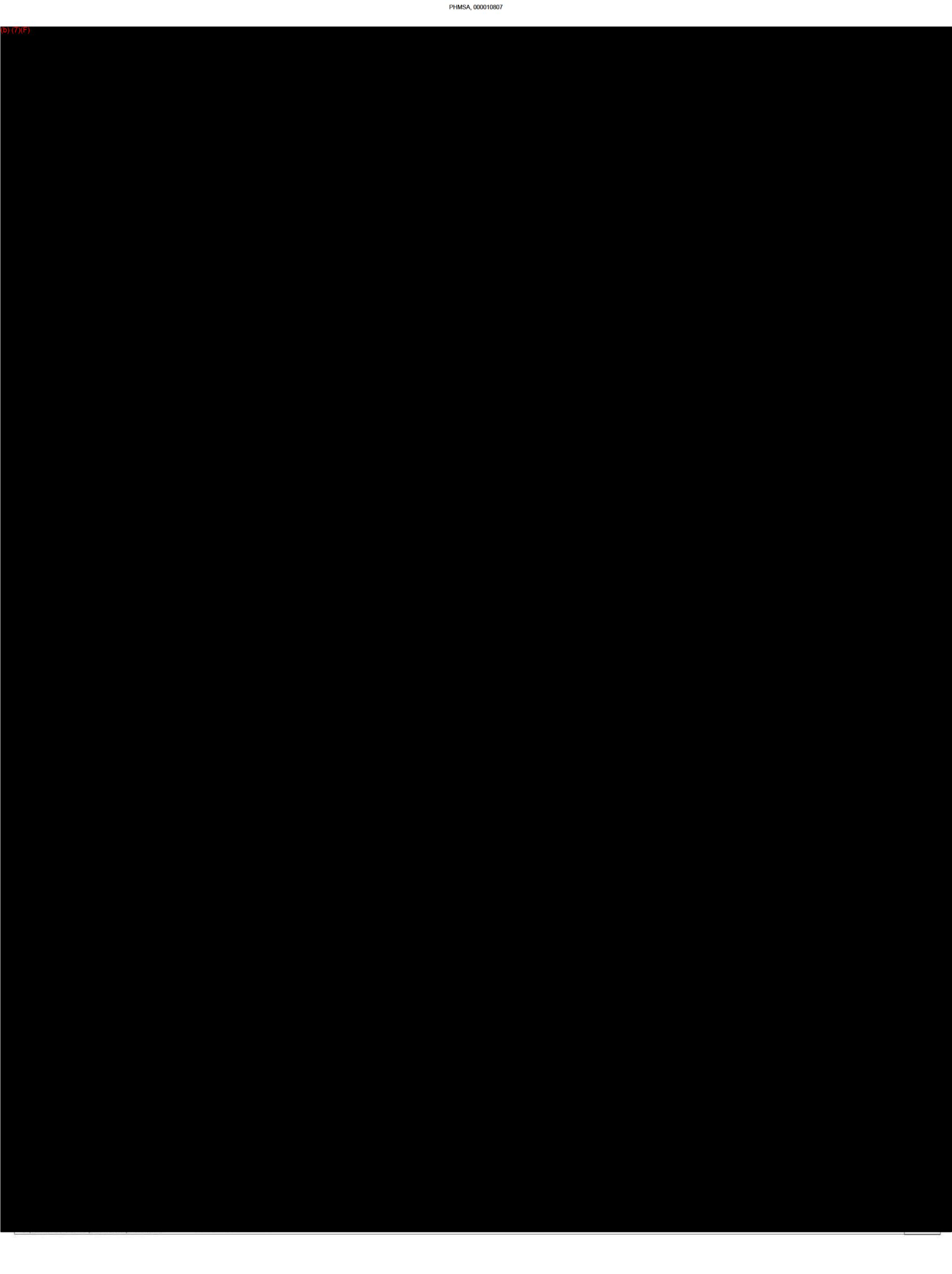
2894-332



Map Legend

- Lake, Bay, River
- Marsh, Wetland, Swamp
- Flats (Mud, Sand, Tidal)
- Divided Highway
TxDOT
- State/Federal Highway
TxDOT
- City Street/County Road
TxDOT
- OSPRA Coastal Facility Designation Line
GLO

(b) (7)(F)



HUMAN USE RESOURCES

Boat Ramps

RARNUM	NAME
H572	Cotton Lake

BIOLOGICAL RESOURCES

Birds

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
144	Waterfowl				X	X	X	X				X	X	X	X	X	-	-	-	-
	Geese				X	X	X	X				X	X	X	X	-	-	-	-	
	Mottled duck				X	X	X	X	X	X	X	X	X	X	X	X	JAN-AUG	JAN-AUG	JAN-AUG	FEB-SEP
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
146	Waterfowl				X	X	X	X				X	X	X	X	X	-	-	-	-
	Geese				X	X	X	X				X	X	X	X	X	-	-	-	-
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	White ibis				X	X	X	X	X	X	X	X	X	X	X	X	FEB-JUN	FEB-JUN	FEB-JUN	MAR-JUL
147	Waterfowl				X	X	X	X				X	X	X	X	X	-	-	-	-
150	Waterfowl				X	X	X	X				X	X	X	X	X	-	-	-	-
	Mottled duck				X	X	X	X	X	X	X	X	X	X	X	X	JAN-AUG	JAN-AUG	JAN-AUG	FEB-SEP
151	Waterfowl				X	X	X	X				X	X	X	X	X	-	-	-	-
	Mottled duck				X	X	X	X	X	X	X	X	X	X	X	X	JAN-AUG	JAN-AUG	JAN-AUG	FEB-SEP
642	Little blue heron			40	X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	APR-JUL	APR-JUL	MAY-AUG
	Roseate spoonbill			90	X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP
	Cattle egret			950	X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	APR-JUL	APR-JUL	APR-AUG
	Snowy egret			100	X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	APR-JUL	APR-JUL	MAY-AUG
	Great egret			25	X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	MAR-JUL	MAR-JUL	MAR-AUG
	Olivaceous cormorant			75	X	X	X	X	X	X	X	X	X	X	X	X	JAN-JUL	JAN-JUL	JAN-JUL	FEB-AUG

Reptiles/Amphibians

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	HATCHING
144	American alligator				X	X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-DEC
146	American alligator				X	X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-DEC
147	American alligator				X	X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-DEC
150	American alligator				X	X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-DEC
151	American alligator				X	X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-DEC

Fish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
144	Channel catfish				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Striped bass				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Blue catfish				X	X	X	X	X	X	X	X	X	X	X	X	-	-
146	Gizzard shad				X	X	X	X	X	X	X	X	X	X	X	X	-	-
147	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Blue catfish				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Striped bass				X	X	X	X	X	X	X	X	X	X	X	X	-	-
151	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
152	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT
	Spot				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	NOV-FEB
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC

Shellfish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV.
151	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
152	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Brackishwater clam				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN

Plants/Communities

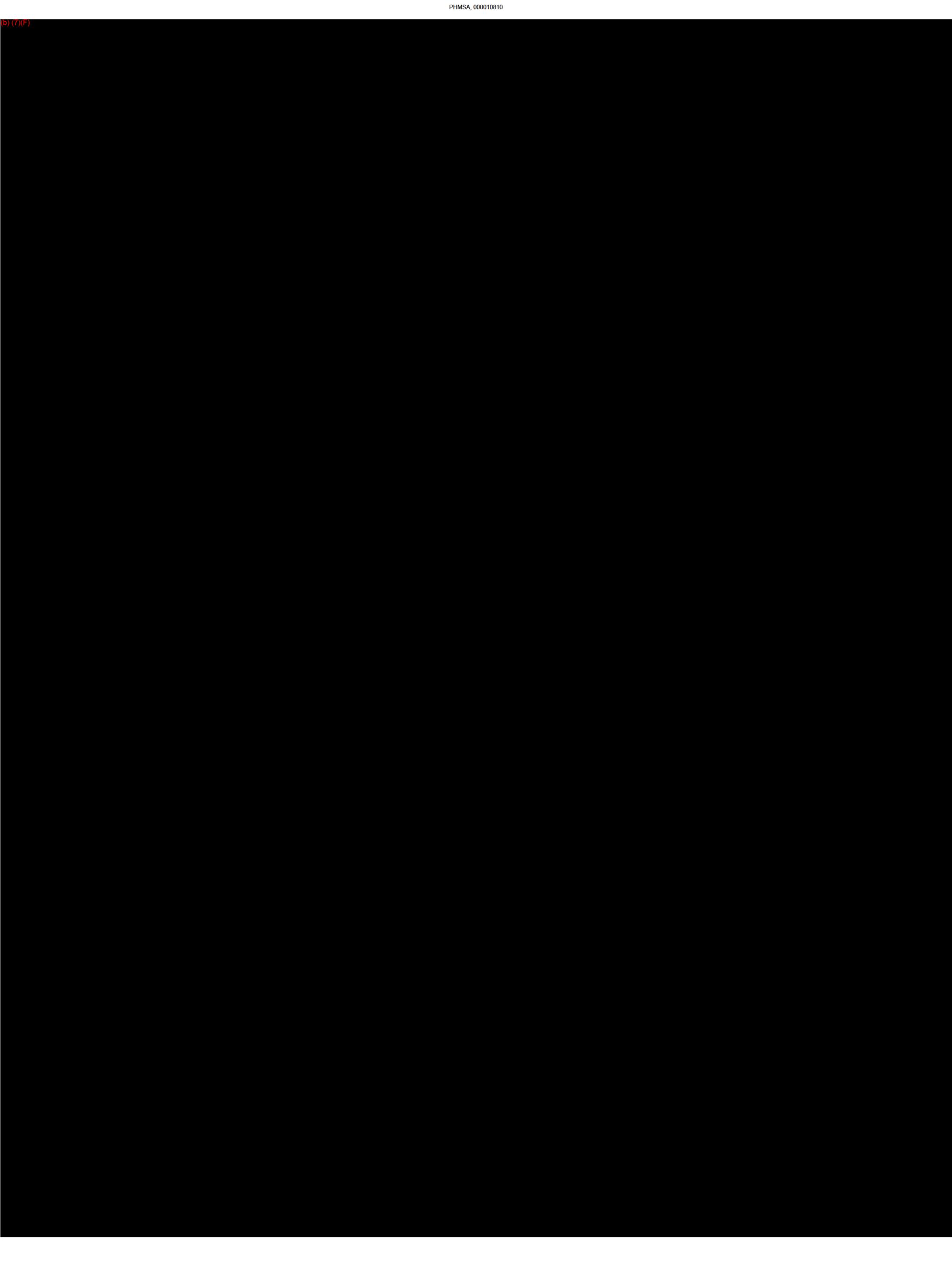
RARNUM	NAME	S/F	T/E
144	Smooth cordgrass		
146	Common reed		
	Arrowhead		
150	Widgeon grass		
151	Widgeon grass		
774	Texas windmill-grass	C2	N

COVE

Map # 20

Polygon #	Priority	Description: what organism(s), habitat(s)?
<i>Several pinchpoints along north shore of Trinity Bay can be boomed to protect polygons 1 and 3 from spills in Trinity Bay: Red Bayou, Double Bayou, Cross Bayou, Dunn Bayou, Cove Bayou, and several unnamed inlets and cuts are shown on the Cove quad.</i>		
1	High	Western lobe of Trinity River Delta (a - c). Bird habitat (high), nursery (high), wetlands (high). Many sections can be protected separately. Continuous with polygon 2 on Anahuac quad.
2	Medium	Trinity River meander south of I10. Nursery (high), wetlands (high).
<i>Pinchpoint at mouth of Cotton Bayou can be boomed to protect Polygon 3 from spills in Old River Lake, or to protect Old River Lake from spills in Cotton Lake or the Cotton Bayou drainage.</i>		
3	Medium	(a) Old River Lake and (b) Cotton Lake. Bird habitat (high), nursery (high). Protect sections separately.
4	Medium	Cotton Bayou above Cotton Lake. Nursery (high), wetlands (high).
5	SAV	Seagrass beds of Trinity River Delta. Bird habitat (high), nursery (high), submerged aquatic vegetation (high). This area should be avoided during response activities to prevent physical damage to vegetation. <u>Note:</u> Seagrass beds may not occur in the same location from year to year. <u>Note:</u> the Trinity River delta is shallow, hazardous, and changes rapidly. Airboats may be necessary in many areas. USGS topo maps show marsh in some areas that are now open water.

(b) (7)(F)



ANAHUAC

Map #19

HUMAN USE RESOURCES			
Boat Ramps			
RARNUM	NAME		
H570	Fort Anahuac Park		
Heliports			
RARNUM	MANAGER	PHONE	
H1357	W.C. Byerly	Not Available	
Water Intake Points			
RARNUM	OWNER	TYPE	
H099	Chambers-Liberty Cos. ND	6	
H100	City of Houston	6	
H101	Trinity River Authority	6	

BIOLOGICAL RESOURCES																				
Mammals																				
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D				
160	River otter				X	X	X	X	X	X	X	X	X	X	X	X				
Birds																				
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
153	Mottled duck				X	X	X	X	X	X	X	X	X	X	X	X	JAN-AUG	JAN-AUG	JAN-AUG	FEB-SEP
	Waterfowl				X	X	X	X				X	X	X	X	-	-	-	-	
155	Waterfowl				X	X	X				X	X	X	X		-	-	-	-	
	Mottled duck				X	X	X	X	X	X	X	X	X	X	X	JAN-AUG	JAN-AUG	JAN-AUG	FEB-SEP	
157	Rails				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Red-tailed hawk				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Northern harrier				X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP	
	Red-shouldered hawk				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Bald eagle	F	T		X	X	X	X	X	X	X	X	X	X	X	JAN-AUG	JAN-AUG	JAN-AUG	FEB-SEP	
	Wood duck				X	X	X	X	X	X	X	X	X	X	X	FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP	
	Mallard				X	X	X					X	X	X		-	-	-	-	
158	Bald eagle	F	T		X	X	X	X	X	X	X	X	X	X	X	JAN-AUG	JAN-AUG	JAN-AUG	FEB-SEP	
159	Waterfowl				X	X	X				X	X	X	X		-	-	-	-	
	Mottled duck				X	X	X	X	X	X	X	X	X	X	X	JAN-AUG	JAN-AUG	JAN-AUG	FEB-SEP	
160	Mottled duck				X	X	X	X	X	X	X	X	X	X	X	JAN-AUG	JAN-AUG	JAN-AUG	FEB-SEP	
	Waterfowl				X	X	X				X	X	X	X		-	-	-	-	
161	Roseate spoonbill				X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP	
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Waterfowl				X	X	X				X	X	X	X		-	-	-	-	
	White ibis				X	X	X	X	X	X	X	X	X	X	X	FEB-JUN	FEB-JUN	FEB-JUN	MAR-JUL	
	Green-winged teal				X	X	X				X	X	X	X		-	-	-	-	
	Gadwall				X	X	X				X	X	X	X		-	-	-	-	
	Northern shoveler				X	X	X				X	X	X	X		-	-	-	-	
	Lesser scaup				X	X	X				X	X	X	X		-	-	-	-	
	Osprey	S	SC		X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
163	Waterfowl				X	X	X				X	X	X	X		-	-	-	-	
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Long-billed curlew	S	SC		X	X	X				X	X	X	X		-	-	-	-	
	Clapper rail				X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	APR-SEP	
165	Mottled duck				X	X	X	X	X	X	X	X	X	X	X	JAN-AUG	JAN-AUG	JAN-AUG	FEB-SEP	
	Waterfowl				X	X	X				X	X	X	X		-	-	-	-	
166	Waterfowl				X	X	X				X	X	X	X		-	-	-	-	
Reptiles/Amphibians																				
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	HATCHING		
153	American alligator				X	X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-DEC		
155	American alligator				X	X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-DEC		
159	American alligator				X	X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-DEC		
160	American alligator				X	X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-DEC		
161	American alligator				X	X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-DEC		
163	American alligator				X	X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-DEC		
165	American alligator				X	X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-DEC		
166	American alligator				X	X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-DEC		
Fish																				
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV		
157	Striped bass				X	X	X	X	X	X	X	X	X	X	X	X	-	-		
	Blue catfish				X	X	X	X	X	X	X	X	X	X	X	X	-	-		
	Channel catfish				X	X	X	X	X	X	X	X	X	X	X	X	-	-		
160	Channel catfish				X	X	X	X	X	X	X	X	X	X	X	X	-	-		
	Blue catfish				X	X	X	X	X	X	X	X	X	X	X	X	-	-		
	Killifish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-SEP	JAN-DEC		
	Mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB		
161	Gizzard shad				X	X	X	X	X	X	X	X	X	X	X	X	-	-		
	Blue catfish				X	X	X	X	X	X	X	X	X	X	X	X	-	-		
	Mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB		
	Killifish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-SEP	JAN-DEC		

ANAHUAC CONTINUED

BIOLOGICAL RESOURCES CONT.

Fish Continued

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
162	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR

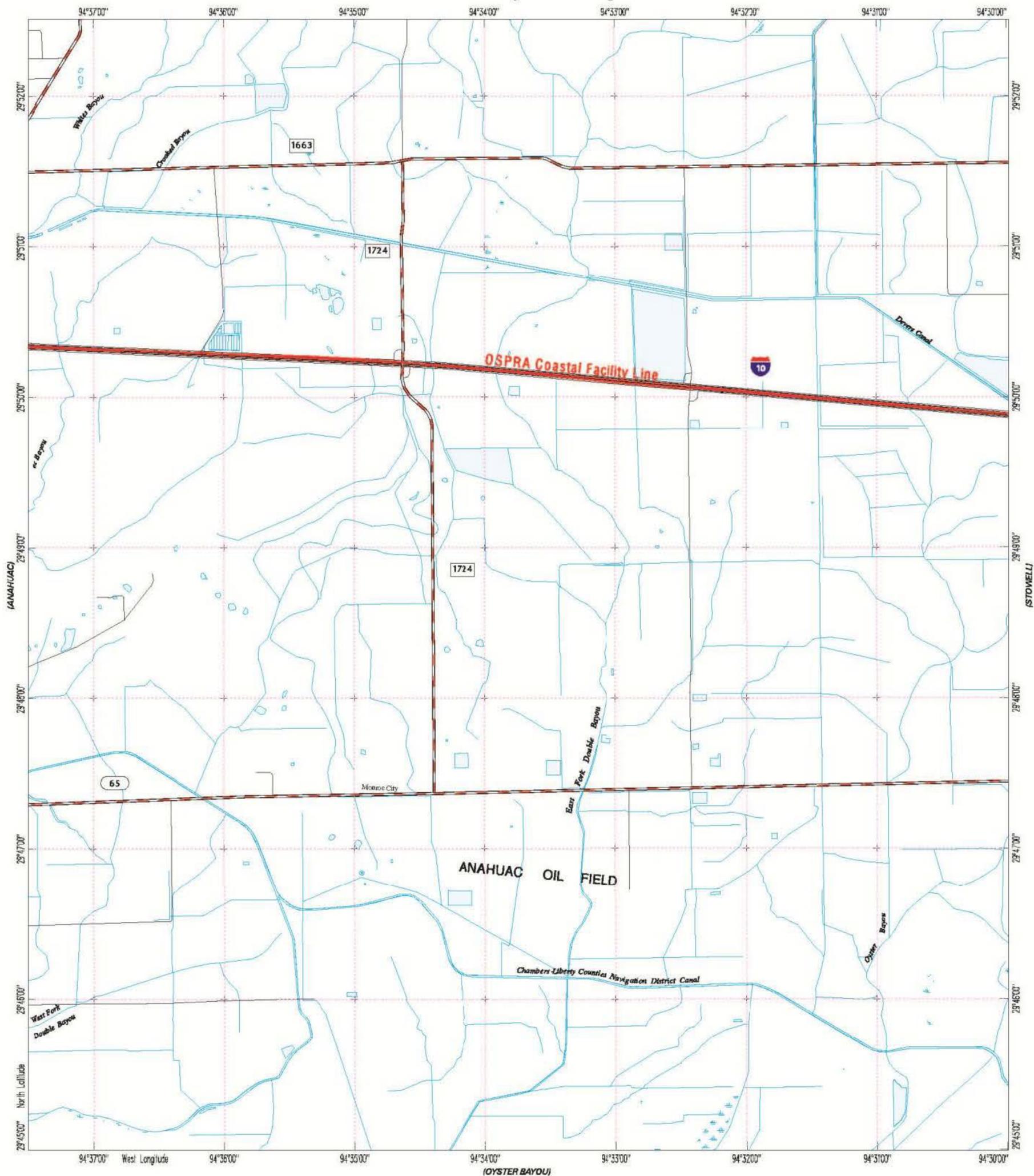
Shellfish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV.
155	Brackishwater clam				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-UL
160	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
161	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
162	Brackishwater clam				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
163	Brackishwater clam				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
165	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Grass shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	-
166	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Brackishwater clam				X	X	X	X	X	X	X	X	X	X	X	X	-	-

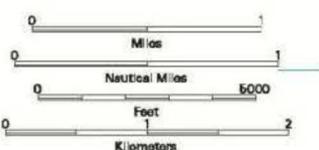
Plants/Communities

RARNUM	NAME	S/F	T/E
153	Salt meadow cordgrass (wiregrass)		
	California bulrush		
	Arrowhead		
155	Water celery		
	Widgeon grass		
	Southern naiad		
159	Salt meadow cordgrass (wiregrass)		
163	Water celery		
166	Widgeon grass		
	Water celery		

Monroe City Base Map



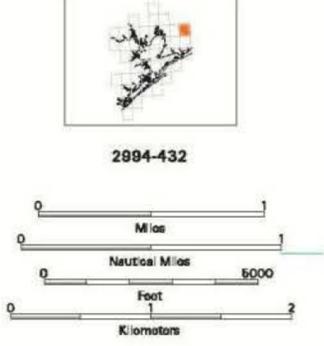
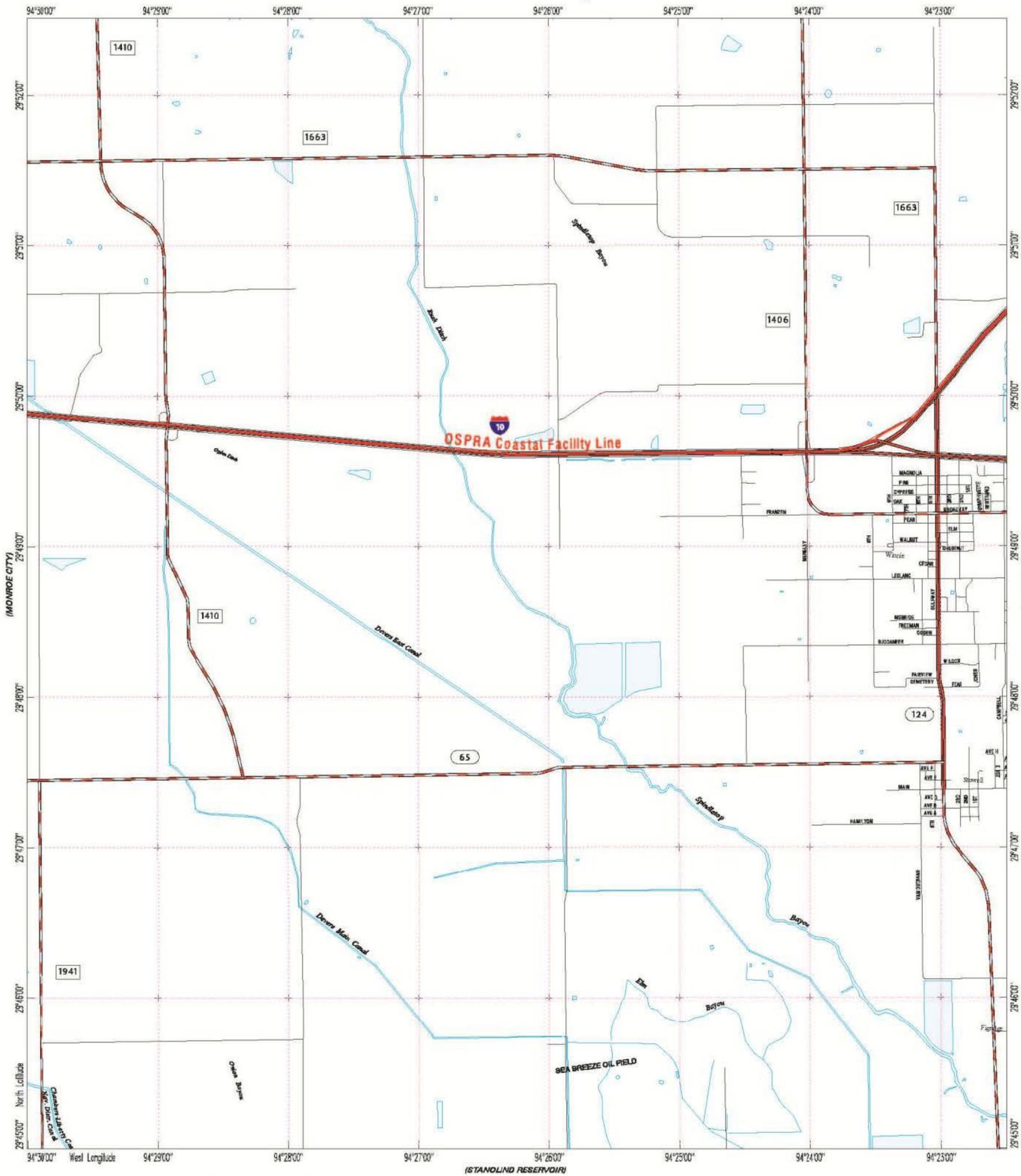
2894-341



Map Legend

- Lake, Bay, River
- Marsh, Wetland, Swamp
- Flats (Mud, Sand, Tidal)
- Divided Highway
TxDOT
- State/Federal Highway
TxDOT
- City Street/County Road
TxDOT
- OSPRA Coastal Facility Designation Line
GLO

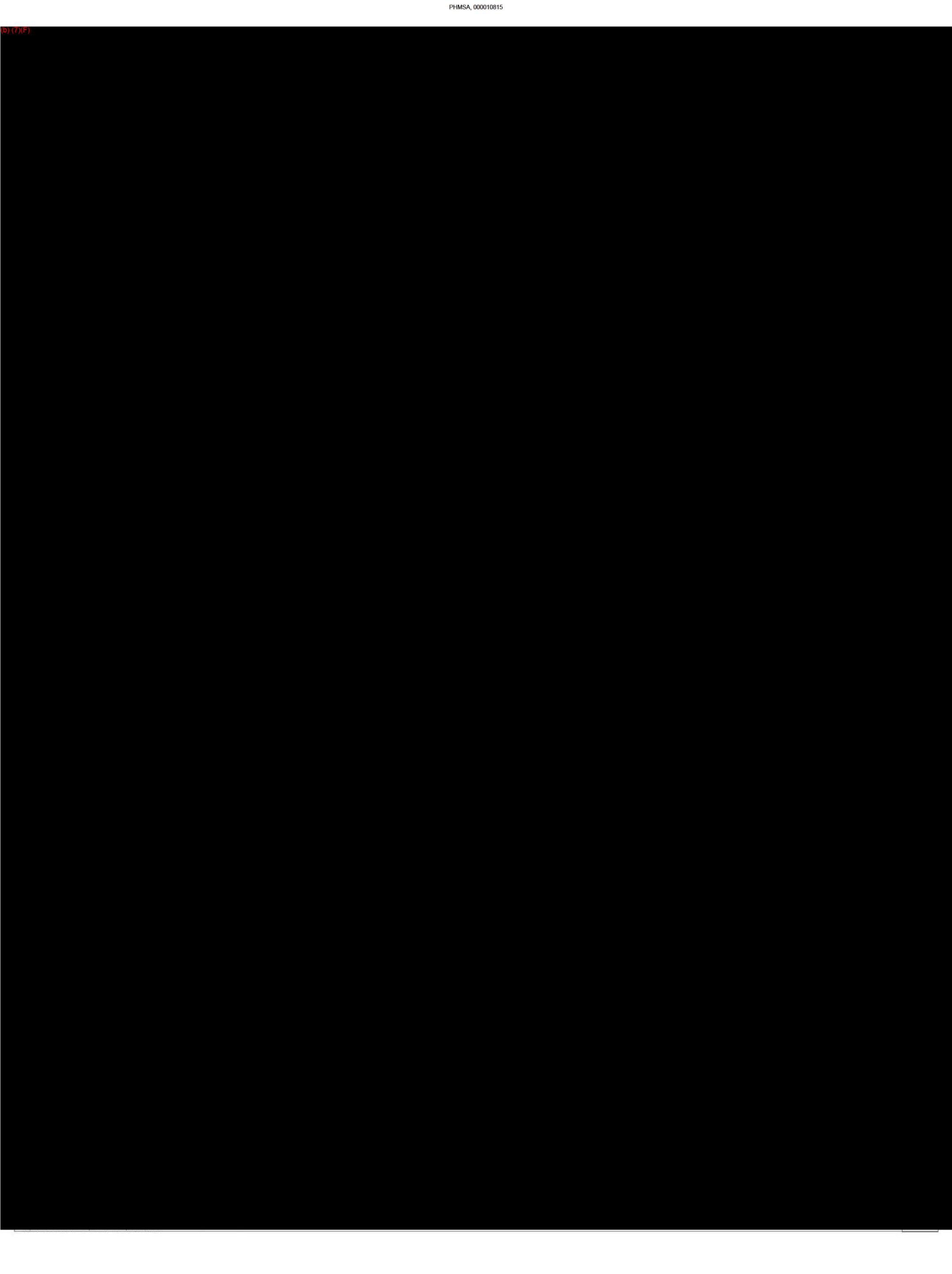
Stowell Base Map



Map Legend

- Lake, Bay, River
- Marsh, Wetland, Swamp
- Flats (Mud, Sand, Tide)
- Divided Highway
TxDOT
- State/Federal Highway
TxDOT
- City Street/County Road
TxDOT
- OSPRA Coastal Facility Designation Line
GLO

(b) (7)(F)



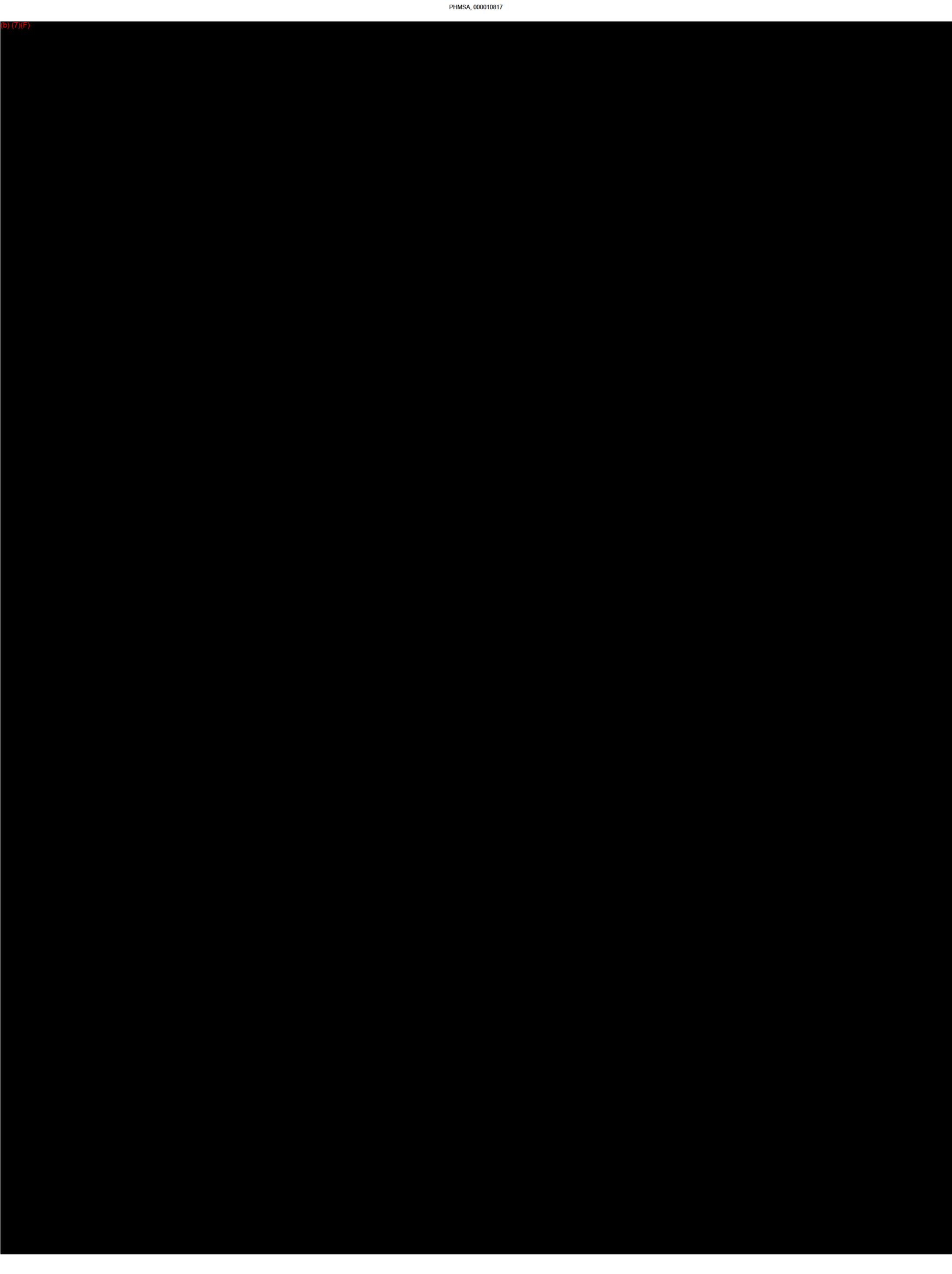
PARK PLACE**Map #29****HUMAN USE RESOURCES****Coast Guard Facilities**

RARNUM	NAME	PHONE
H426	MSO Houston/Houston Station	(713) 672-6639

Heliports

RARNUM	MANAGER	PHONE
H1211	Tom R. Lewis	
H1218	Raleigh Abner	(713) 921-8181
H1234	J.W. Snelson	(713) 641-0281
H1235	Captian Waggett	(713) 672-6639
H1241	William D. Shirley	(713) 991-6300
H1245	Dudley Tarlton	(713) 871-8010
H1276	Houston Police Department	(713) 731-5212

(b) (7)(F)



PASADENA

Map #28

HUMAN USE RESOURCES

Heliports

RARNUM	MANAGER	PHONE
H1309	LT P.D. Cobb	(713) 477-1221
H1310	J. A. Stallings	(713) 944-5347
H1311	John Pittman	(713) 479-3435
H1312	Dennis Knox	(713) 477-0411
H1313	Administrator	(713) 944-6666
H1314	Duard Franklin	(713) 740-1121
H1346	R.L. Moore Division Manager	(713) 623-7119

Water Intake Points

RARNUM	OWNER	TYPE
H065	Oiltanking of Texas Inc.	6
H066	Phillips 66 Corporation	6
H067	Ethyl Corporation	6
H068	Mobil Oil Corporation	6
H069	Armco Inc.	6
H070	Houston L&P-Deepwater	6
H071	Paktank Corporation -Galena Park Term.	1

BIOLOGICAL RESOURCES

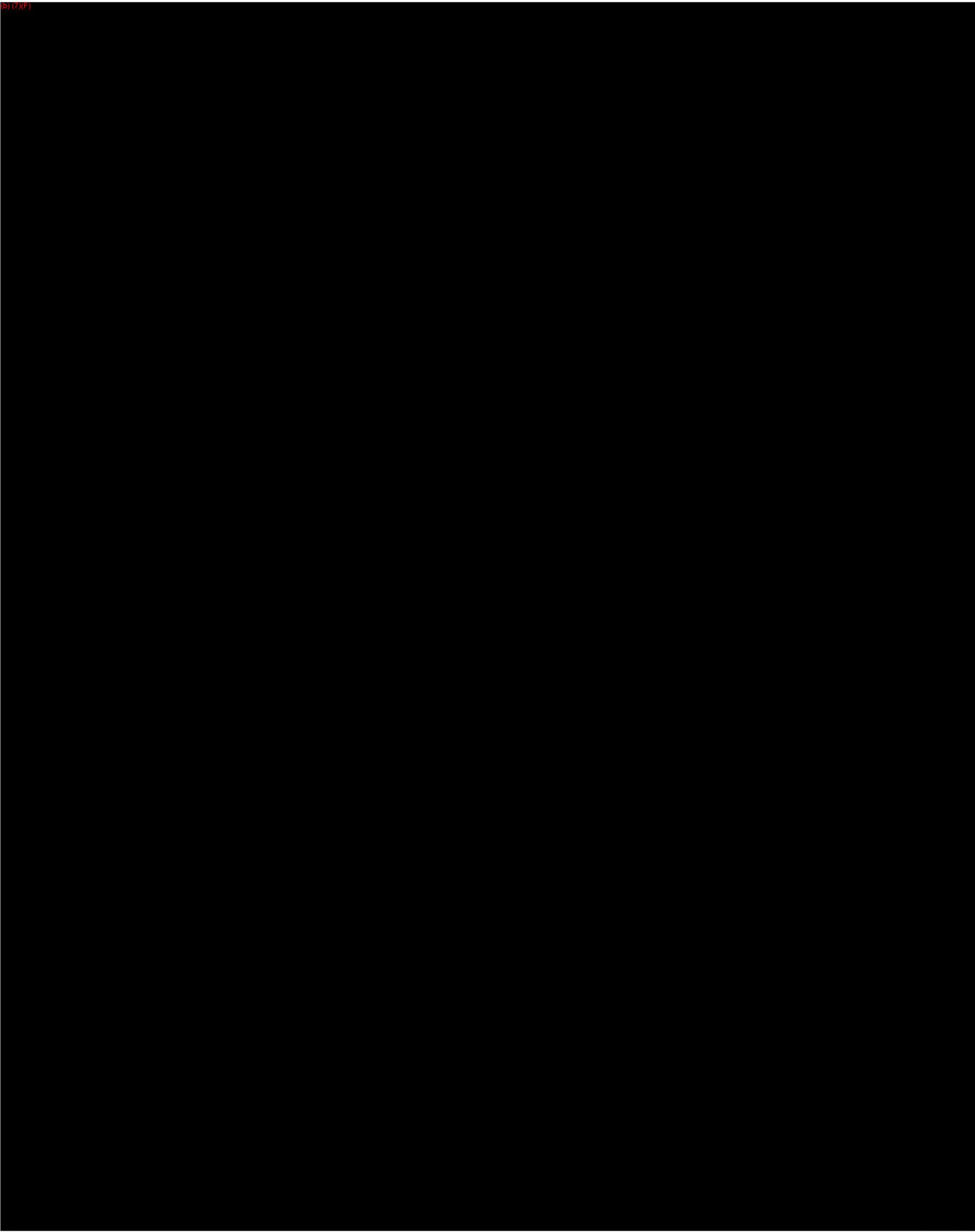
Reptiles/Amphibians

RARNUM	NAME	S/F	T/E
779	Crawfish frog	NA	N

Plants/Communities

RARNUM	NAME	S/F	T/E
778	Houston machaeranthera	F	C2

(b) (7)(F)



LA PORTE

Map #27

HUMAN USE RESOURCES

Boat Ramps

RARNUM	NAME
H543	Tabb's Bay
H545	Sylvan Beach
H607	The Galley
H720	The Galley

Heliports

RARNUM	MANAGER	PHONE
H1190	C.J. Monk	(713) 476-3700
H1301	H. Carlos Smith	(713) 471-4226
H1315	Larry D. Tucker	(713) 476-1501

Water Intake Points

RARNUM	OWNER	TYPE
H062	Houston L&P-Sam Bertram	6
H064	Paktank Corporation-Deer Park	1
H074	Baywood Country Club	1

BIOLOGICAL RESOURCES

Birds

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
176	Pied-billed grebe				X	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	APR-SEP
	American coot				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
177	Least tern	F	E		X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	MAY-SEP	MAY-OCT
644	Least tern	F	E	18	X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	MAY-SEP	MAY-OCT
645	Cattle egret			760	X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	APR-JUL	APR-JUL	APR-AUG
	Snowy egret			170	X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	APR-JUL	APR-JUL	MAY-AUG
	Black-crowned night heron			280	X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP
	White ibis			280	X	X	X	X	X	X	X	X	X	X	X	X	FEB-JUN	FEB-JUN	FEB-JUN	MAR-JUL
	Little blue heron			8	X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	APR-JUL	APR-JUL	MAY-AUG
	Great blue heron			8	X	X	X	X	X	X	X	X	X	X	X	X	FEB-JUN	FEB-JUN	FEB-JUN	MAR-JUL
	Tricolored heron			26	X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP
	Roseate spoonbill			28	X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP
	Olivaceous cormorant			77	X	X	X	X	X	X	X	X	X	X	X	X	JAN-JUL	JAN-JUL	JAN-JUL	FEB-AUG
	Great egret			133	X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	MAR-JUL	MAR-JUL	MAR-AUG

Fish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
178	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
180	Spot				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	NOV-FEB
182	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
183	Gulf menhaden			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB

Shellfish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
68	Grass shrimp				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
175	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
178	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
180	Grass shrimp				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
183	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Brackishwater clam				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN

Plants/Communities

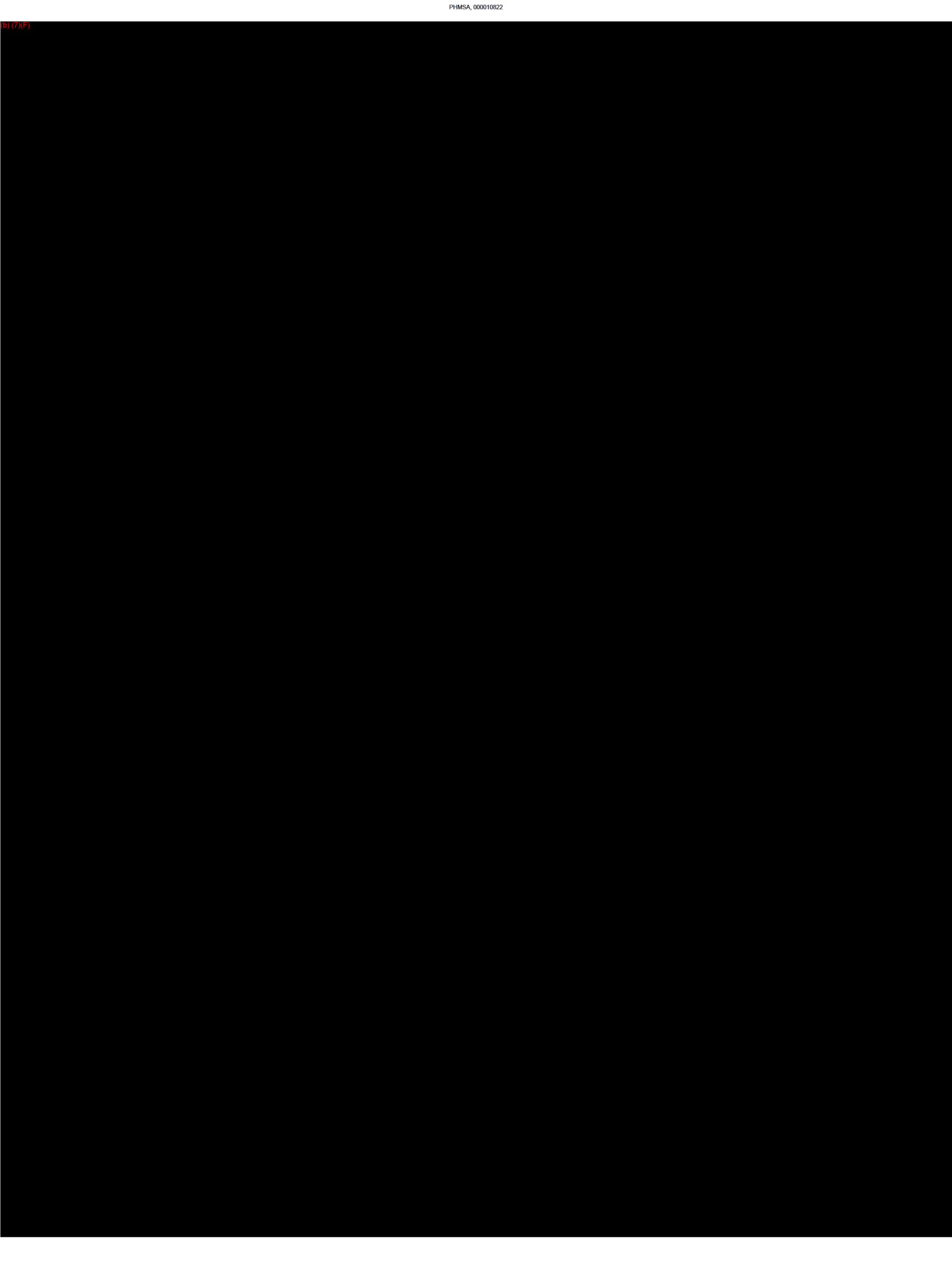
RARNUM	NAME	S/F	T/E
774	Texas windmill-grass	F	C2
778	Houston machaeranthera	F	C2
788	Little bluestem-brownseed paspalum series		

LA PORTE

Map # 27

Polygon #	Priority	Description: what organism(s), habitat(s)?
<i>Pinchpoint at mouth of Santa Anna Bayou can be boomed to protect polygon 1 (and polygons 8 and 9 on Highlands quad) from spills in San Jacinto River.</i>		
1	Medium	Marsh east of Santa Anna Bayou. Nursery (high), bird habitat (medium). San Jacinto State Park. Continued on Highlands quad.
2	Low	(a) Scott Bay, (b) Upper San Jacinto Bay, and (c) eastern Black Duck Bay. Nursery (high).
3	High	Northeastern Alexander Island. Rookery (high). Best rookery in area (hundreds of nesting pairs). <u>Note:</u> Nesting season is February-August in rookeries.
4	Low	South Crystal Bay. Nursery (high). Continued on Highlands quad.

(b) (7)(F)



MORGANS POINT

Map #26

HUMAN USE RESOURCES

Boat Ramps

RARNUM	NAME
H541	Thompson's
H542	Roseland Park
H571	Crawley's Bait Camp
H618	H221
H719	Mary's Bait Camp
H721	Bayland Park

Heliports

RARNUM	MANAGER	PHONE
H1169	Rod Seidel	(713) 420-8600

Marinas

RARNUM	NAME	ADDRESS	PHONE
H155	Baytown Marina	1512 1/2 Jones Baytown	(713) 427-1997

BIOLOGICAL RESOURCES

Birds

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLDGING
192	American white pelican				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Olivaceous cormorant				X	X	X	X	X	X	X	X	X	X	X	X	JAN-JUL	JAN-JUL	JAN-JUL	FEB-AUG
	Brown pelican	F	E		X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP
194	Brown pelican	F	E		X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP
	American white pelican				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-

Fish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
185	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Spot				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	NOV-FEB
	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
188	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
190	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
	Atlantic croaker			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Sheepshead				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-AUG
195	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
196	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
197	Atlantic croaker			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Sheepshead				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-AUG
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT
	Spot				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	NOV-FEB
198	Sheepshead minnow				X	X	X	X	X	X	X	X	X	X	X	X	MAR-OCT	MAR-DEC
	Gulf menhaden			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
200	Gizzard shad				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Gizzard shad				X	X	X	X	X	X	X	X	X	X	X	X	-	-

Shellfish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
185	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
188	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Grass shrimp				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
190	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT

MORGANS POINT CONTINUED

BIOLOGICAL RESOURCES CONT.

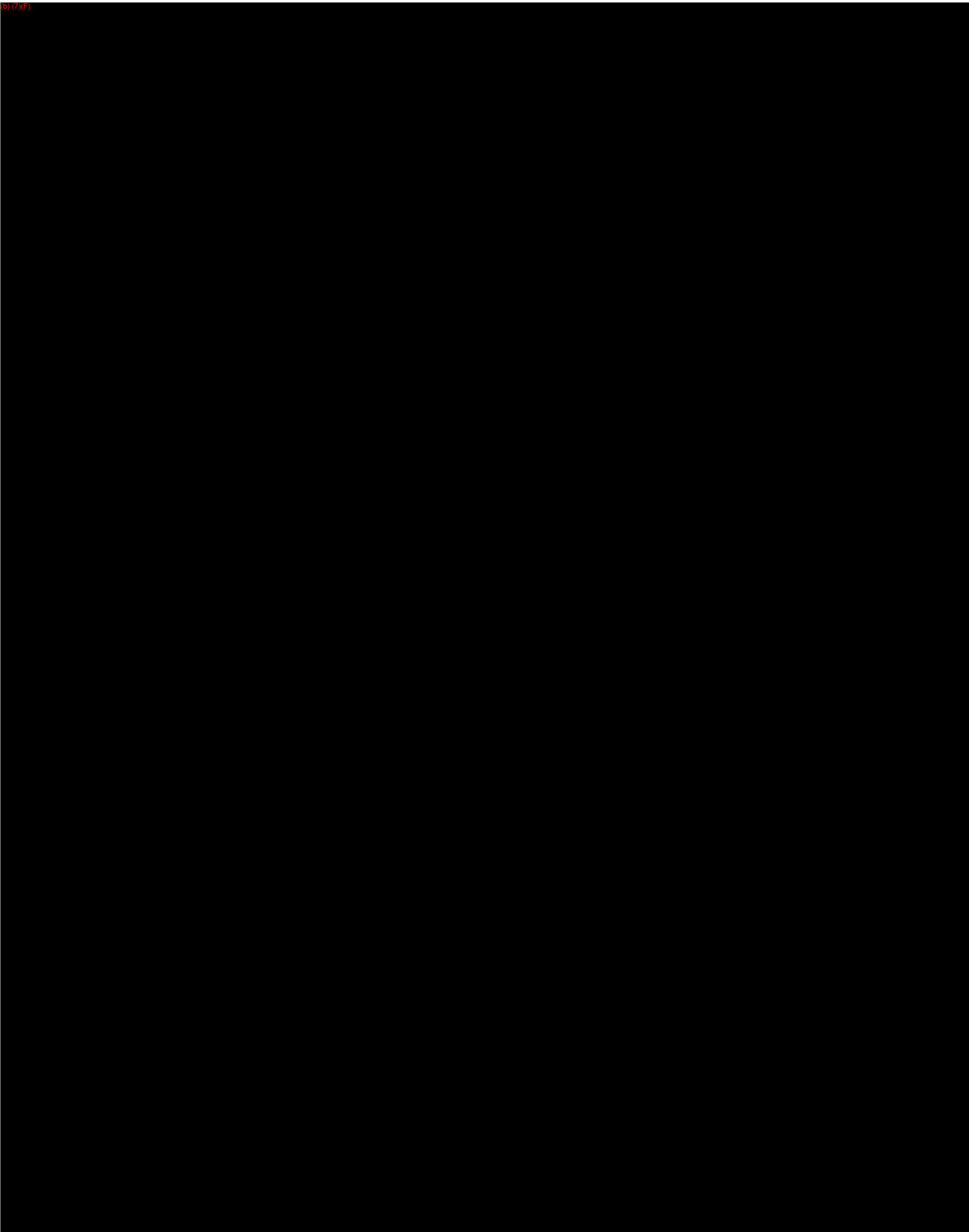
Shellfish Continued

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV.
193	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
195	Brackishwater clam				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
196	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
197	Blue crab			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	White shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Brown shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
198	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG

Plants/Communities

RARNUM	NAME	S/F	T/E
192	Smooth cordgrass		

(b) (7)(F)



UMBRELLA POINT

Map #25

HUMAN USE RESOURCES

Boat Ramps

RARNUM	NAME
H540	Crawley's

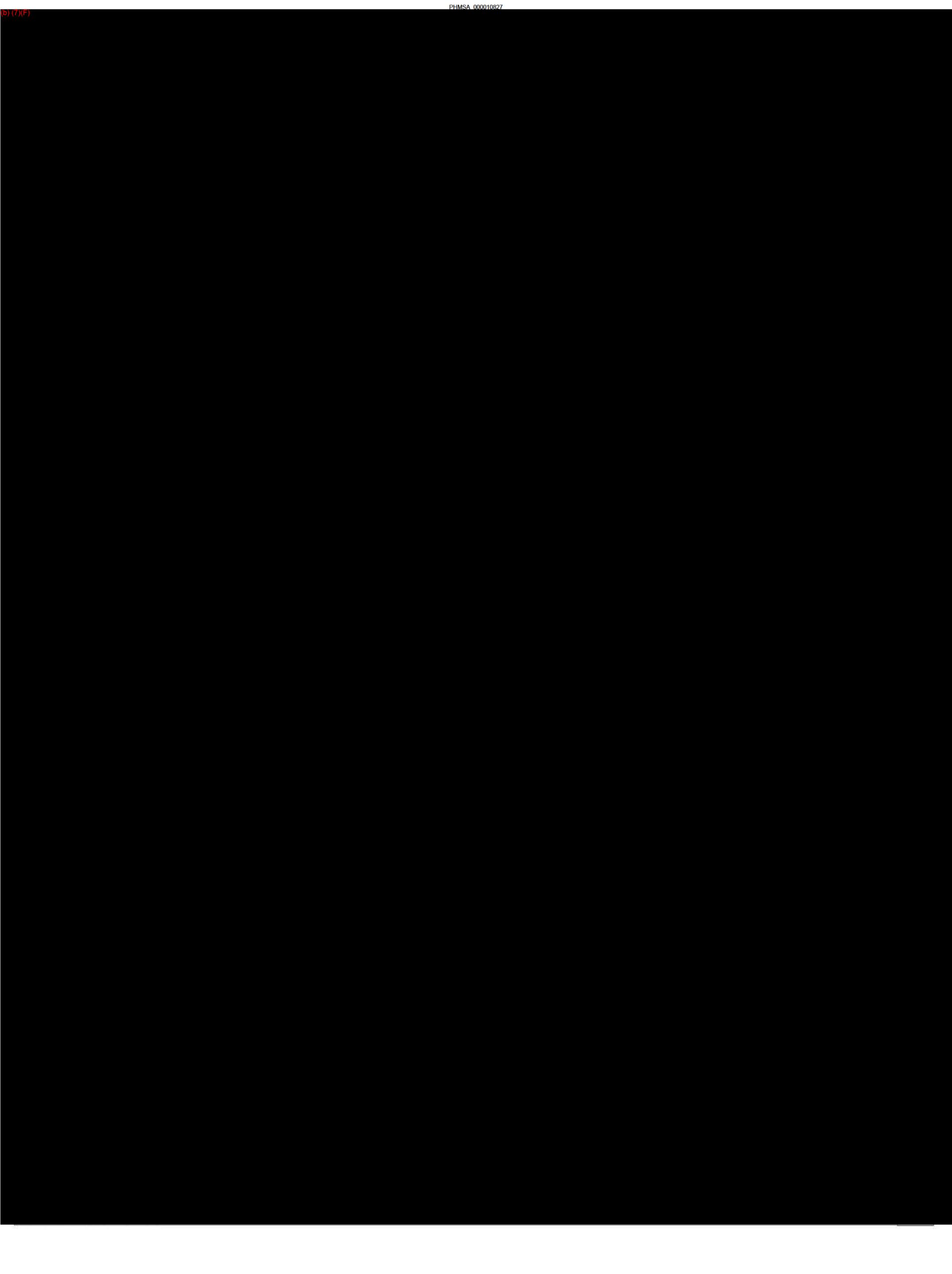
BIOLOGICAL RESOURCES

Fish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
201	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Spot				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	NOV-FEB
	Least puffer				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Atlantic croaker			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
202	Spot				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	NOV-FEB
	Atlantic croaker			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Pinfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT
	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Least puffer				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB

Shellfish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
201	Brackishwater clam				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	White shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Blue crab			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Brown shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
202	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	Blue crab			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL



OAK ISLAND

Map #24

HUMAN USE RESOURCES		
Boat Ramps		
RARNUM	NAME	
H589	Oak Island County	
Water Intake Points		
RARNUM	OWNER	TYPE
H097	Donald G. Nelson ET AL	6
H098	Edmonds Brothers Farms	6

BIOLOGICAL RESOURCES																		
Fish																		
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
211	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
213	Spotted seatrout			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Southern flounder			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
	Red drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Spot				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	NOV-FEB
Shellfish																		
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
211	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
213	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Brown shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	Grass shrimp				X	X	X	X	X	X	X	X	X	X	X	X	-	-

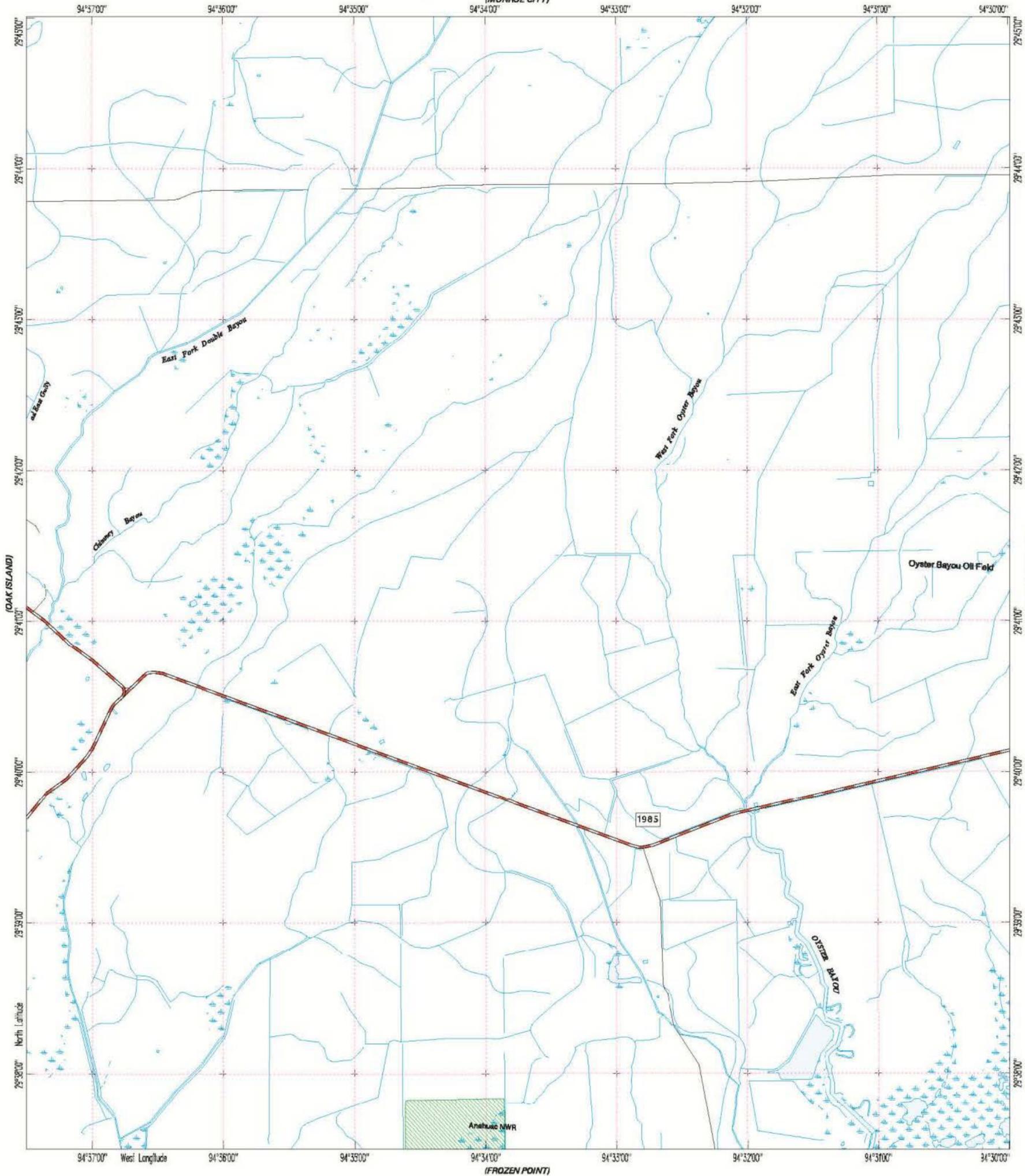
OAK ISLAND

Map # 24

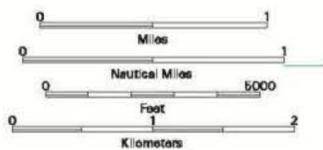
Polygon #	Priority	Description: what organism(s), habitat(s)?
1	Medium	Trinity Bay shoreline south of Anahuac, barrier islands to west flanking Trinity River Channel, and barrier islands along eastern margin of Anahuac Channel (a - d). Nursery (high), wetlands (high). Sections should be protected separately. Continued on Anahuac quad.
2	SAV	Seagrass beds between Trinity River Channel and Anahuac Channel. Submerged aquatic vegetation (high), nursery (high). <u>Note:</u> Seagrass beds along eastern shore of Trinity Bay should be avoided during response activities to prevent physical damage to vegetation. Beds may not occur in the same location from year to year.
3	Medium	Trinity Bay shoreline at Oak Island, north of Double Bayou. Wetlands (high), nursery (medium). <i>Pinchpoint at mouth of Double Bayou can be boomed to protect polygon 4 and part of polygon 3.</i>
4	Medium	Confluence of West and East Forks of Double Bayou (a, b). Wetlands (high), nursery (medium)

Oyster Bayou Base Map

(MONROE CITY)



2894-314

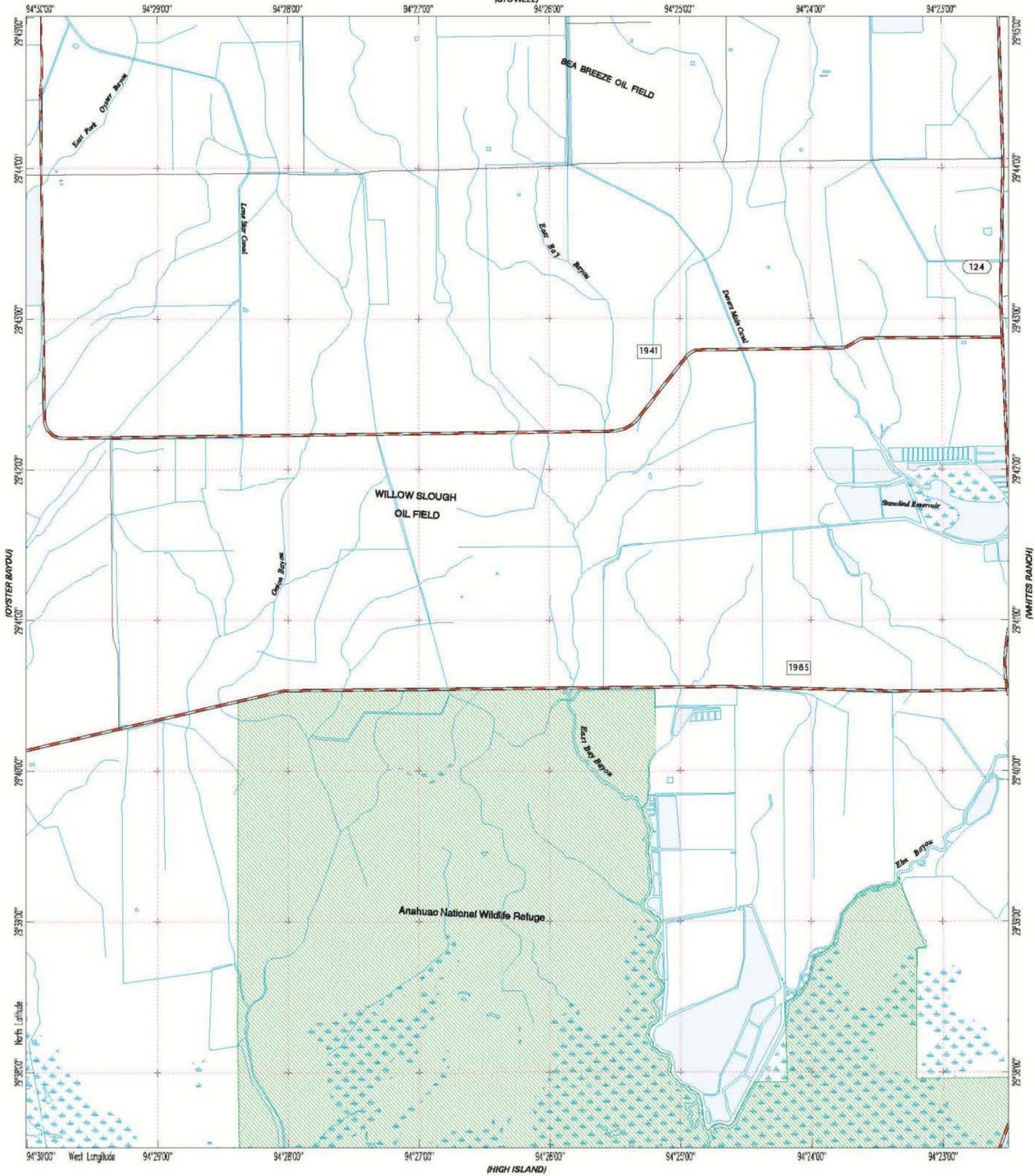


Map Legend

- Lake, Bay, River
- Marsh, Wetland, Swamp
- Flats (Mud, Sand, Tidal)
- Conservation Area
- Divided Highway
TxDOT
- State/Federal Highway
TxDOT
- City Street/County Road
TxDOT

Stanolind Reservoir Base Map

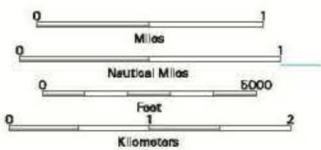
(STOWELL)



(HIGH ISLAND)



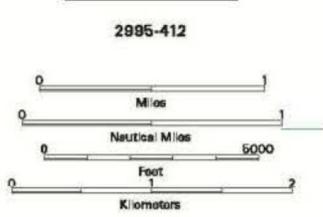
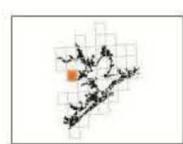
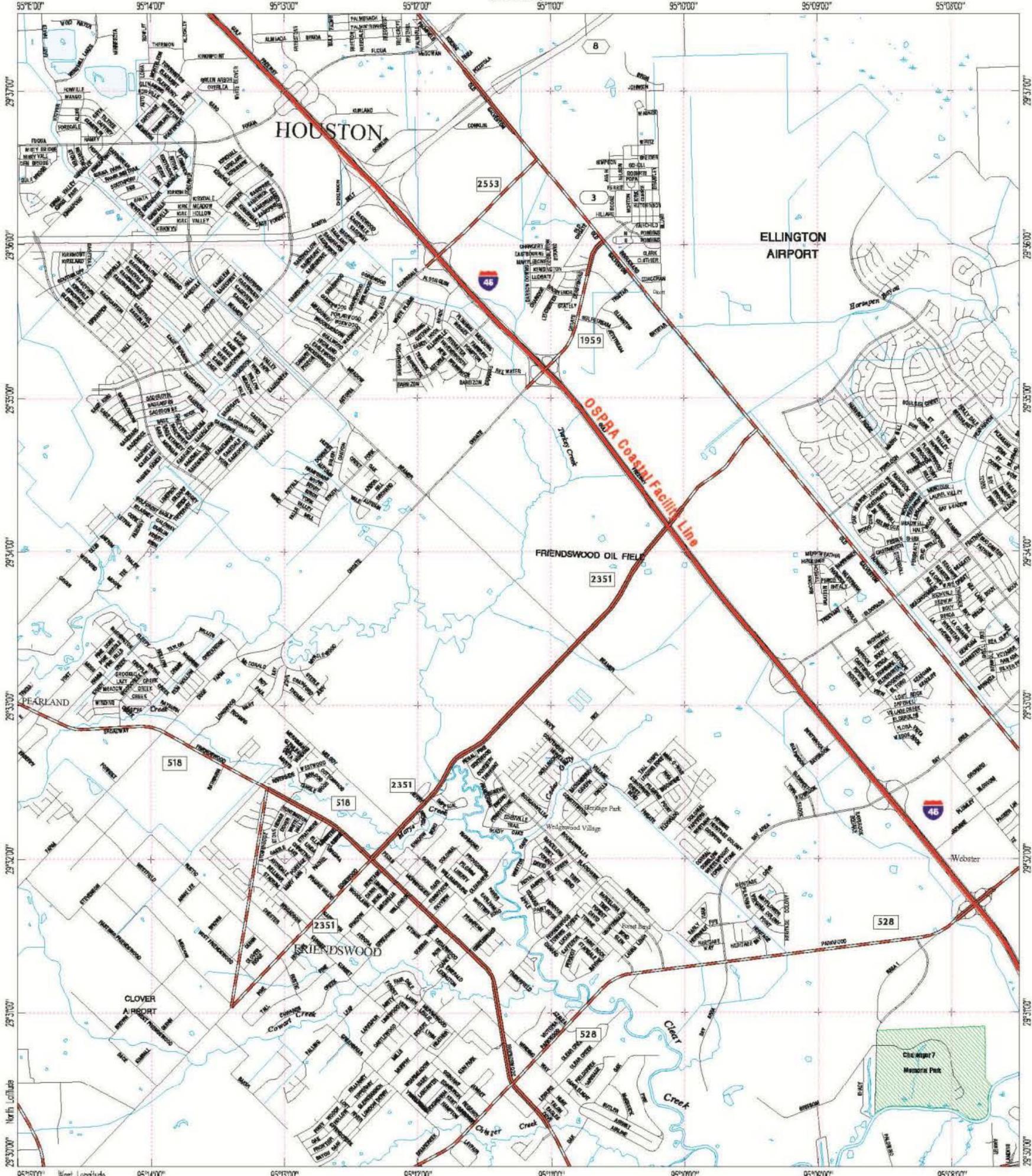
2994-423



Map Legend

- Lake, Bay, River
- Marsh, Wetland, Swamp
- Flats (Mud, Sand, Tide)
- Conservation Area
- Divided Highway
TxDOT
- State/Federal Highway
TxDOT
- City Street/County Road
TxDOT

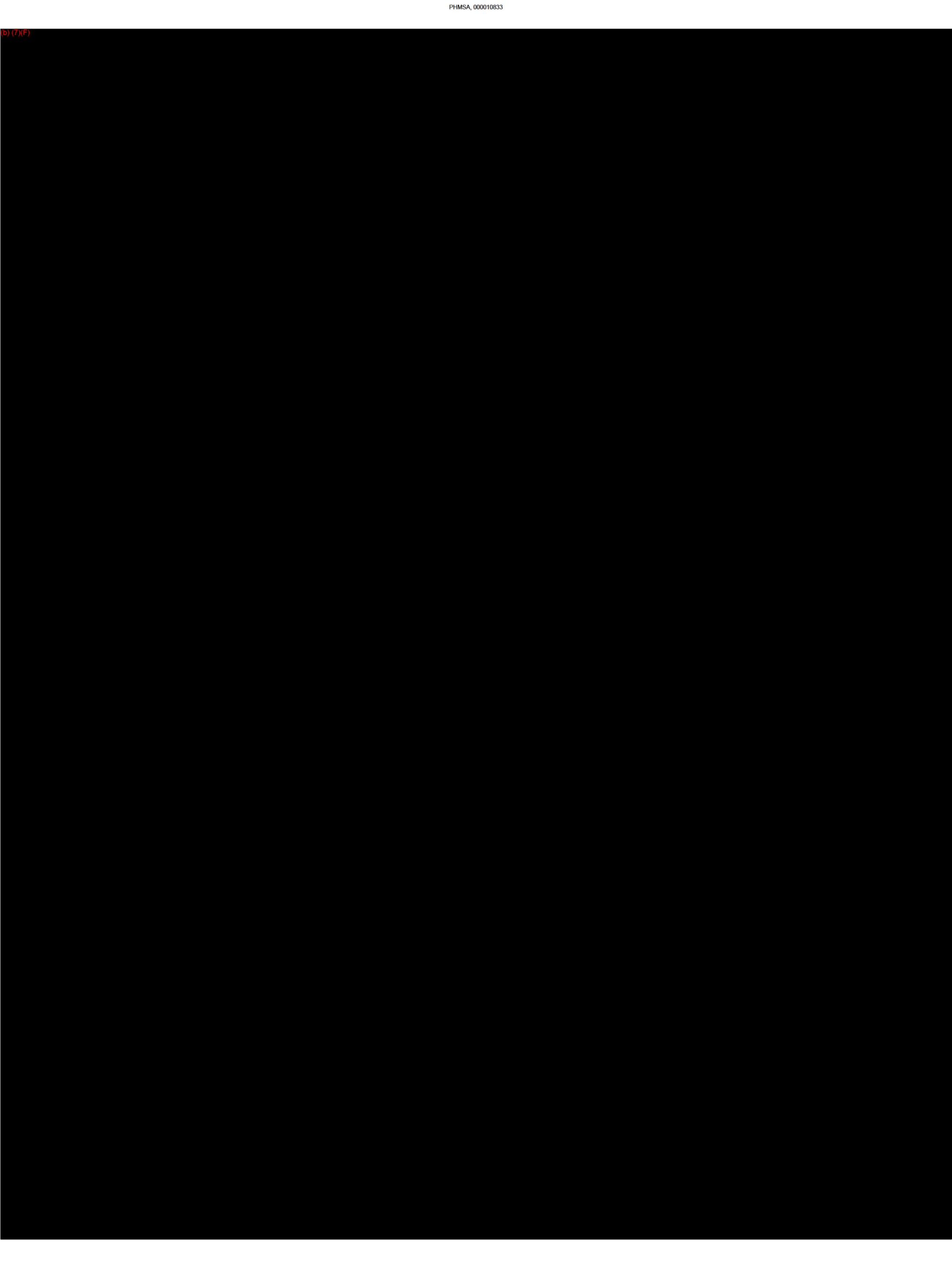
Friendswood Base Map (PASADENA)



Map Legend

- Lake, Bay, River
- Marsh, Wetland, Swamp
- Fats (Mud, Sand, Tide)
- Divided Highway
TxDOT
- State/Federal Highway
TxDOT
- City Street/County Road
TxDOT
- OSPRA Coastal Facility Designation Line
GLO

(b) (7)(F)



LEAGUE CITY

Map #35

HUMAN USE RESOURCES

Boat Ramps

RARNUM	NAME
H574	Clear Lake
H577	Shoreacres
H591	Clear Lake Shores
H600	Timber Cove Subdivision
H608	Walter Hall County Park
H615	Clear Lake Parkside Lift
H617	Sneak'N Out
H622	League City FM 270
H731	Kemah Bridge

Heliports

RARNUM	MANAGER	PHONE
H1263	Ronald C. Bailey	(713)-483-3196
H1345	D. Bailey	(713)-474-6000

Marinas

RARNUM	NAME	ADDRESS	PHONE
H122	Capt. Wicks Landing	307 1st st. Kemah 77565	(713) 334-1563
H123	Nassau Bay Yacht Club	1120 NASA Rd. 1 Ste. 315 Houston 77058	(713) 333-2570
H124	South Shore Harbour Marina	2400 South Shore Blvd. League City 77573	(713) 334-0515
H126	Legend Point	1300 Marina Bay Dr Clear Lake Shores 77565	(713) 334-3811
H127	Lakewood Yacht Club	Rt. 1, 2425 NASA Rd. 1 Seabrook 77586	(713) 474-2511
H129	Watergate Yachting Center	1500 FM 2094 Clear Lake Shores 77565-2205	(713) 334-1511
H130	Waterford Harbor Yacht Club	800 Mariners Dr Kemah 77565	(713) 334-4400
H131	Seabrook Shipyard	Rt. 1, Box 76 Seabrook 77586-9801	(713) 474-2586
H132	Bal Harbour	123 Lakeside Lane Nassau Bay 77058	(713) 333-5168
H144	Portofino Harbour	1 Portofino Plaza Clear Lake Shores	(713)-334-6007
H145	Marina Del Sol	1203 Twin Oaks Blvd. Kemah 77565	(713) 334-3909
H146	Lakeside Yachting Center	2515-B NASA Rd. 1 Seabrook 77586	(713) 326-5547
H148	Blue Dolphin Yachting Center	4450 NASA Rd. 1 & 7th Street Seabrook 77586	(713) 474-4450
H149	Nassau Bay Hilton Marina	3000 NASA Rd. 1 Houston 77058	(713) 333-9300
H150	Lafayette Landing	555 Bradford St. Kemah 77565	(713) 334-2284
H151	Anchorage Apartments & Marina	451 Constellation League City 77573	(713) 334-2527
H152	The Landing	4445 NASA Road #1 Seabrook 77586	(713)-326-2714
H153	Marina Bay	4011 NASA Road #1 Seabrook 77586	(713)-326-3344
H154	Houston Yacht Club	3620 Marinar Drive Laporte 77571	(713) 471-1255
H158	Parkside Marina	4949 NASA Rd 1 Seabrook 77586	(713) 326-4949
H159	Clear Lake Marine Center Inc	4141 NASA Rd 1 Seabrook 77586	(713) 326-4626
H442	El Lago Marina	P.O. Box 972 Seabrook 77586	(713) 326-2287

Water Intake Points

RARNUM	OWNER	TYPE
H059	City of League City	1
H073	Houston L&P-Webster	6

LEAGUE CITY CONTINUED

BIOLOGICAL RESOURCES

Birds																				
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
131	Osprey	S		SC	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
216	Water fowl				X	X	X			X	X	X	X				-	-	-	-
	Osprey	S		SC	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Wood duck				X	X	X	X	X	X	X	X	X	X	X	FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP	
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
221	Terns				X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	MAR-SEP	
781	Attwater's greater prairie-chicken	S/F		E																

Reptiles/Amphibians

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	HATCHING
771	Texas diamondback terrapin	F		C2														
773	Gulf saltmarsh snake	C2		N														

Fish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
216	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
217	Pinfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Sheepshead minnow				X	X	X	X	X	X	X	X	X	X	X	X	MAR-OCT	MAR-DEC
	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT
218	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
221	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Sheepshead				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-AUG
	Atlantic croaker			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Red drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Sheepshead minnow				X	X	X	X	X	X	X	X	X	X	X	X	MAR-OCT	MAR-DEC
	Gulf menhaden			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Gafftopsail catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	MAY-AUG
	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT
226	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Sheepshead				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-AUG
227	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
228	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
	Atlantic croaker			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Red drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Gulf menhaden			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC

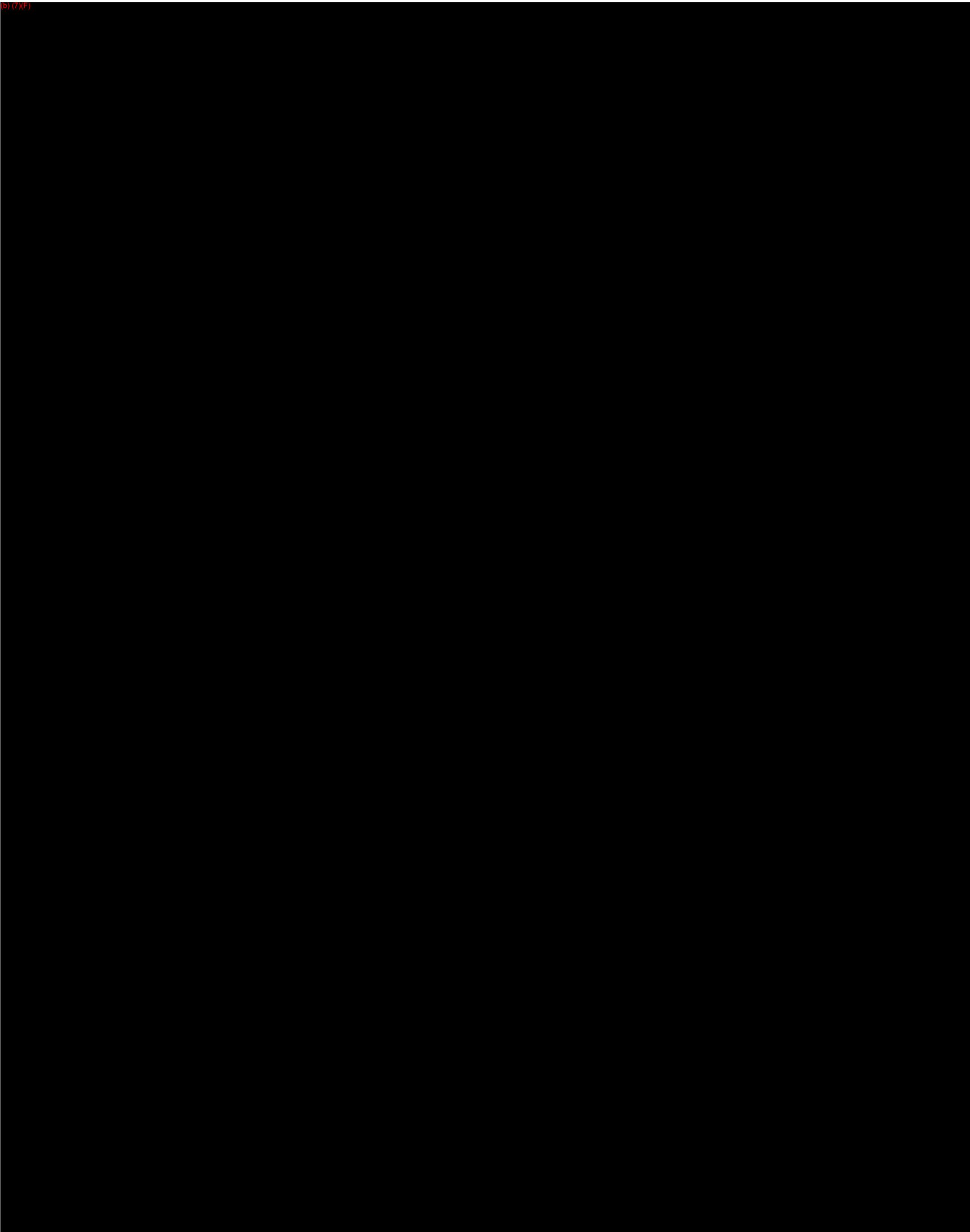
Shellfish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
217	Grass shrimp				X	X	X	X	X	X	X	X	X	X	X	X	-	-
218	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
221	White shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Brown shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
224	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
226	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
227	Grass shrimp				X	X	X	X	X	X	X	X	X	X	X	X	-	-
228	White shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Brown shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG

Plants/Communities

RARNUM	NAME	S/F	T/E
224	Smooth cordgrass		
774	Texas windmill-grass	F	C2
	Houston machaeranthera	F	C2

(b) (7)(F)



BACLIFF

Map #34

HUMAN USE RESOURCES

Boat Ramps

RARNUM	NAME
H546	HL&P Galveston County Park
H604	El Jardin
H724	Galveston County Park

Marinas

RARNUM	NAME	ADDRESS	PHONE
H128	Texas Corinthian Yacht Club	104 Park Cr. P.O. Box 577 Kemah 77565-0577	(713) 339-1566

BIOLOGICAL RESOURCES

Reptiles/Amphibians

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	HATCHING
234	Kemp's ridley sea turtle	S/F	E/E	LOW	X	X	X	X	X	X	X	X	X	X	X	X	-	-
771	Texas diamondback terrapin	F	C2															

Fish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
229	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Gulf menhaden			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Pinfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT
	Bay anchovy			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
230	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Bay anchovy			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Gulf menhaden			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Atlantic croaker			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT
	Pinfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
235	Striped bass				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Sheepshead				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-AUG
388	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT

Shellfish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV.
171	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
229	Blue crab			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	White shrimp			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Brown shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
230	Blue crab			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Brown shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
231	Stone crab				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-SEP
234	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
388	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL

Plants/Communities

RARNUM	NAME	S/F	T/E
774	Texas windmill-grass	F	C2

BAYCLIFF**Map # 34**

Polygon #	Priority	Description: what organism(s), habitat(s)?
1	High	Bacliff shoreline. Diamondback terrapin habitat.
2	Low	Mouth of unnamed cut between Bacliff and San Leon. Recreational fishing (high).
3	Low	Seabrook shoreline and lower Pine Gully. Wetlands (medium).
4	Low	Red Fish Island. Rookery (medium), when emergent. <u>Note:</u> Red Fish Island is transient and may or may not be emergent from year to year. It is presently all submerged (1993).

SMITH POINT

Map #33

HUMAN USE RESOURCES

Boat Ramps

RARNUM	NAME
H568	Smith Point
H714	James H. Robbins Memorial Park

BIOLOGICAL RESOURCES

Birds																				
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
250	Wood stork	S	T		X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	American white pelican				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Rails				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Reddish egret	S	T		X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP	
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Roseate spoonbill				X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP	
251	Raptors			HIGH	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
649	Great blue heron			35	X	X	X	X	X	X	X	X	X	X	X	FEB-JUN	FEB-JUN	FEB-JUN	MAR-JUL	
	Snowy egret			40	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	APR-JUL	APR-JUL	MAY-AUG	
	Olivaceous cormorant			250	X	X	X	X	X	X	X	X	X	X	X	JAN-JUL	JAN-JUL	JAN-JUL	FEB-AUG	
	Roseate spoonbill			60	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP	
	Black-crowned night heron			6	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP	
650	White ibis			5000	X	X	X	X	X	X	X	X	X	X	X	FEB-JUN	FEB-JUN	FEB-JUN	MAR-JUL	
	Roseate spoonbill			50	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP	
	Black skimmer			250	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-SEP	APR-SEP	
	Laughing gull			15	X	X	X	X	X	X	X	X	X	X	X	FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP	
	Cattle egret			10	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	APR-JUL	APR-JUL	APR-AUG	
	Tricolored heron			5	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP	
	Great blue heron			3	X	X	X	X	X	X	X	X	X	X	X	FEB-JUN	FEB-JUN	FEB-JUN	MAR-JUL	
	Snowy egret			5	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	APR-JUL	APR-JUL	MAY-AUG	
	Olivaceous cormorant			10	X	X	X	X	X	X	X	X	X	X	X	JAN-JUL	JAN-JUL	JAN-JUL	FEB-AUG	
	Great egret			5	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	MAR-JUL	MAR-JUL	MAR-AUG	
	Black-crowned night heron			30	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP	

Reptiles/Amphibians

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	HATCHING	
238	Diamondback terrapin				X	X	X	X	X	X	X	X	X	X	X	APR-MAY	MAY-JUL		
771	Texas diamondback terrapin	C2	N																
779	Crawfish frog	NA	N																

Fish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV.
201	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC	
	Spot				X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	NOV-FEB	
	Least puffer				X	X	X	X	X	X	X	X	X	X	X	-	-	
	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC	
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR	
	Atlantic croaker			HIGH	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT	
	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT	
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB	
238	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC	
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC	
241	Spot				X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	NOV-FEB	
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR	
	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT	
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT	
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB	
243	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC	
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC	
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR	
	Red drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC	

Shellfish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV.
201	Brackishwater clam				X	X	X	X	X	X	X	X	X	X	X	-	-	
	White shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT	
	Blue crab			HIGH	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG	
	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL	
	Brown shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN	
238	White shrimp				X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT	
	Grass shrimp				X	X	X	X	X	X	X	X	X	X	X	-	-	
241	White shrimp				X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT	
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG	
	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL	
243	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL	
250	Grass shrimp				X	X	X	X	X	X	X	X	X	X	X	-	-	

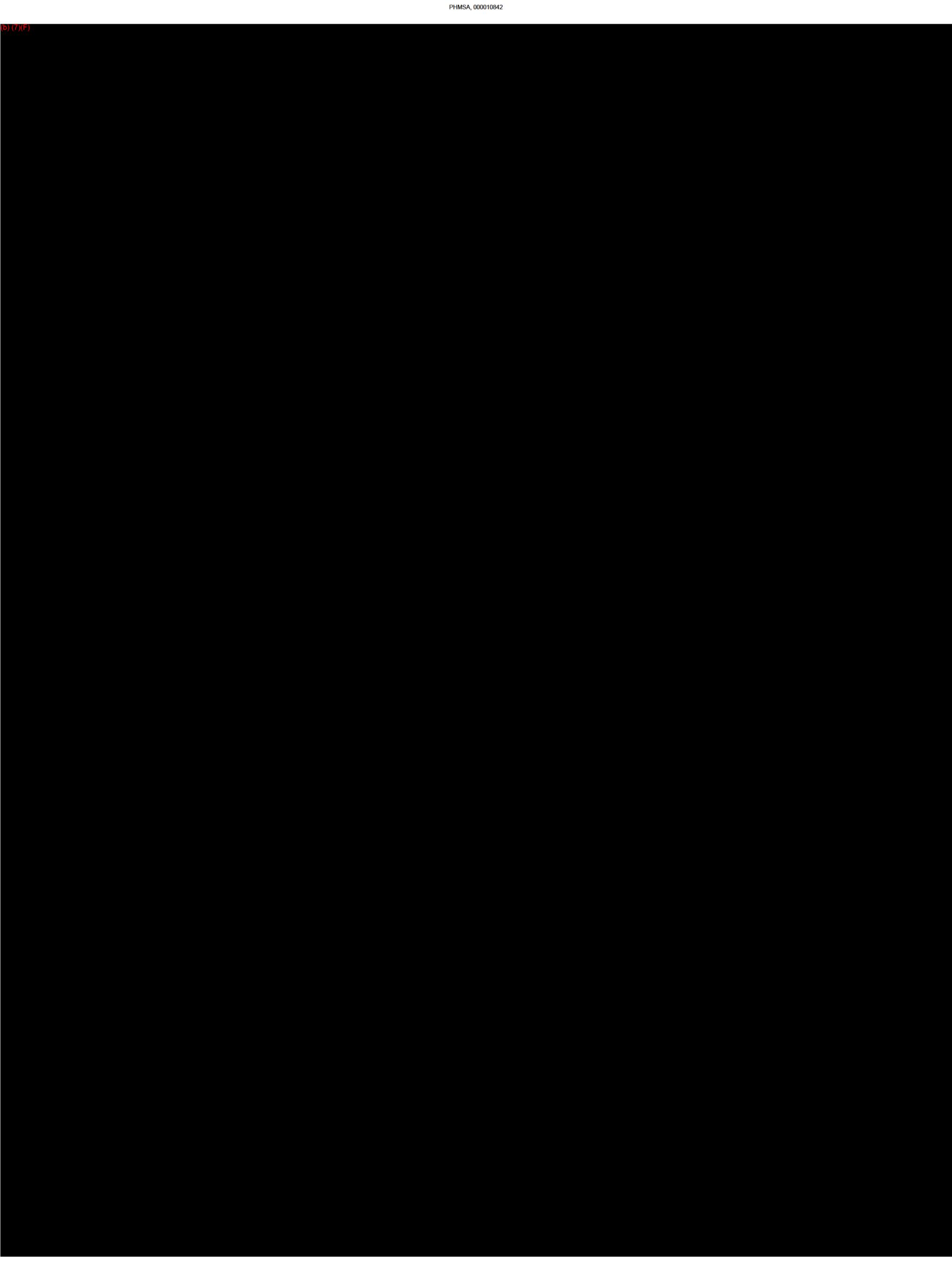
Plants/Communities

RARNUM	NAME	S/F	T/E	CONCEN
238	Smooth cordgrass			
250	Smooth cordgrass			

SMITH POINT**Map # 33**

Polygon #	Priority	Description: what organism(s), habitat(s)?
1	Low	Island west of Smith Point, north of Trinity River Channel. Rookery (high).
2	Low	South shore of Smith Point. Rookery (high). Candy Abshier WMA.
3	Medium	South shore of Smith Point. Wetlands (medium), bird habitat (medium). Candy Abshier WMA.
4	Medium	Smith Point perimeter. Nursery (high), bird habitat (high).
5	High	Smith Point Marsh. Wetlands (high), bird habitat (high), nursery (high).
6	Low	Uplands in Smith Point Marsh. Bird habitat (high).
7	Medium	Vingt-et-Un Islands and Trinity River Channel spoil islands. Rookery (high), nursery (high). <i>Note:</i> Nesting season is February-August in rookeries (polygons 1, 2, 7).
<i>Pinchpoint at mouth of unnamed slough in Smith Point can be boomed to protect polygons 8 and 9.</i>		
8	Medium	Unnamed slough in town of Smith Point (a, b). Wetlands (high), nursery (high).
9	Low	Unnamed slough in town of Smith Point. Nursery (high).
10	High	Frankland Point perimeter. Nursery (high), diamondback terrapin habitat.
11	High	Frankland Point marsh. Wetlands (high), nursery (high), diamondback terrapin habitat.
12	High	East Smith Point benchmark. Year-round diamondback terrapin habitat. Continued on Lake Stephenson quad.

(b) (7)(F)



LAKE STEPHENSON

Map #32

HUMAN USE RESOURCES

Water Intake Points

RARNUM	OWNER	TYPE
H094	Brown Foundation Inc	6
H095	Louise Barrow Gorton	1

BIOLOGICAL RESOURCES

Birds

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
274	Rails				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Waterfowl				X	X	X	X		X	X	X	X	X	X	X	-	-	-	-
277	American wigeon				X	X	X	X						X	X	X	-	-	-	-
	Mallard				X	X	X	X						X	X	X	-	-	-	-
	Teals				X	X	X	X						X	X	X	-	-	-	-
	Northern pintail				X	X	X	X					X	X	X	X	-	-	-	-
	Snow goose			HIGH	X	X	X							X	X	X	-	-	-	-
	White-fronted goose			HIGH	X	X	X							X	X	X	-	-	-	-
	Waterfowl				X	X	X	X				X	X	X	X	X	-	-	-	-
	Mottled duck				X	X	X	X	X	X	X	X	X	X	X	X	JAN-AUG	JAN-AUG	JAN-AUG	FEB-SEP
	Canada goose				X	X	X	X						X	X	X	-	-	-	-
	Gadwall			HIGH	X	X	X	X						X	X	X	-	-	-	-
278	Gulls				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Lesser scaup				X	X	X	X						X	X	X	-	-	-	-
	Waterfowl			HIGH	X	X	X	X				X	X	X	X	X	-	-	-	-
	Ruddy duck				X	X	X							X	X	X	-	-	-	-
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Shorebirds			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
280	Magnificent frigatebird				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-

Reptiles/Amphibians

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	HATCHING
277	American alligator				X	X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-DEC
278	American alligator				X	X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-DEC

Fish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
273	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Gulf menhaden			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
274	Gulf killifish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-SEP	APR-SEP
	Sheepshead minnow				X	X	X	X	X	X	X	X	X	X	X	X	MAR-OCT	MAR-DEC
278	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Gulf killifish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-SEP	APR-SEP
	Sheepshead minnow				X	X	X	X	X	X	X	X	X	X	X	X	MAR-OCT	MAR-DEC
280	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Spot				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	NOV-FEB
	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Sheepshead				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-AUG
	Seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Southern flounder			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Pinfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY

Shellfish

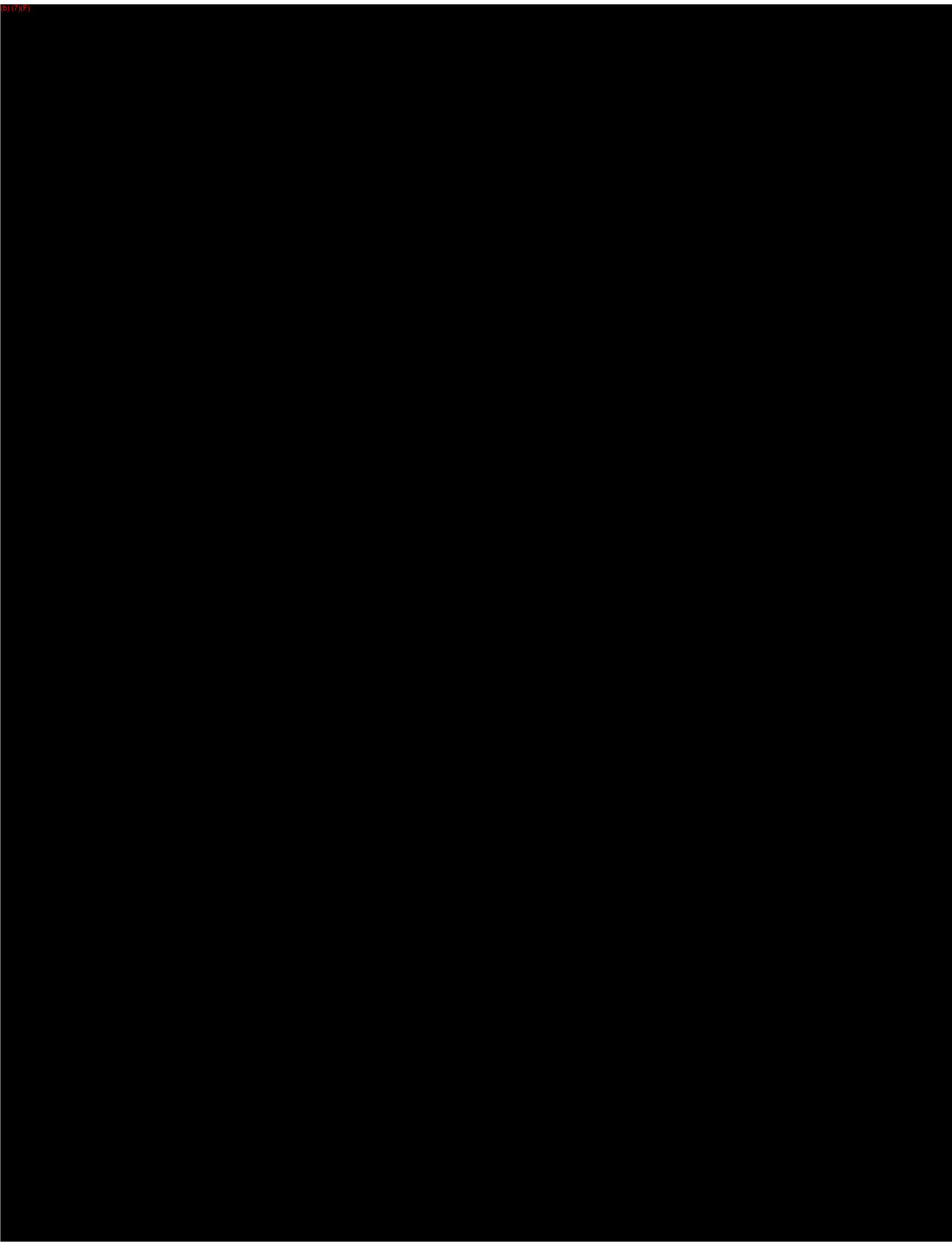
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV.
273	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Brown shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
274	Brown shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	Grass shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	-
280	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG

LAKE STEPHENSON**Map # 32**

Note: Seagrass beds along southeastern shore of Trinity Bay, south of Lone Oak Bayou. These areas should be avoided during response activities to prevent physical damage to vegetation. Beds may not occur in the same location from year to year.

Polygon #	Priority	Description: what organism(s), habitat(s)?
<i>Pinchpoints at (1) Lone Oak Bayou and (2) unnamed inlet south of Lone Oak Bayou. Can be boomed to protect parts of polygons 1, 2, 3, 4, 5, and 6 (Gordy Marsh) from spills from Trinity Bay.</i>		
1	High	Trinity Bay shore. Bird habitat (high), wetlands (high), nursery (medium). <u>Note:</u> USGS base map shows islands parallelling Trinity River Channel that are no longer emergent.
2	Medium	Southern Gordy Marsh. Bird habitat (high), wetlands (high).
3	Medium	Mouth of Lone Oak Bayou. Bird habitat (high), nursery (high).
4	Medium	Lone Oak Bayou drainage, (a) western and (b) eastern segments. Nursery (high), wetlands (high).
5	High	Lower Lone Oak Bayou drainage. Bird habitat (high), nursery (high), wetlands (high).
<i>Pinchpoint at culvert under FM 562 can be boomed to prevent migration of spills between Lone Oak Bayou/Gordy Marsh system and Lake Stephenson/Willow Marsh system.</i>		
6	Low	Lake Stephenson area and northern Willow Marsh. Wetlands (high). Continued on Frozen Point quad.
<i>Pinchpoint at unnamed cut south of Wallis Lake can be boomed to protect polygons 7 and 8 from spills from East Bay.</i>		
7	Medium	Wallis Lake-Lake Surprise area (southern Willow Marsh), (a) northern and (b) southern portions. Wetlands (high), bird habitat (medium). Part of Moody NWR. Continued on Frozen Point quad.
8	Medium	Wallis Lake-Lake Surprise. Wetlands (high), bird habitat (medium), nursery (medium). Waterfowl. Bulk of Moody NWR.
<i>Pinchpoints at (1) Stephenson Point and (2) unnamed inlet east of Stephenson Point can be boomed to protect polygon 9.</i>		
9	Medium	Stephenson Point marsh. Wetlands (high), bird habitat (medium).
10	High	South shore of Smith Point. Year-round diamondback terrapin habitat. Continued on Smith Point quad.
11	High	East Frankland Point. Wetlands (high), nursery (high), diamondback terrapin habitat. Continued on Smith Point quad.
12	High	East Frankland Point. Wetlands (high), nursery (high), diamondback terrapin habitat. Continued on Smith Point quad.

(b) (7)(F)



FROZEN POINT

Map #31

HUMAN USE RESOURCES

Boat Ramps

RARNUM	NAME
H567	Charles W. Lauderdale County
H620	Anahuac Nat'l Wildlife Refuge
H621	Anahuac Nat'l Wildlife Refuge

Water Intake Points

RARNUM	OWNER	TYPE
H096	Solomon Wesley Barrow ET AL	1

BIOLOGICAL RESOURCES

Birds

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
67	Migratory songbirds																			
284	American wigeon				X	X	X	X					X	X	X	-	-	-	-	
	Gadwall				X	X	X	X					X	X	X	-	-	-	-	
	Northern shoveler				X	X	X	X					X	X	X	-	-	-	-	
	Geese				X	X	X	X					X	X	X	-	-	-	-	
	Teals				X	X	X	X					X	X	X	-	-	-	-	
	Northern pintail				X	X	X	X					X	X	X	-	-	-	-	
	Northern harrier				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP
	Virginia rail				X	X	X	X					X	X	X	-	-	-	-	
	Sora rail				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Clapper rail				X	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	APR-SEP
	King rail				X	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	APR-SEP
	Yellow rail				X	X	X	X					X	X	X	-	-	-	-	
	Roseate spoonbill				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
286	Teals				X	X	X	X					X	X	X	-	-	-	-	
	Geese				X	X	X	X					X	X	X	-	-	-	-	
	American wigeon				X	X	X	X					X	X	X	-	-	-	-	
	Gadwall				X	X	X	X					X	X	X	-	-	-	-	
	Northern pintail				X	X	X	X					X	X	X	-	-	-	-	
	Osprey	S	SC		X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Rails				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
287	Teals				X	X	X	X					X	X	X	-	-	-	-	
	Gadwall				X	X	X	X					X	X	X	-	-	-	-	
	American wigeon				X	X	X	X					X	X	X	-	-	-	-	
	Northern pintail				X	X	X	X					X	X	X	-	-	-	-	
	American white pelican				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Osprey	S	SC		X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Clapper rail				X	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	APR-SEP
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
288	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Rails				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Shorebirds				X	X	X	X					X	X	X	-	-	-	-	
292	Rails				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
293	Pied-billed grebe				X	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	APR-SEP
	Common goldeneye				X	X	X						X	X	X	-	-	-	-	
	Lesser scaup				X	X	X						X	X	X	-	-	-	-	
294	Lesser scaup				X	X	X						X	X	X	-	-	-	-	
	Magnificent frigatebird				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
295	Shorebirds				X	X	X	X					X	X	X	-	-	-	-	
297	Green-winged teal				X	X	X	X					X	X	X	-	-	-	-	
	Gadwall				X	X	X	X					X	X	X	-	-	-	-	
	American wigeon				X	X	X	X					X	X	X	-	-	-	-	
302	Piping plover	S/F	T/T		X	X	X	X					X	X	X	-	-	-	-	
	Shorebirds				X	X	X	X					X	X	X	-	-	-	-	
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Roseate spoonbill				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP
	Gulls				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Brown pelican	F	E		X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP
303	Shorebirds				X	X	X	X					X	X	X	-	-	-	-	

Reptiles/Amphibians

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	HATCHING
284	American alligator				X	X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-DEC
302	Diamondback terrapin				X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	MAY-JUL

Fish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
293	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Sand seatrout			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Black drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR

FROZEN POINT CONTINUED

BIOLOGICAL RESOURCES CONT.

Fish Continued

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
294	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Silver perch				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Tarpon				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
	Red drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Spot				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	NOV-FEB
297	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
299	Black drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Seatrout			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
302	Atlantic croaker			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Tarpon				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Spotted seatrout			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Gulf menhaden			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR

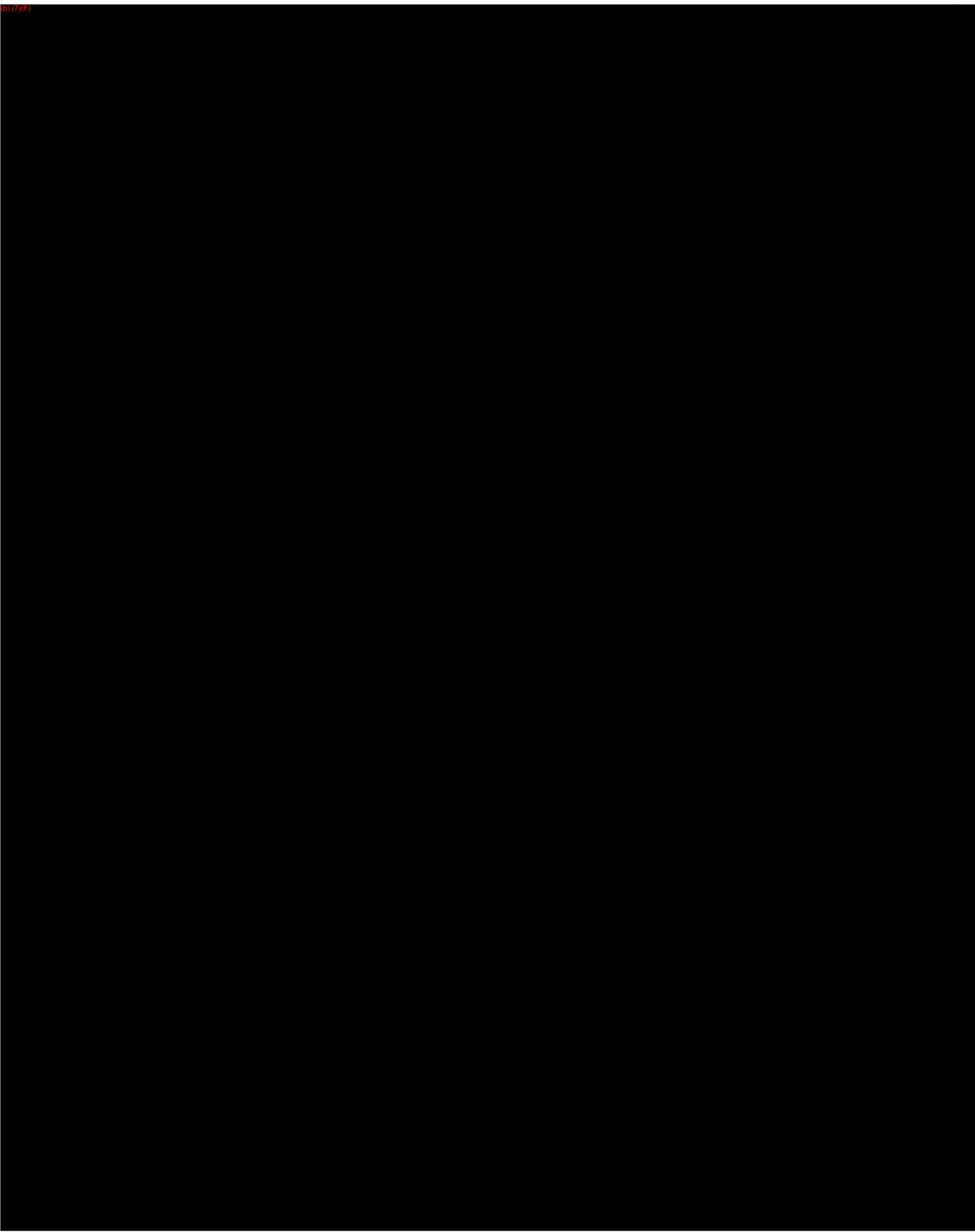
Shellfish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
293	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Brown shrimp			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
294	Brown shrimp			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
297	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Crustaceans				X	X	X	X	X	X	X	X	X	X	X	X	-	-
299	Brown shrimp			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
302	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
303	Crustaceans				X	X	X	X	X	X	X	X	X	X	X	X	-	-

Plants/Communities

RARNUM	NAME	S/F	T/E
286	Salt meadow cordgrass (wiregrass)		
	Salt grass		
	Rushes		
287	Salt grass		
	Salt meadow cordgrass (wiregrass)		
	Rushes		
295	Rushes		
	Salt meadow cordgrass (wiregrass)		
	Salt grass		
297	Smooth cordgrass		
303	Smooth cordgrass		

(b) (7)(F)



HIGH ISLAND

Map #30

HUMAN USE RESOURCES

Beach Access Points

ID	STREET
96	Rollover Pass
97	Rollover Pass
98	Kirks Road
	Mae Street
99	Elizabeth Street
100	Margaret Road
101	Gayle Street
102	Bay Street
103	Beaumont Avenue
104	Austin Drive
105	Faggards Road
106	Chantell Drive
107	Evans Street
108	Legers Street
109	Access Point 7
110	Access Point 6
111	Access Point 5
112	Access Point 4
113	Access Point 3
114	Access Point 2
115	Access Point 1

Boat Ramps

RARNUM	NAME
H576	High Island State

Water Intake Points

RARNUM	OWNER	TYPE
H104	U. S. Anahuac Wildlife Refuge	6

BIOLOGICAL RESOURCES

Mammals

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	MATING	CALVING
309	Mink				X	X	X	X	X	X	X	X	X	X	X	X	-	-
310	Bottlenose dolphin				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC

Birds

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
67	Migratory songbirds																			
307	Gadwall				X	X	X	X				X	X	X	X	-	-	-	-	
	Geese				X	X	X	X				X	X	X	X	-	-	-	-	
	Waterfowl				X	X	X	X				X	X	X	X	-	-	-	-	
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Rails				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
309	Osprey	S	SC		X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Black-crowned night heron				X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP	
	Northern harrier				X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP	
	Wading birds			HIGH	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	
	Virginia rail				X	X	X	X				X	X	X	X	-	-	-	-	
	King rail				X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	APR-SEP	
	Clapper rail				X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	APR-SEP	
	Yellow rail				X	X	X					X	X	X	-	-	-	-		
	Roseate spoonbill				X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP	
	Rails			HIGH	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	
	Common moorhen				X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	APR-SEP	
	Waterfowl				X	X	X					X	X	X	-	-	-	-	-	
	Green-winged teal			HIGH	X	X	X	X				X	X	X	-	-	-	-	-	
	American wigeon			HIGH	X	X	X					X	X	X	-	-	-	-	-	
	Northern pintail				X	X	X					X	X	X	-	-	-	-	-	
	Northern shoveler				X	X	X					X	X	X	-	-	-	-	-	
	Gadwall			HIGH	X	X	X					X	X	X	-	-	-	-	-	
	Mottled duck				X	X	X	X	X	X	X	X	X	X	X	JAN-AUG	JAN-AUG	JAN-AUG	FEB-SEP	
	Geese				X	X	X					X	X	X	-	-	-	-	-	
316	Roseate spoonbill				X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP	
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Brown pelican	F	E		X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP	
	Terns				X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	
	Cormorant				X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	
	Magnificent frigatebird				X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	
	Gulls				X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	
	Shorebirds				X	X	X	X				X	X	X	-	-	-	-	-	
	Piping plover	S/F	T/T		X	X	X	X				X	X	X	X	-	-	-	-	
	Black skimmer				X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-SEP	APR-SEP	

HIGH ISLAND CONTINUED

BIOLOGICAL RESOURCES CONT.

Reptiles/Amphibians

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	HATCHING
309	American alligator				X	X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-DEC
310	Kemp's ridley sea turtle	S/F	E/E	LOW	X	X	X	X	X	X	X	X	X	X	X	X	-	-
316	Diamondback terrapin				X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	MAY-JUL
771	Texas diamondback terrapin	F	C2															
773	Gulf saltmarsh snake	F	C2															

Fish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
310	Tarpon	S	SC		X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Spanish mackerel				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Southern kingfish (whiting)				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Florida pompano				X	X	X	X	X	X	X	X	X	X	X	X	-	-
312	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
313	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Atlantic croaker			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Gizzard shad				X	X	X	X	X	X	X	X	X	X	X	X	-	-
314	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Gulf menhaden			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Atlantic croaker			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT
	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Spot				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	NOV-FEB
	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC

Shellfish

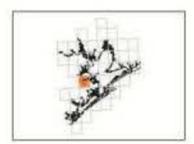
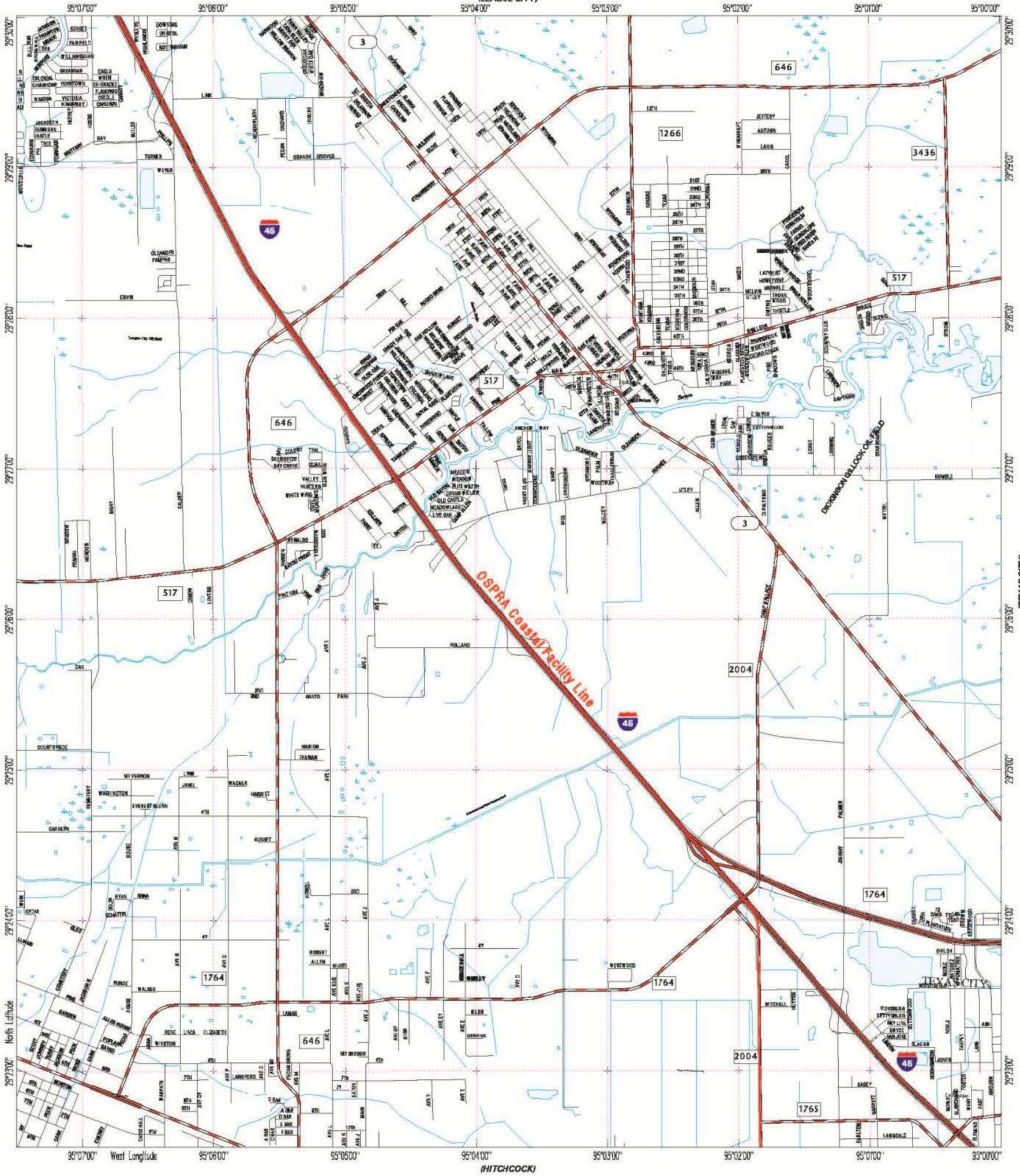
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV.
310	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
312	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
313	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN

Plants/Communities

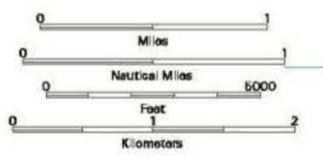
RARNUM	NAME	S/F	T/E
24	Marshhay cordgrass series		
780	Corrells false dragon-head	F	C2
789	Coastal live oak-pecan series		

Dickinson Base Map

(LEAGUE CITY)



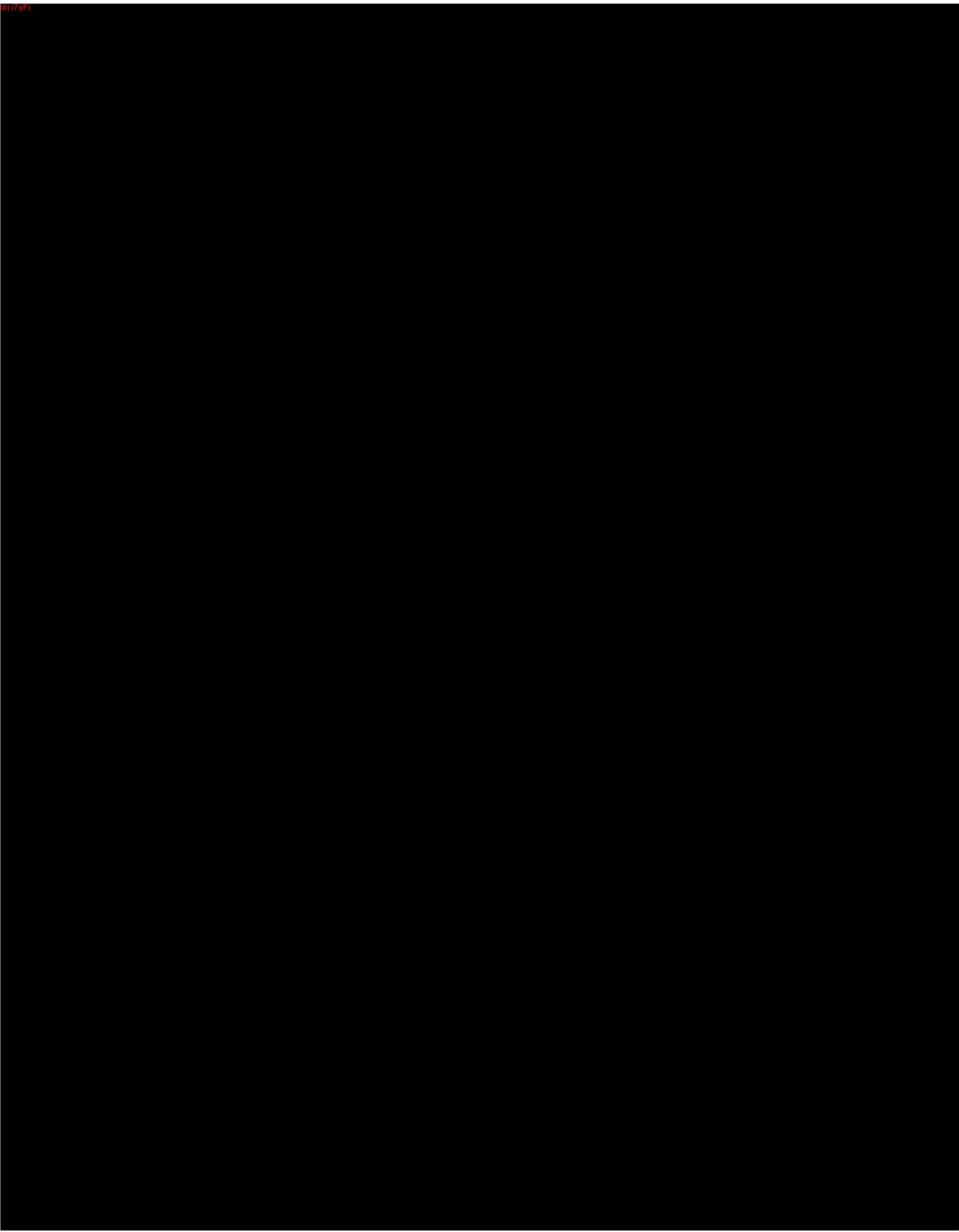
2895-144



Map Legend

- Lake, Bay, River
- Marsh, Wetland, Swamp
- Flats (Mud, Sand, Tidal)
- Divided Highway
- State/Federal Highway
- City Street/County Road
- OSRA Coastal Facility Designation Line

(b) (7)(F)



TEXAS CITY

Map #39

HUMAN USE RESOURCES

Boat Ramps			
RARNUM	NAME		
H549	Marge's Bait Camp		
H740	50/50 Camp		
H741	Rilats and Gastians		
H742	Curl's		
H744	The Fish Spot		
H745	Dickinson's Bayou Public		
Heliports			
RARNUM	MANAGER		PHONE
H1300	G. P. Larsen		(409) 938-5000
Marinas			
RARNUM	NAME	ADDRESS	PHONE
H121	Capt. Wally's Marina at April Fool Pt	815 Av O San Leon	(713) 339-1232
H133	Dollar Point	4220 Bay St Extension Texas City	(409) 945-4686
H134	San Leon Marina (Admiralty Trust)	105 6th St. San Leon 77539	(713) 339-1515
H136		Rt 3 Box 375 Dickinson 77539-9801	(713) 339-1194
H147	Eagle Point Camp	101 1st San Leon 77539	(713) 339-1131
H161	Moses Lake Marina	4009 20th St. N Texas City	(409) 943-4444
H162	Ray's Marina	4025 20th St N Texas City 77550	(409) 945-0989
Water Intake Points			
RARNUM	OWNER	TYPE	
H056	Sterling Chemicals Inc.	6	
H057	Houston L&P-Robinson Plant	6	
H058			

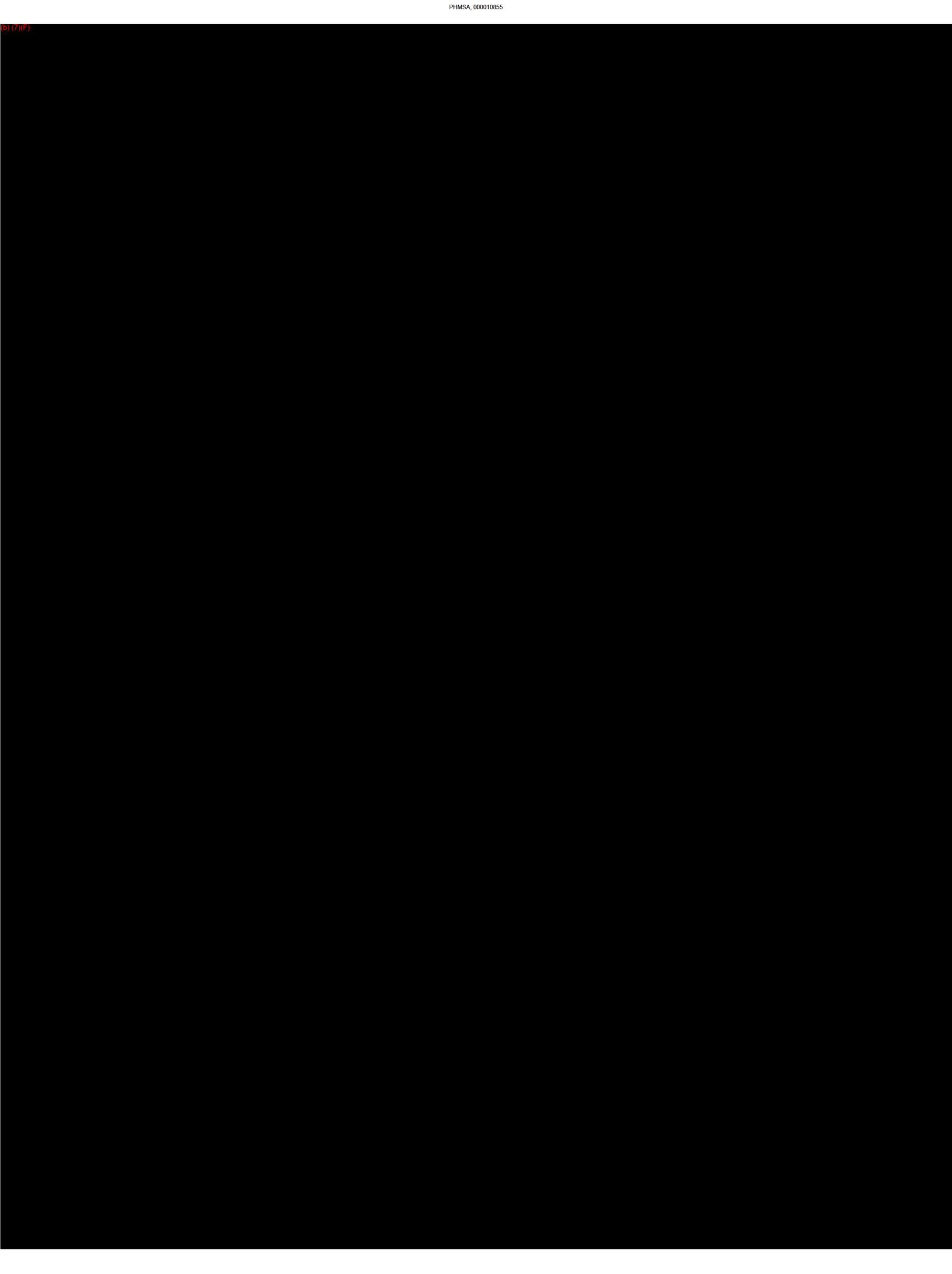
BIOLOGICAL RESOURCES

Birds																					
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING	
320	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	Rails				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
330	Terns				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
	Rails				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
	Black skimmer				X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-SEP	APR-SEP		
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
331	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
	Black skimmer				X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-SEP	APR-SEP		
	Terns				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
335	Olivaceous cormorant				X	X	X	X	X	X	X	X	X	X	X	JAN-JUL	JAN-JUL	JAN-JUL	FEB-AUG		
338	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
	Terns				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
	Black skimmer				X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-SEP	APR-SEP		
	Rails				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
	Waterfowl				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
339	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
	Terns				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
	Black skimmer				X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-SEP	APR-SEP		
	Waterfowl				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
343	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
	Black skimmer				X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-SEP	APR-SEP		
	Terns				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
347	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
	Rails				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
	Terns				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
	Black skimmer				X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-SEP	APR-SEP		
350	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
	Rails				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
356	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
	Rails				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
	Waterfowl				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
357	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
	Waterfowl				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
	Rails				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
781	Attwater's greater prairie-chicken	S/F	E/E		X	X	X	X	X	X	X	X	X	X	X	-	-	-	-		
Reptiles/Amphibians																					
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	HATCHING			
330	American alligator				X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-DEC				
331	Diamondback terrapin				X	X	X	X	X	X	X	X	X	X	X	APR-MAY	MAY-JUL				
335	Diamondback terrapin				X	X	X	X	X	X	X	X	X	X	X	APR-MAY	MAY-JUL				

TEXAS CITY CONTINUED

BIOLOGICAL RESOURCES CONT.																		
Fish																		
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
324	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
326	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
330	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
331	Sheepshead minnow				X	X	X	X	X	X	X	X	X	X	X	X	MAR-OCT	MAR-DEC
	Gulf killifish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-SEP	APR-SEP
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
335	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Pinfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
339	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT
	Atlantic croaker			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Gizzard shad				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Sheepshead minnow				X	X	X	X	X	X	X	X	X	X	X	X	MAR-OCT	MAR-DEC
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
345	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Pinfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
347	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
348	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
350	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
Shellfish																		
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
324	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Blue crab			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
326	Grass shrimp				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
330	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
331	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Brackishwater clam				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Grass shrimp				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
335	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
339	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
345	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
347	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
348	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN

(b) (7)(F)



PORT BOLIVAR

Map #38

HUMAN USE RESOURCES

Boat Ramps

RARNUM	NAME
H550	Texas City Dike
H614	Dan's
H732	Shirley's Cafeteria
H733	Hornbeck's Bait Camp
H743	Texas City Dike

Heliports

RARNUM	MANAGER	PHONE
H1326	Danny Nasser	(713) 951-4700
H1327	D. G. Nasser	(713) 951-4700

BIOLOGICAL RESOURCES

Birds

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
349	Common goldeneye				X	X	X	X					X	X	X	X	-	-	-	-
	Lesser scaup				X	X	X						X	X	X	X	-	-	-	-
	Common loon	S	SC		X	X	X	X					X	X	X	-	-	-	-	

Fish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
349	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Pinfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Atlantic croaker			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
360	Gulf menhaden			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Atlantic croaker			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
362	Gulf killifish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-SEP	APR-SEP

Shellfish

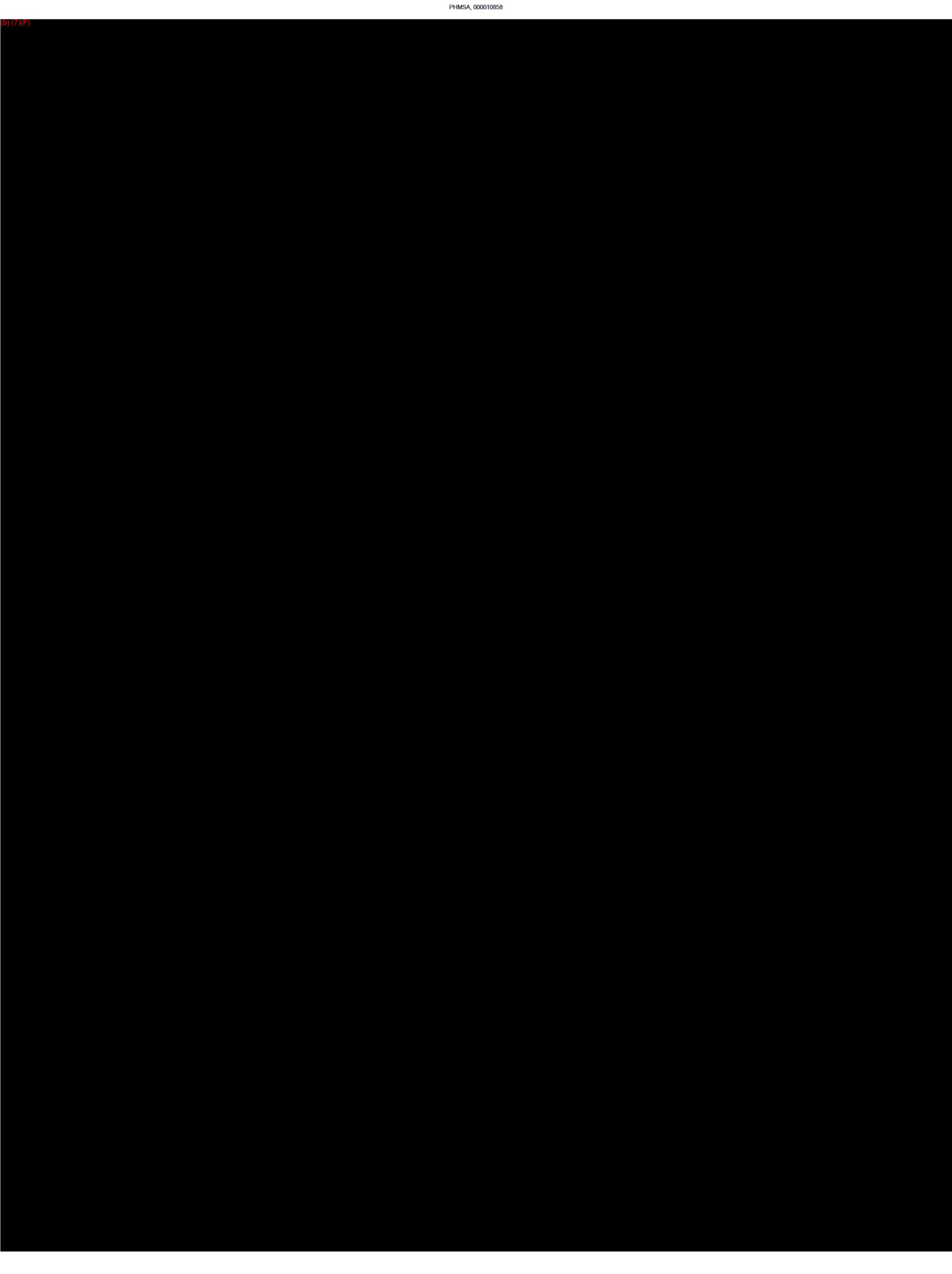
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV.
349	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
360	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Blue crab			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Brown shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	White shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT

PORT BOLIVAR

Map # 38

Polygon #	Priority	Description: what organism(s), habitat(s)?
1	Medium	Horseshoe Lake area. Wetlands (high), nursery (high). Continued on Galveston quad. Can be protected from spills from Bolivar Roads by booming mouth of Horseshoe Bayou on Galveston quad.
2	Low	Horseshoe Lake-Oyster Lake area. Wetlands (high). Continued on Galveston and Flake quads.
3	Caution	Hanna Reef area. Diamondback terrapin. <u>Note:</u> Isolated oyster reefs in Hanna Reef complex can be exposed during extremely low tides.

(b) (7)(F)



FLAKE

Map #37

HUMAN USE RESOURCES

Beach Access Points

ID	STREET
50	Rettilon Road
51	Magnolia Lane
52	Boyt Street
53	Helen Boulevard
54	Melody Drive
55	Honeysuckle Drive
56	Alma Street
57	Tinkle Lane
58	Jacks Road
59	O'Neal Road
61	Lazy Lane
62	Townsend Street
63	Gulfview Street
64	Surfview Street
65	Holiday Street
66	Palmetto Street
67	Wommack Street
68	West Street
69	Mr. G Street
70	Monkhouse Drive
71	Crystal Beach Road
72	Kahla Drive
73	Gulf Shores Street
74	Westview Street

Boat Ramps

RARNUM	NAME
H592	Boyt Road
H612	Shirlev's Blue Beacon Bait Camp

BIOLOGICAL RESOURCES

Mammals

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	MATING	CALVING
377	Bottlenose dolphin				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC

Birds

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
67	Migratory songbirds																			
366	Shorebirds				X	X	X	X	X			X	X	X	X	X	-	-	-	-
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	American avocet				X	X	X					X	X	X	X	X	-	-	-	-
	Piping plover	S/F	T/T		X	X	X	X				X	X	X	X	X	-	-	-	-
	Wilson's plover						X	X	X	X	X	X	X				APR-JUN	-	-	-
	Gulls				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Terns				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Cormorant				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
372	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Northern harrier				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP
373	Piping plover	S/F	T/T		X	X	X	X				X	X	X	X	X	-	-	-	-
375	Piping plover	S/F	T/T		X	X	X	X				X	X	X	X	X	-	-	-	-
	Waterfowl				X	X	X	X				X	X	X	X	X	-	-	-	-
377	Franklin's gull							X	X	X		X	X	X	X	X	-	-	-	-

Fish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
363	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Pinfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
364	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Spotted seatrout			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Black drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
373	Inland silverside				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Gizzard shad				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Pinfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR

FLAKE CONTINUED

BIOLOGICAL RESOURCES CONT.

Fish Continued

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
374	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Pinfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Inland silverside				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Gizzard shad				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
375	Inland silverside				X	X	X	X	X	X	X	X	X	X	X	X	-	-
376	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Pinfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT
	Spot				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	NOV-FEB
	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
377	Florida pompano				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Sharks				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
	Crevalle jack				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Spanish mackerel				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Southern kingfish (whiting)				X	X	X	X	X	X	X	X	X	X	X	X	-	-

Shellfish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV.
296	Crustaceans				X	X	X	X	X	X	X	X	X	X	X	X	-	-
363	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
364	Brown shrimp			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
373	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
374	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Brown shrimp			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	Grass shrimp				X	X	X	X	X	X	X	X	X	X	X	X	-	-
376	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	White shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG

Plants/Communities

RARNUM	NAME	S/F	T/E
296	Smooth cordgrass		
374	Smooth cordgrass		
375	Smooth cordgrass		

HUMAN USE RESOURCES

Beach Access Points

ID	STREET
75	Gulfway Street
76	Eastview Street
77	Alberdie Drive
78	Bowers Lane
79	Beaumont Drive
80	Clara Street
81	Gulf Road
82	Center Street
83	Kenlyn Drive
84	Driftwood Street
85	Seadrift Street
86	Ramada Boulevard
87	Nassau Drive
88	Red Fish Street
89	Stingaree Drive
90	Cove Street
91	Caplen Shores Drive
92	Cade Street
93	Gordon Drive
94	Dolly Lane
95	Johnson Road

Marinas

RARNUM	NAME	ADDRESS	PHONE
H142	Charriot Marina	109 Redfish Dr Crystal Beach 77651	(409) 684-3070
H143	Stingaree Marina		(409) 684-9530

BIOLOGICAL RESOURCES

Mammals

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	MATING	CALVING
378	Bottlenose dolphin				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC

Birds

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
67	Migratory songbirds																			
378	Franklin's gull								X	X	X		X	X	X	X	-	-	-	-

Fish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
378	Spanish mackerel				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Tarpon				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Florida pompano				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Crevalle jack				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Sharks				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Southern kingfish (whiting)				X	X	X	X	X	X	X	X	X	X	X	X	-	-
380	Flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	-
381	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT
	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Pinfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
382	Seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT
	Gizzard shad				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	-

Shellfish

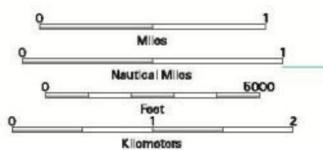
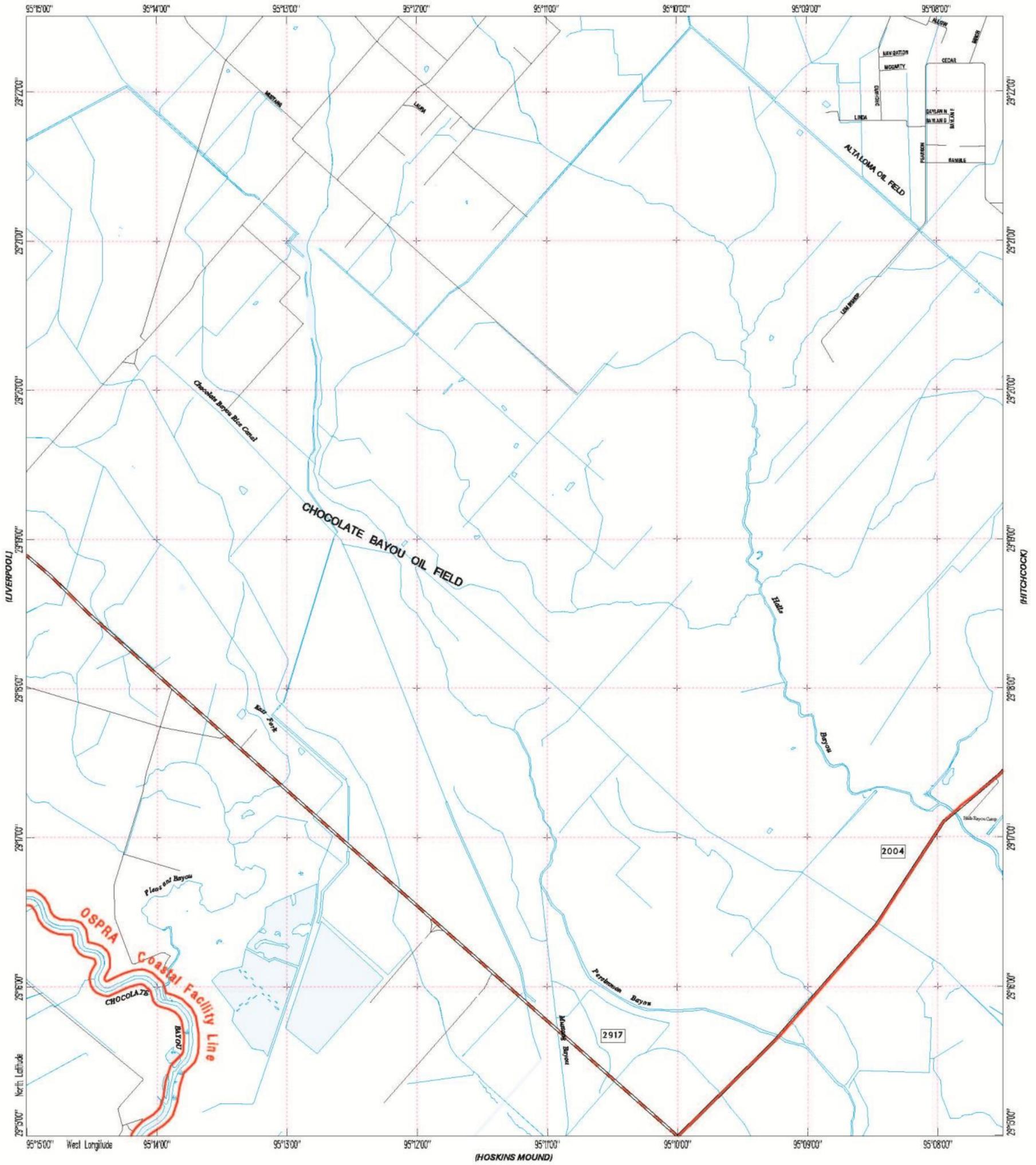
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV.
381	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN

CAPLEN

Map # 36

Polygon #	Priority	Description: what organism(s), habitat(s)?
1	Medium	South of GIWW. Wetlands (high), bird habitat (medium). Several sloughs and canals drain north into GIWW and should be closed off separately.
2	Medium	Southern margin of Marsh Point Marsh, north of GIWW. Bird habitat (high), nursery (high). <i>Pinchpoint at Yates Cove can be boomed to protect polygon 3. Other waterways entering Marsh Point Marsh, including Big Pasture Bayou, shown on Frozen Point quad.</i>
3	High	Southwestern part of Marsh Point Marsh (continued on Frozen Point quad). Bird habitat (high), nursery (high), wetlands (high). <i>Pinchpoints at two inlets to Crab Lake can be boomed to protect polygons 4 and 5 from spills from GIWW.</i>
4	Medium	Crab Lake area. Wetlands (high), bird habitat (medium), nursery (medium).
5	Medium	West of Crab Lake area. Wetlands (high), nursery (medium).

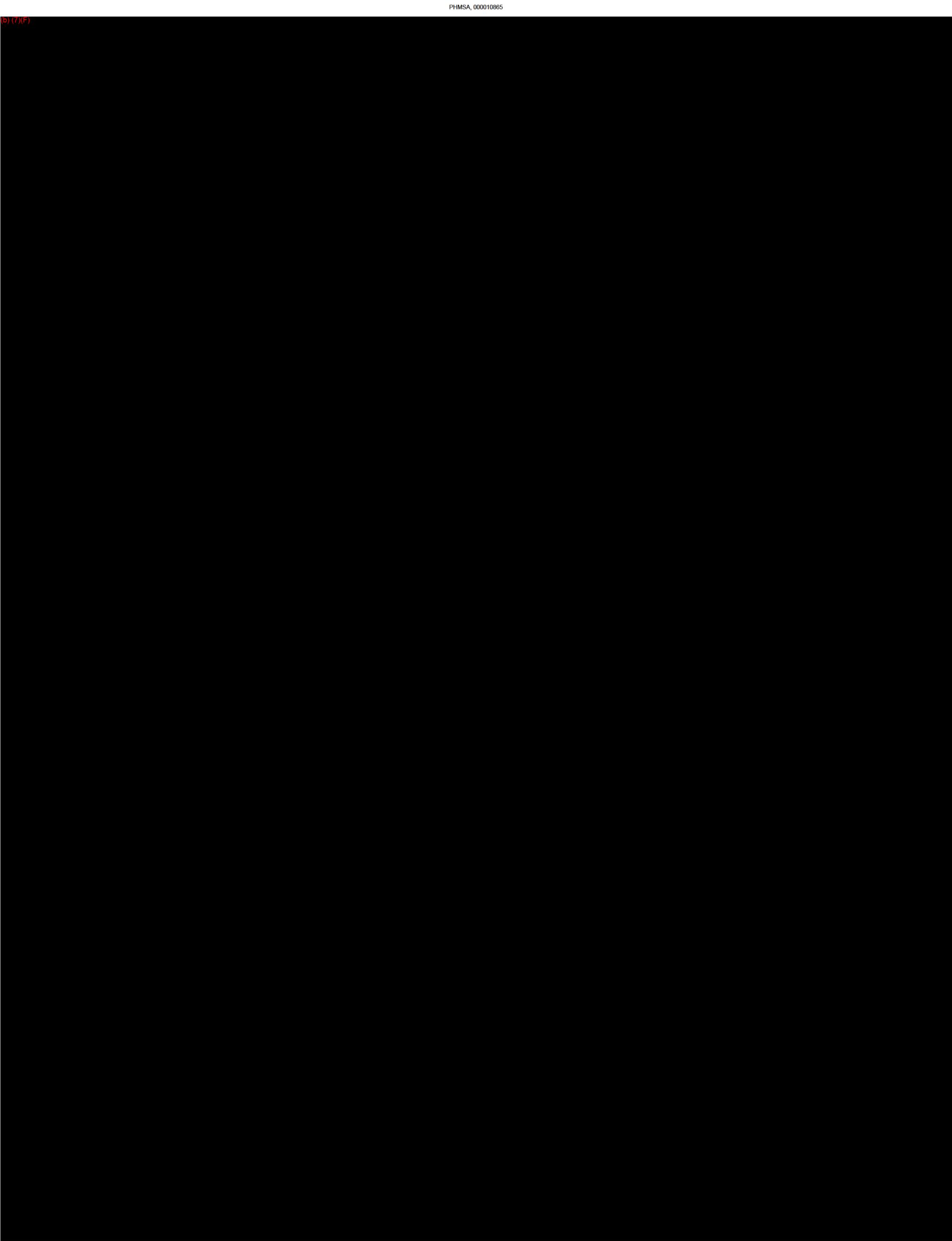
Mustang Bayou Base Map



Map Legend

- Lake, Bay, River
- Marsh, Wetland, Swamp
- Flats (Mud, Sand, Tide)
- Divided Highway TxDOT
- State/Federal Highway TxDOT
- City Street/County Road TxDOT
- OSPRA Coastal Facility Designation Line GLD

(b) (7)(F)



HITCHCOCK**Map #43****HUMAN USE RESOURCES****Boat Ramps**

RARNUM	NAME
H610	Hitchcock Public

Heliports

RARNUM	MANAGER	PHONE
H1162	D. W. Wostal Sr.	(409) 925-2537
H1208	Felton M. Baker	(713) 485-1777

BIOLOGICAL RESOURCES**Birds**

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
395	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Rails				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-

Reptiles/Amphibians

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	HATCHING
779	Crawfish frog																	

Fish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
395	Gulf menhaden			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Pinfish			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY

Shellfish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
171	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
395	Crustaceans				X	X	X	X	X	X	X	X	X	X	X	X	-	-

Plants/Communities

RARNUM	NAME	S/F	T/E
782	Coastal gayfeather		

HITCHCOCK**Map # 43**

Polygon #	Priority	Description: what organism(s), habitat(s)?
<i>Pinchpoint at the mouth of Carancahua Bayou (on Sea Isle quad) can be boomed to protect polygons 1, 2, 4, and 6 from spills in GIWWW.</i>		
1	Low	West of Carancahua Bayou. Wetlands (high).
2	Medium	East of Carancahua Bayou. Wetlands (high), nursery (high).
3	Medium	(a) West and (b) northwest of Greens Lake. Wetlands (high), bird habitat (high).
<i>Pinchpoint at mouth of Greens Bayou can be boomed to protect polygon 4 from spills in Greens Lake.</i>		
4	High	Greens Lake - Carancahua Lake Marsh. Wetlands (high), bird habitat (high), nursery (high). Continued on Sea Isle, Virginia Point quads.
5	Medium	Greens Lake (a, b). Bird habitat (high), nursery (high). Continued on Virginia Point quad.
6	Medium	Carancahua Lake. Bird habitat (high), nursery (high); scattered oysters. Continued on Sea Isle quad.

VIRGINIA POINT

Map #42

HUMAN USE RESOURCES

Boat Ramps

RARNUM	NAME
H552	Bayou Vista Bait and Tackle
H553	Louis's
H565	8-Mile Road Bait Camp
H613	Sportsman Road
H736	Harbor Cove
H737	Charlie's Landing
H738	Jones Lake State
H739	Omega Bay

Marinas

RARNUM	NAME	ADDRESS	PHONE
H157	Teakwood Marina	400 Tiki Drive Village of Tiki Island 77554	(409) 935-5552

Water Intake Points

RARNUM	OWNER	TYPE
H748	Texas Copper Corporation	1

BIOLOGICAL RESOURCES

Birds	RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
	67	Migratory songbirds																			
	384	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
		Rails				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	386	Rails				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
		Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	389	Rails				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
		Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
		Mottled duck				X	X	X	X	X	X	X	X	X	X	X	JAN-AUG	JAN-AUG	JAN-AUG	FEB-SEP	
	390	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
		Black skimmer				X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-SEP	APR-SEP	
	392	Black skimmer			15	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-SEP	APR-SEP	
		Laughing gull			200	X	X	X	X	X	X	X	X	X	X	X	FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP	
		Snowy egret				X	X	X	X	X	X	X	X	X	X	X	APR-JUL	APR-JUL	APR-JUL	MAY-AUG	
		Tricolored heron			9	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP	
	395	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
		Rails				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
	398	Cattle egret				X	X	X	X	X	X	X	X	X	X	X	APR-JUL	APR-JUL	APR-JUL	APR-AUG	
		Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
		Little blue heron			5	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	APR-JUL	APR-JUL	MAY-AUG	
		Olivaceous cormorant			200	X	X	X	X	X	X	X	X	X	X	X	JAN-JUL	JAN-JUL	JAN-JUL	FEB-AUG	
		Brown pelican	F	E		X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP	
		Tricolored heron			125	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP	
		Great egret			200	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	MAR-JUL	MAR-JUL	MAR-AUG	
		Reddish egret	S	T	10	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP	
		White-faced ibis	S	T	100	X	X	X	X	X	X	X	X	X	X	X	FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP	
		Roseate spoonbill			200	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP	
		American oystercatcher			LOW	X	X	X	X	X	X	X	X	X	X	X	MAY-AUG	MAY-AUG	MAY-AUG	MAY-SEP	
		Royal tern				X	X	X	X	X	X	X	X	X	X	X	FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP	
		Black skimmer				X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-SEP	APR-SEP	
		Caspian tern				X	X	X	X	X	X	X	X	X	X	X	MAR-JUN	MAR-JUN	MAR-JUN	MAR-JUL	
		Sanderling				X	X	X								X	X	-	-		
		Forster's tern			10	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	MAR-SEP	
		Laughing gull			1200	X	X	X	X	X	X	X	X	X	X	X	FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP	
		Black-crowned night heron			8	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP	
		White ibis			1000	X	X	X	X	X	X	X	X	X	X	X	FEB-JUN	FEB-JUN	FEB-JUN	MAR-JUL	
		Snowy egret			60	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	APR-JUL	APR-JUL	MAY-AUG	
		Long-billed curlew	S	SC		X	X	X								X	X	-	-		
		Ruddy turnstone				X	X	X								X	X	-	-		
		Great blue heron			200	X	X	X	X	X	X	X	X	X	X	X	FEB-JUN	FEB-JUN	FEB-JUN	MAR-JUL	
	401	Black skimmer				X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-SEP	APR-SEP	
		Forster's tern			10	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	MAR-SEP	
		Caspian tern			200	X	X	X	X	X	X	X	X	X	X	X	MAR-JUN	MAR-JUN	MAR-JUN	MAR-JUL	
		Ruddy turnstone				X	X	X								X	X	-	-		
		Sanderling				X	X	X								X	X	-	-		
		Royal tern				X	X	X	X	X	X	X	X	X	X	X	FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP	
		Brown pelican	F	E		X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP	
		American oystercatcher			LOW	X	X	X	X	X	X	X	X	X	X	X	MAY-AUG	MAY-AUG	MAY-AUG	MAY-SEP	
		Long-billed curlew	S	SC		X	X	X								X	X	-	-		
		Laughing gull			200	X	X	X	X	X	X	X	X	X	X	X	FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP	
		Least tern	F	E	4	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	MAY-SEP	MAY-OCT	
		Great egret			5	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	MAR-JUL	MAR-JUL	MAR-AUG	
		Little blue heron			5	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	APR-JUL	APR-JUL	MAY-AUG	
		Great blue heron			10	X	X	X	X	X	X	X	X	X	X	X	FEB-JUN	FEB-JUN	FEB-JUN	MAR-JUL	
		Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	
		Snowy egret			1	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	APR-JUL	APR-JUL	MAY-AUG	
		White ibis			12	X	X	X	X	X	X	X	X	X	X	X	FEB-JUN	FEB-JUN	FEB-JUN	MAR-JUL	
	402	Wading birds				X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	

VIRGINIA POINT CONTINUED

BIOLOGICAL RESOURCES CONT.

Birds Continued

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
403	American oystercatcher			LOW	X	X	X	X	X	X	X	X	X	X	X	X	MAY-AUG	MAY-AUG	MAY-AUG	MAY-SEP
656	Forster's tern			5	X	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	MAR-SEP
	Laughing gull			40	X	X	X	X	X	X	X	X	X	X	X	X	FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP
	Royal tern			20	X	X	X	X	X	X	X	X	X	X	X	X	FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP
660	Gull-billed tern			5	X	X	X	X	X	X	X	X	X	X	X	X	FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP
	Forster's tern			6	X	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	MAR-SEP
	Black skimmer			260	X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-SEP	APR-SEP

Reptiles/Amphibians

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	HATCHING
323	Diamondback terrapin				X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	MAY-JUL
390	Diamondback terrapin				X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	MAY-JUL
398	Diamondback terrapin				X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	MAY-JUL
771	Texas diamondback terrapin C2	N																

Fish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
385	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
389	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Spot				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	NOV-FEB
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
390	Bull shark				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Pinfish			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Atlantic croaker			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
392	Atlantic croaker			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Gafftopsail catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	MAY-AUG
395	Gulf menhaden			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	-
396	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Pinfish			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
402	Longnose killifish				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Inland silverside				X	X	X	X	X	X	X	X	X	X	X	X	-	-
407	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Pinfish			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC

Shellfish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV.
323	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
384	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
385	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
386	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
390	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
392	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Brown shrimp			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
395	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Grass shrimp				X	X	X	X	X	X	X	X	X	X	X	X	-	-
396	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Brown shrimp			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
398	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
401	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
403	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
407	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT

GALVESTON

Map #41

HUMAN USE RESOURCES

Beach Access Points

ID	STREET
45	15th Street
46	16th Street

Boat Ramps

RARNUM	NAME
H551	Texas City Dike Marina
H597	Havre Lafitte
H715	TAMU Oil Spill Control
H716	TAMU Oil Spill Control
H734	Turtle Lake Apartments
H735	Pleasure Island
H746	Ermin Pilsner Public

Coast Guard Facilities

RARNUM	NAME	PHONE
H427	Galveston Group/Base/Ant	(409) 766-5605
H428	MSU Galveston	(409) 766-3655

Heliports

RARNUM	MANAGER	PHONE
H1199	UTMB Life Flight	(409) 772-4355
H1201	Donny Grasso	(713) 488-7161
H1200	J. E. Whitman	(504) 588-4591

Marinas

RARNUM	NAME	ADDRESS	PHONE
H135	Roberts/Zimmerman Marina	9415 Teichman Galveston 77554-9803	(409) 740-1310
H140	Galveston Yacht Basin	715 Holiday Dr. North Galveston 77550	(409) 762-9689
H141	The Landings of Galveston	7302 Heard's Lane Galveston 77551	(409) 744-3625
H160	Payco Marina Inc.	8821 Broadway Galveston 77551	(409) 744-7428

BIOLOGICAL RESOURCES

Mammals

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	MATING	CALVING
412	Bottlenose dolphin				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
415	Bottlenose dolphin				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
417	Bottlenose dolphin				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
431	Bottlenose dolphin				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
566	Bottlenose dolphin				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC

Birds

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
177	Least tern	F	E				X	X	X	X	X	X	X				APR-SEP	APR-SEP	MAY-SEP	MAY-OCT
415	Common loon	S	SC		X	X	X	X					X	X	X		-	-	-	-
	Lesser scaup				X	X	X					X	X	X			-	-	-	-
	Common goldeneye				X	X	X					X	X	X			-	-	-	-
416	Common goldeneye				X	X	X					X	X	X			-	-	-	-
	Lesser scaup				X	X	X					X	X	X			-	-	-	-
	Common loon	S	SC		X	X	X					X	X	X			-	-	-	-
417	Magnificent frigatebird				X	X	X	X	X	X	X	X	X	X	X		-	-	-	-
	Black skimmer				X	X	X	X	X	X	X	X	X	X	X		APR-SEP	APR-SEP	APR-SEP	APR-SEP
418	Reddish egret	S	T		X	X	X	X	X	X	X	X	X	X	X		APR-AUG	APR-AUG	APR-AUG	APR-SEP
427	Laughing gull			HIGH	X	X	X	X	X	X	X	X	X	X	X		FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP
	Forster's tern				X	X	X	X	X	X	X	X	X	X	X		MAR-AUG	MAR-AUG	MAR-AUG	MAR-SEP
	Brown pelican	F	E		X	X	X	X	X	X	X	X	X	X	X		APR-AUG	APR-AUG	APR-AUG	APR-SEP
	Wading birds				X	X	X	X	X	X	X	X	X	X	X		-	-	-	-
566	Franklin's gull				X	X	X	X	X	X	X	X	X	X	X		-	-	-	-
661	Royal tern			11000	X	X	X	X	X	X	X	X	X	X	X		FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP
	Black-crowned night heron			100	X	X	X	X	X	X	X	X	X	X	X		APR-AUG	APR-AUG	APR-AUG	APR-SEP
	Sandwich tern			5600	X	X	X	X	X	X	X	X	X	X	X		FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP
	Gull-billed tern			6	X	X	X	X	X	X	X	X	X	X	X		FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP
	Tricolored heron			40	X	X	X	X	X	X	X	X	X	X	X		APR-AUG	APR-AUG	APR-AUG	MAY-SEP
	Great blue heron			20	X	X	X	X	X	X	X	X	X	X	X		FEB-JUN	FEB-JUN	FEB-JUN	MAR-JUL
	Snowy egret			20	X	X	X	X	X	X	X	X	X	X	X		APR-JUL	APR-JUL	APR-JUL	MAY-AUG
	Cattle egret			50	X	X	X	X	X	X	X	X	X	X	X		APR-JUL	APR-JUL	APR-JUL	APR-AUG
	Laughing gull			2200	X	X	X	X	X	X	X	X	X	X	X		FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP
	Great egret			10	X	X	X	X	X	X	X	X	X	X	X		MAR-JUL	MAR-JUL	MAR-JUL	MAR-AUG
	Roseate spoonbill			20	X	X	X	X	X	X	X	X	X	X	X		APR-AUG	APR-AUG	APR-AUG	MAY-SEP
	Black skimmer			250	X	X	X	X	X	X	X	X	X	X	X		APR-SEP	APR-SEP	APR-SEP	APR-SEP
	Forster's tern			30	X	X	X	X	X	X	X	X	X	X	X		MAR-AUG	MAR-AUG	MAR-AUG	MAR-SEP
	Brown pelican	F	E	1	X	X	X	X	X	X	X	X	X	X	X		APR-AUG	APR-AUG	APR-AUG	APR-SEP
	Wading birds				X	X	X	X	X	X	X	X	X	X	X		-	-	-	-
	Reddish egret	S	T	0	X	X	X	X	X	X	X	X	X	X	X		APR-AUG	APR-AUG	APR-AUG	APR-SEP
	White ibis			10	X	X	X	X	X	X	X	X	X	X	X		FEB-JUN	FEB-JUN	FEB-JUN	MAR-JUL

GALVESTON CONTINUED

BIOLOGICAL RESOURCES CONT.

Birds Continued

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
661 Cont.	White-faced ibis	S	T	30	X	X	X	X	X	X	X	X	X	X	X	X	FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP
662	Laughing gull			21115	X	X	X	X	X	X	X	X	X	X	X	FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP	
	Gull-billed tern			15	X	X	X	X	X	X	X	X	X	X	X	FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP	

Reptiles/Amphibians

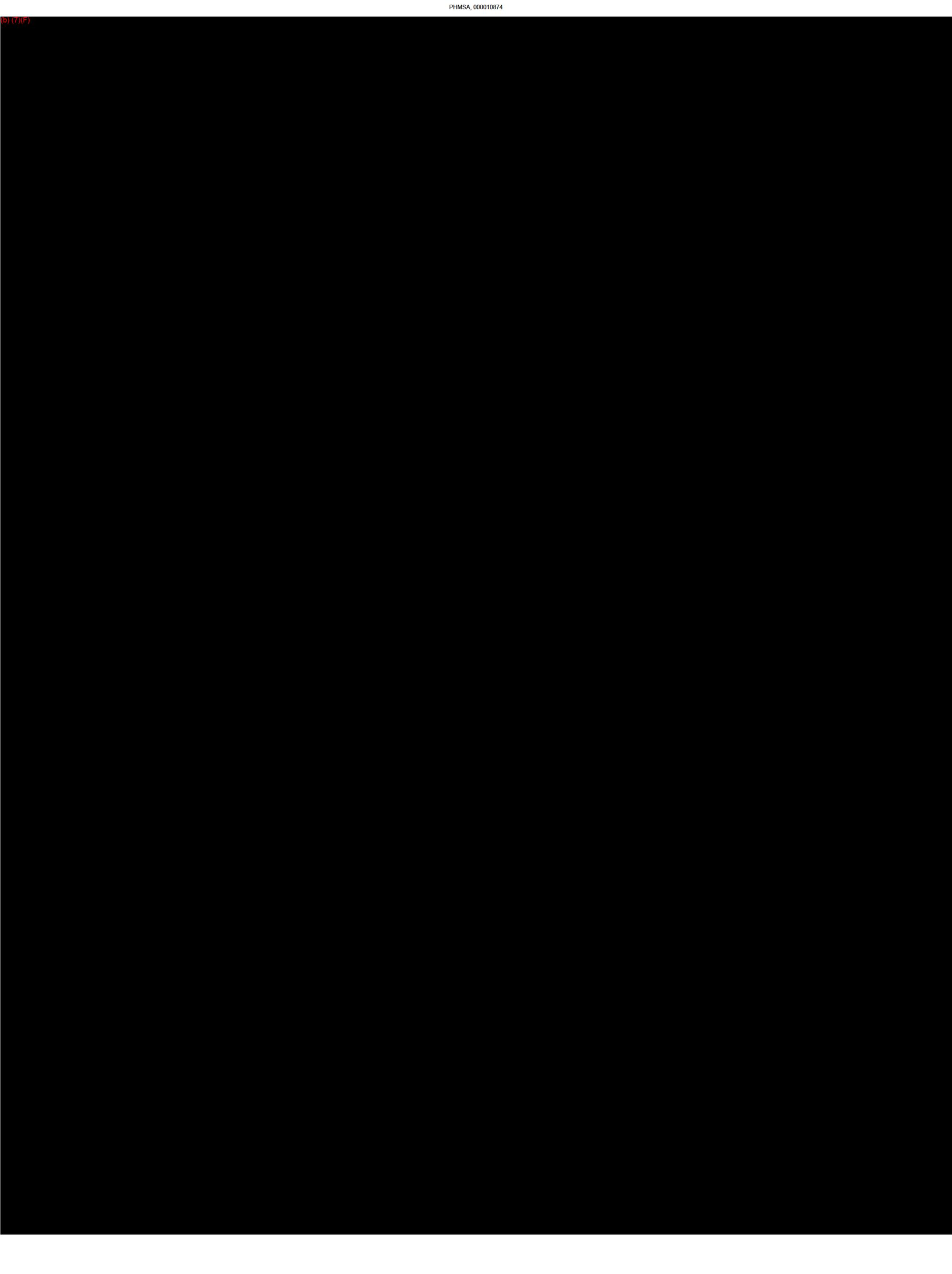
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	HATCHING
417	Kemp's ridley sea turtle	S/F	E/E	LOW	X	X	X	X	X	X	X	X	X	X	X	-	-	
	Loggerhead sea turtle	S/F	E/T	LOW	X	X	X	X	X	X	X	X	X	X	X	-	-	
771	Texas diamondback terrapin	F	C2															
773	Gulf saltmarsh snake	F	C2															

Fish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
409	Seatrout				X	X	X	X	X	X	X	X	X	X	X	-	-	
	Pinfish				X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY	
	Red drum				X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC	
	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC	
	Crevalle jack				X	X	X	X	X	X	X	X	X	X	X	-	-	
411	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC	
	Sheepshead minnow				X	X	X	X	X	X	X	X	X	X	X	MAR-OCT	MAR-DEC	
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC	
	Red drum				X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC	
412	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB	
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT	
	Pinfish				X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY	
415	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT	
	Seatrout				X	X	X	X	X	X	X	X	X	X	X	-	-	
	Pinfish				X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY	
416	Red drum				X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC	
	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC	
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC	
	Seatrout				X	X	X	X	X	X	X	X	X	X	X	-	-	
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT	
	Pinfish				X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY	
417	Florida pompano				X	X	X	X	X	X	X	X	X	X	X	-	-	
	Black drum				X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR	
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC	
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT	
	Spanish mackerel				X	X	X	X	X	X	X	X	X	X	X	-	-	
	Red drum				X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC	
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR	
418	Sand seatrout			HIGH	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC	
420	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC	
	Seatrout				X	X	X	X	X	X	X	X	X	X	X	-	-	
	Red drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC	
	Gulf Killifish				X	X	X	X	X	X	X	X	X	X	X	MAR-SEP	JAN-DEC	
431	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC	
	Red drum				X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC	
	Seatrout				X	X	X	X	X	X	X	X	X	X	X	-	-	
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC	
566	Gafftopsail catfish				X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	MAY-AUG	
	Florida pompano				X	X	X	X	X	X	X	X	X	X	X	-	-	
	Sharks				X	X	X	X	X	X	X	X	X	X	X	-	-	
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR	
	Gray snapper				X	X	X	X	X	X	X	X	X	X	X	-	-	
	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT	
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT	
	Red drum				X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC	

Shellfish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
409	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN	
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG	
	Stone crab				X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-SEP	
412	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN	
415	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN	
	White shrimp				X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT	
416	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN	
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG	
417	Blue crab				X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG	
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN	
420	Blue crab				X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG	
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN	
431	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN	
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG	
	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL	
566	Blue crab				X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG	
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN	
	White shrimp				X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT	
	Grass shrimp				X	X	X	X	X	X	X	X	X	X	X	-	-	



THE JETTIES

Map #40

HUMAN USE RESOURCES

Beach Access Points

ID	STREET
44	Boddecker Drive
47	17th Street
48	18th Street
49	22nd Street

Heliports

RARNUM	MANAGER	PHONE
H1204	James C. Henderson Director	(409) 765-6161

BIOLOGICAL RESOURCES

Mammals

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	MATING	CALVING
444	Stenellid dolphin				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Bottlenose dolphin				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC

Birds

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
442	Long-billed curlew	S	SC		X	X	X						X	X	X	X	-	-	-	-
	Western sandpiper				X	X	X	X					X	X	X	X	-	-	-	-
	Gulls				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Terns				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Black skimmer				X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-SEP	APR-SEP
	Least tern	F	E		X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	MAY-SEP	MAY-OCT
	Willet				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Cormorant				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Black-necked stilt				X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-SEP	APR-SEP
	Reddish egret	S	T		X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP
	American avocet				X	X	X	X		X	X	X	X	X	X	X	-	-	-	-
	Northern harrier				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP
	Peregrine falcon	F	E	LOW	X	X	X	X		X	X	X	X	X	X	X	-	-	-	-
	Red-tailed hawk				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Brown pelican	F	E		X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP
	American white pelican				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Black-bellied plover				X	X	X	X		X	X	X	X	X	X	X	-	-	-	-
	Short-billed dowitcher				X	X	X	X		X	X	X	X	X	X	X	-	-	-	-
	Wilson's plover				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-	-
	Shorebirds			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Sanderling				X	X	X	X		X	X	X	X	X	X	X	-	-	-	-
	Dunlin				X	X	X	X	X		X	X	X	X	X	X	-	-	-	-
	Semipalmated sandpiper				X	X	X	X		X	X	X	X	X	X	X	-	-	-	-
	Piping plover	S/F	T/T	HIGH	X	X	X	X		X	X	X	X	X	X	X	-	-	-	-
443	Black skimmer				X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-SEP	APR-SEP
	Gulls				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Least tern	F	E		X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	MAY-SEP	MAY-OCT
	American avocet				X	X	X	X		X	X	X	X	X	X	X	-	-	-	-
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Black-necked stilt				X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-SEP	APR-SEP
	Clapper rail				X	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	APR-SEP
	Piping plover	S/F	T/T	HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Shorebirds			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Northern harrier				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP
	Peregrine falcon	F	E	LOW	X	X	X	X		X	X	X	X	X	X	X	-	-	-	-
	Red-tailed hawk				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
444	Gulls				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Terns				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Brown pelican	F	E		X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP
445	Magnificent frigatebird				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Short-billed dowitcher				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Magnificent frigatebird				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Dunlin				X	X	X	X		X	X	X	X	X	X	X	-	-	-	-
	Brown pelican	F	E		X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP
	Black skimmer				X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-SEP	APR-SEP
	Gulls				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Piping plover	S/F	T/T	HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	American avocet				X	X	X	X		X	X	X	X	X	X	X	-	-	-	-
	Reddish egret	S	T		X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP
	Willet				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP
	Western sandpiper				X	X	X	X		X	X	X	X	X	X	X	-	-	-	-
	Shorebirds			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-

Reptiles/Amphibians

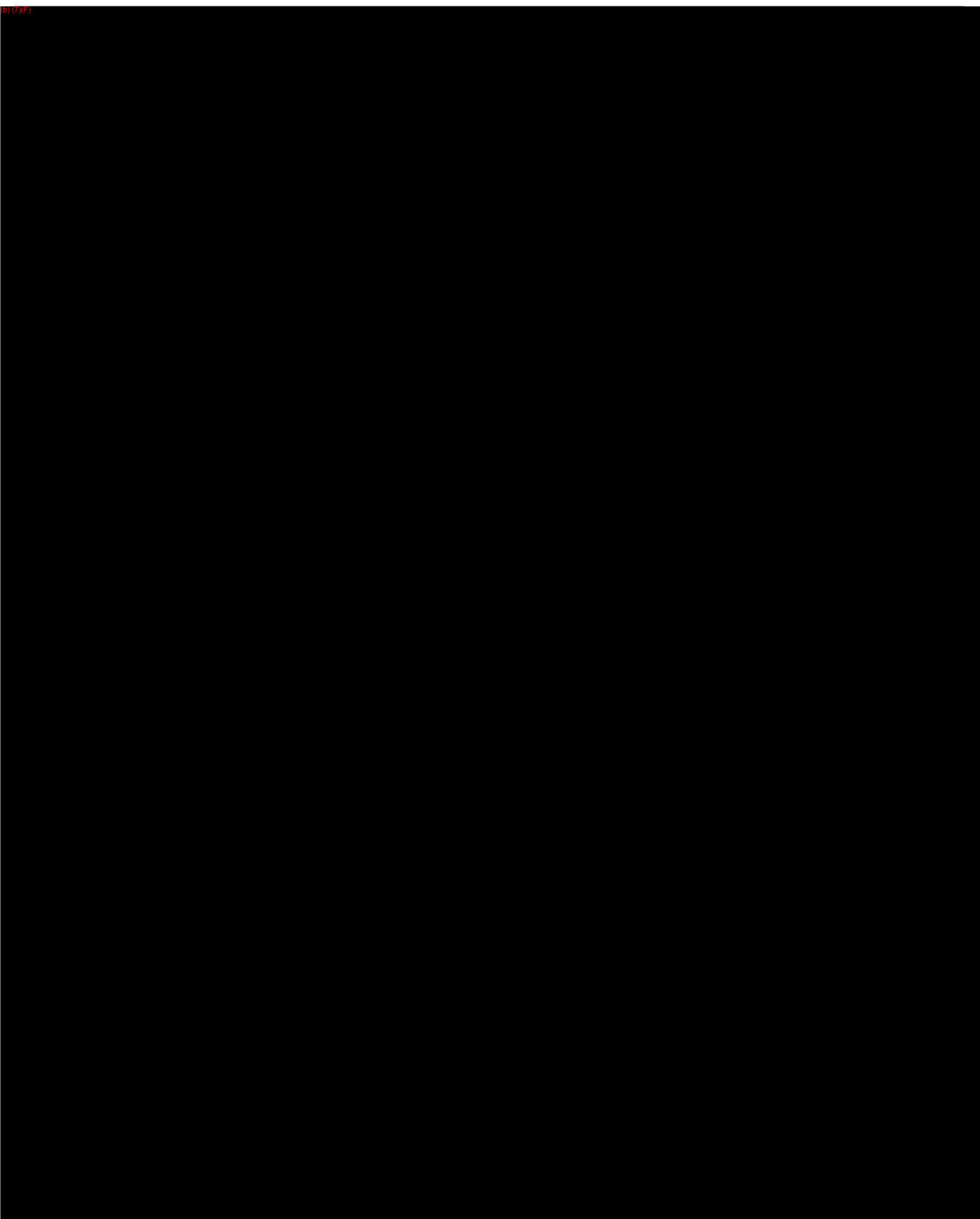
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	HATCHING
444	Loggerhead sea turtle	S/F	E/T	LOW	X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Kemp's ridley sea turtle	S/F	E/E	LOW	X	X	X	X	X	X	X	X	X	X	X	X	-	-

THE JETTIES CONTINUED

BIOLOGICAL RESOURCES CONT.

Fish																		
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
444	Tarpon				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Sheepshead				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-AUG
	King mackerel				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Spanish mackerel				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Florida pompano				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
446	Longnose killifish				X	X	X	X	X	X	X	X	X	X	X	X	-	-
Shellfish																		
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV.
442	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
444	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
445	Stone crab				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-SEP
Plants/Communities																		
RARNUM	NAME	S/F	T/E															
443	Smooth cordgrass																	
446	Smooth cordgrass																	

(b) (7)(F)



HOSKINS MOUND

Map #47

HUMAN USE RESOURCES

Aquaculture Sites

RARNUM	NAME	ADDRESS	PHONE
H003	D & C Fishfarm Inc	County Road 316 Port Lavaca 77465	(713) 729-1105

Boat Ramps

RARNUM	NAME
H281	Horseshoe Bend Camp Boat Shed
H556	Chocolate Bay State

Heliports

RARNUM	MANAGER	PHONE
H1163	Brian Dinsmoor	(713) 581-3100

Water Intake Points

RARNUM	OWNER	TYPE
H120	Amoco Chemicals Co.	6

BIOLOGICAL RESOURCES

Mammals

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	MATING	CALVING
456	Bottlenose dolphin				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC

Birds

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
449	Clapper rail				X	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	APR-SEP
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
454	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Forster's tern				X	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	MAR-SEP
	Gulls				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
457	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Clapper rail				X	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	APR-SEP
458	Clapper rail				X	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	APR-SEP
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
459	Forster's tern				X	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	MAR-SEP
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Gulls				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-

Reptiles/Amphibians

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	HATCHING
219	Diamondback terrapin				X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	MAY-JUL
323	Diamondback terrapin				X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	MAY-JUL
447	Diamondback terrapin				X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	MAY-JUL
448	Diamondback terrapin				X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	MAY-JUL
454	Diamondback terrapin				X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	MAY-JUL
459	Diamondback terrapin				X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	MAY-JUL

Fish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
448	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
449	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Red drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Pinfish			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
454	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
456	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Spot				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	NOV-FEB
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Pinfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
457	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
458	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC

HOSKINS MOUND CONTINUED

BIOLOGICAL RESOURCES CONT.

Fish Continued

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
459	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Pinfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
460	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
461	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
462	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Gizzard shad				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
521	Pinfish			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Red drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC

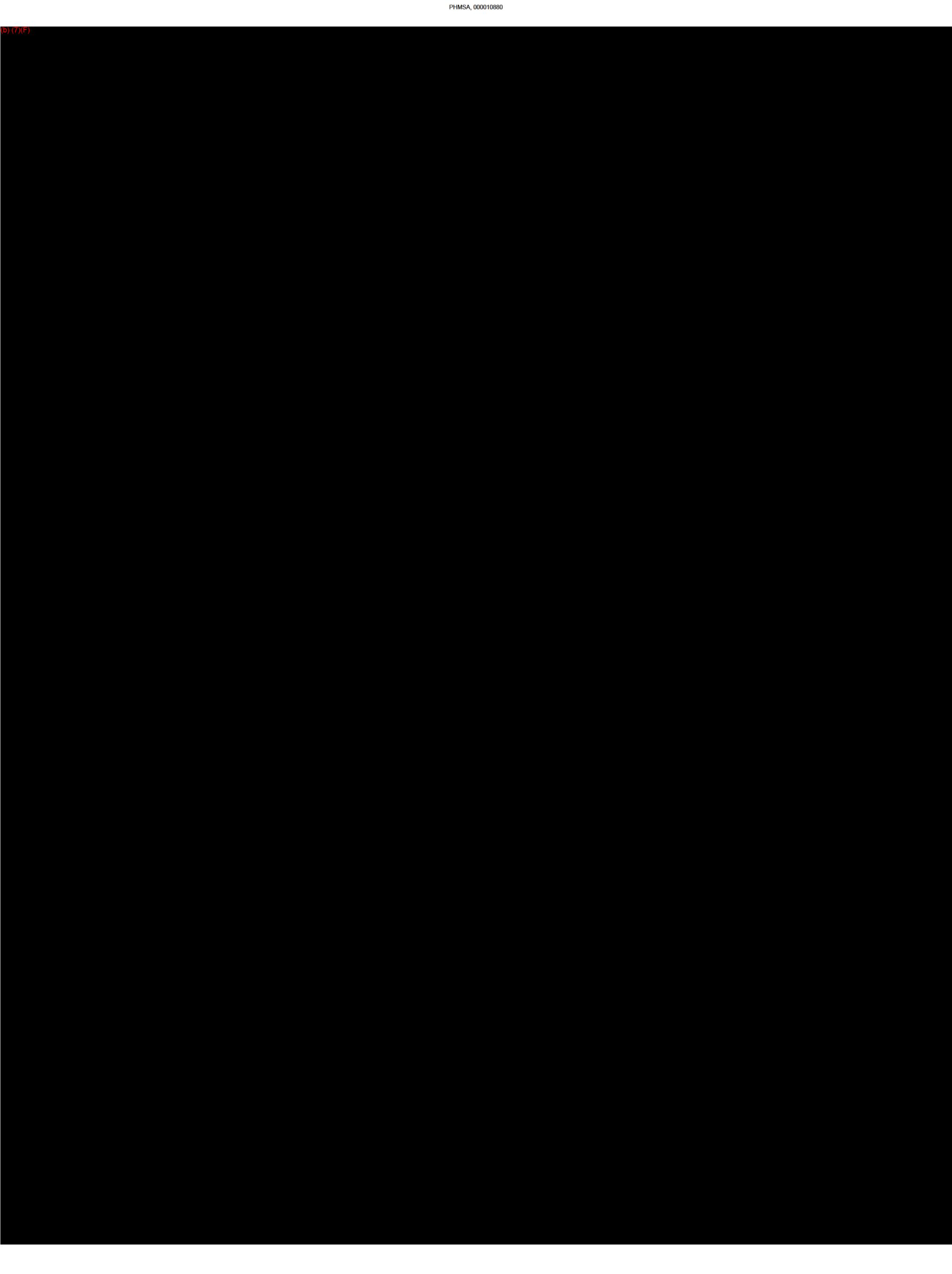
Shellfish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
323	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
449	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	Grass shrimp				X	X	X	X	X	X	X	X	X	X	X	X	-	-
454	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
456	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
457	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
458	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Grass shrimp				X	X	X	X	X	X	X	X	X	X	X	X	-	-
459	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Brown shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
460	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Grass shrimp				X	X	X	X	X	X	X	X	X	X	X	X	-	-
461	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
462	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT

Plants/Communities

RARNUM	NAME	S/F	T/E
447	Rushes		
448	Rushes		
457	Smooth cordgrass		
	Salt meadow cordgrass (wiregrass)		
460	Rushes		
	Common reed		
	Bulrush		
24	Marshhay cordgrass series		
775	Threeflower broomweed		

(b) (7)(F)



SEA ISLE

Map #46

HUMAN USE RESOURCES

Beach Access Points

ID	STREET
30	Terramar Beach
31	Gulf Drive
32	San Jacinto Road

Boat Ramps

RARNUM	NAME
H561	Bay Harbor
H562	Terramar Beach

Marinas

RARNUM	NAME	ADDRESS	PHONE
H138	Marina at Sea Isle		(409) 737-3636

BIOLOGICAL RESOURCES

Birds

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
465	Reddish egret	S	T		X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP
472	Terns				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Rails				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
473	Mottled duck				X	X	X	X	X	X	X	X	X	X	X	X	JAN-AUG	JAN-AUG	JAN-AUG	FEB-SEP
	Waterfowl				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Rails				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Teals				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Terns				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
475	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Gulls				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Forster's tern				X	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	MAR-SEP
476	Reddish egret	S	T		X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP
477	Laughing gull				X	X	X	X	X	X	X	X	X	X	X	X	FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Tricolored heron				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP
	Snowy egret				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	APR-JUL	APR-JUL	MAY-AUG
	Reddish egret	S	T		X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP
479	Sandhill crane				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-

Reptiles/Amphibians

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	HATCHING
323	Diamondback terrapin				X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	MAY-JUL
473	American alligator				X	X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-DEC
474	American alligator				X	X	X	X	X	X	X	X	X	X	X	X	JUN-SEP	JUN-DEC
475	Diamondback terrapin				X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	MAY-JUL

Fish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
464	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Spot				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	NOV-FEB
	Atlantic croaker			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Pinfish			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Gafftopsail cat fish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	MAY-AUG
	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT
465	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
466	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Atlantic croaker			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
469	Mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
	Gizzard shad				X	X	X	X	X	X	X	X	X	X	X	X	-	-
471	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Inland silverside				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
474	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Pinfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB

SEA ISLE CONTINUED

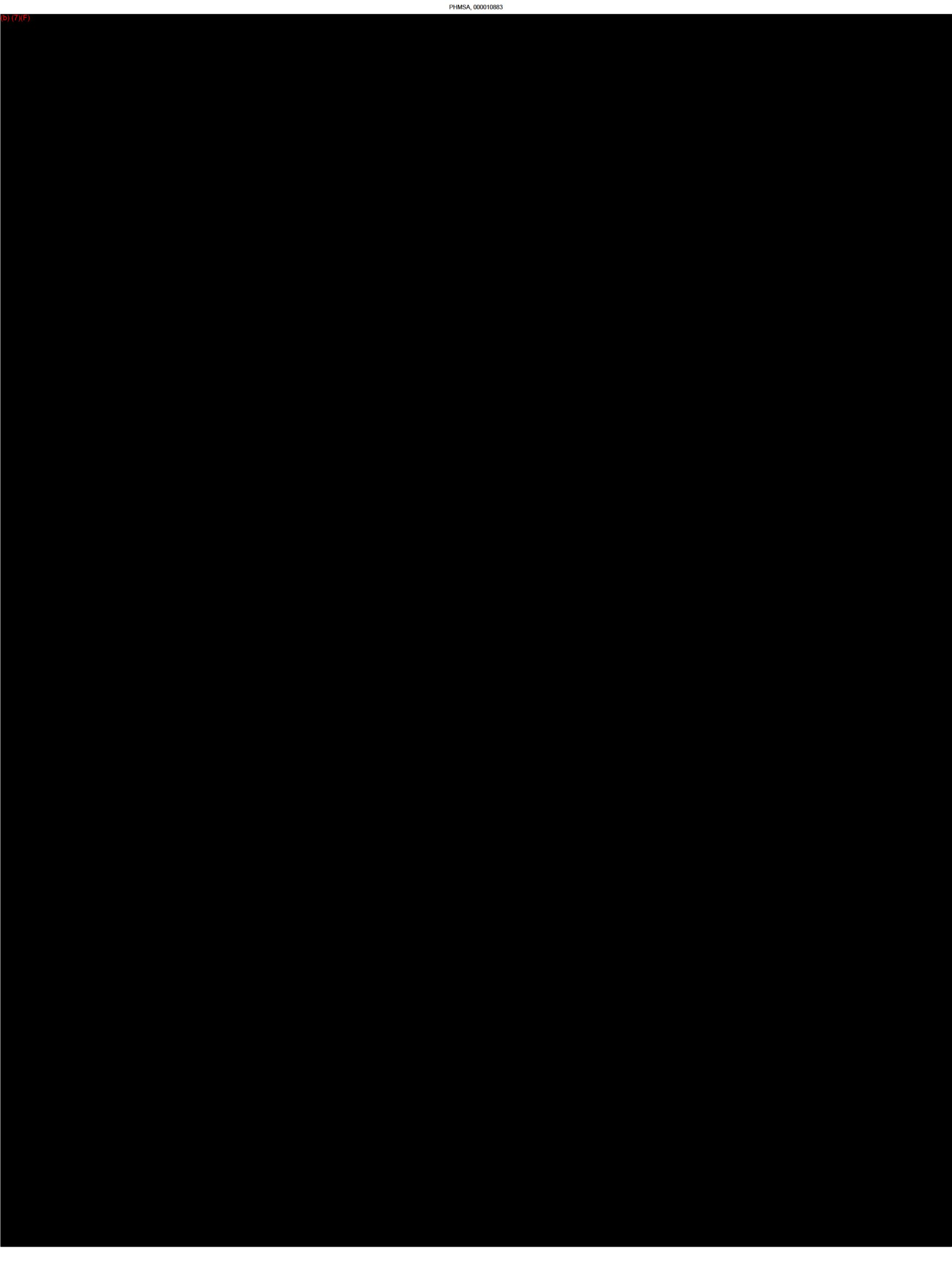
BIOLOGICAL RESOURCES CONT.

Fish Continued

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL / JUV.
474 Cont.	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Spot				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	NOV-FEB
475	Red drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Gulf menhaden			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Atlantic croaker			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Threadfin shad				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Pinfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT
476	Southern flounder			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
477	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT
	Southern flounder			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
478	Sand seatrout			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Gafftopsail catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	MAY-AUG
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Pinfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Atlantic croaker			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Spot				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	NOV-FEB
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
480	Mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT
	Spotted seatrout				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC

Shellfish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL / JUV.
174	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
323	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
464	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Brown shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
465	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
466	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	Grass shrimp				X	X	X	X	X	X	X	X	X	X	X	X	-	-
469	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
471	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
473	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
474	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
475	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
476	Brown shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
477	Brown shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
478	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	White shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT
	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG



LAKE COMO

Map #45

HUMAN USE RESOURCES

Beach Access Points

ID	STREET
33	Kiva Road
34	Indian Beach Road
35	Habla Road
36	16 Mile Road
37	15 Mile Road
38	13 Mile Road
39	Turks Point Road
40	Vista Boulevard
41	11 Mile Road
42	Pabst Road
43	8 Mile Road
116	Sandpiper Lane
117	Pelican Lane
118	Spoonbill Lane
119	Pirates Lane
120	Maison Rouge Court
121	Barataria Court
122	Campeche Lane
123	Buccaneer Street
124	Long Tom Court
125	San Domingo Court
126	Raguer Boulevard
127	Fiddler Crab Lane
128	Ghost Crab Lane
129	Sand Crab Lane
130	Buccaneer Drive

Boat Ramps

RARNUM	NAME
H564	Jamaica Beach

Marinas

RARNUM	NAME	ADDRESS	PHONE
H139	Pirates Beach Marina	14302 Stewart Rd. Galveston 77550	(409) 737-2592

BIOLOGICAL RESOURCES

Mammals

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	MATING	CALVING
566	Bottlenose dolphin				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC

Birds

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
67	Migratory songbirds																			
483	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Forster's tern				X	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	MAR-SEP
494	Forster's tern				X	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	MAR-SEP
	Gulls				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
498	Black-crowned night heron				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP
	Willet				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP
503	Great blue heron			8	X	X	X	X	X	X	X	X	X	X	X	X	FEB-JUN	FEB-JUN	FEB-JUN	MAR-JUL
	Roseate spoonbill			2	X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP
	Forster's tern			50	X	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	MAR-SEP
	Laughing gull			600	X	X	X	X	X	X	X	X	X	X	X	X	FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP
	Great egret			10	X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	MAR-JUL	MAR-JUL	MAR-AUG
	Willet				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP
	Tricolored heron			14	X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP
	Snowy egret			1	X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	APR-JUL	APR-JUL	MAY-AUG
	Hooded merganser				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Little blue heron			2	X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	APR-JUL	APR-JUL	MAY-AUG
	White ibis				X	X	X	X	X	X	X	X	X	X	X	X	FEB-JUN	FEB-JUN	FEB-JUN	MAR-JUL
506	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Hooded merganser				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Willet				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP
	Reddish egret		S	T	X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP
	Forster's tern			25	X	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	MAR-SEP
	Laughing gull			200	X	X	X	X	X	X	X	X	X	X	X	X	FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP
	White ibis				X	X	X	X	X	X	X	X	X	X	X	X	FEB-JUN	FEB-JUN	FEB-JUN	MAR-JUL
512	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Forster's tern				X	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	MAR-SEP
566	Franklin's gull																-	-	-	-
671	Forster's tern			30	X	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	MAR-SEP
	Snowy egret			6	X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	APR-JUL	APR-JUL	MAY-AUG
	Laughing gull			400	X	X	X	X	X	X	X	X	X	X	X	X	FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP
	White ibis			8	X	X	X	X	X	X	X	X	X	X	X	X	FEB-JUN	FEB-JUN	FEB-JUN	MAR-JUL
	Tricolored heron			8	X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP

LAKE COMO CONTINUED

BIOLOGICAL RESOURCES CONT.

Reptiles/Amphibians

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	HATCHING
773	Gulf saltmarsh snake	F	C2															

Fish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
485	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
494	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Sand seatrout			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
495	Sheepshead minnow				X	X	X	X	X	X	X	X	X	X	X	X	MAR-OCT	MAR-DEC
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Red drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Pinfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
498	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
499	Sheepshead minnow				X	X	X	X	X	X	X	X	X	X	X	X	MAR-OCT	MAR-DEC
	Red drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Spotted seatrout			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Pinfish			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
	Gulf menhaden			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
503	Pinfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Sheepshead minnow				X	X	X	X	X	X	X	X	X	X	X	X	MAR-OCT	MAR-DEC
	Black drum				X	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR
507	Spot				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	NOV-FEB
	Sheepshead				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-AUG
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC
	Pinfish			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Southern flounder			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Spotted seatrout			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
512	Southern flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC
	Inland silverside				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
566	Gafftopsail catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	MAY-AUG
	Florida pompano				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Sharks				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR
	Gray snapper				X	X	X	X	X	X	X	X	X	X	X	X	-	-
	Hardhead catfish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-OCT
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT
	Red drum				X	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC

Shellfish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
483	Grass shrimp				X	X	X	X	X	X	X	X	X	X	X	X	-	-
485	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	Grass shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	-
494	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
495	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Grass shrimp			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	-
499	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
503	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
506	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	Grass shrimp				X	X	X	X	X	X	X	X	X	X	X	X	-	-
507	American oyster (eastern)				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	APR-JUL
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	Stone crab				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	JUN-SEP
	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
512	Crustaceans				X	X	X	X	X	X	X	X	X	X	X	X	-	-
566	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUL	MAY-AUG
	Brown shrimp				X	X	X	X	X	X	X	X	X	X	X	X	NOV-MAR	FEB-JUN
	White shrimp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-OCT

SOUTH OF GALVESTON

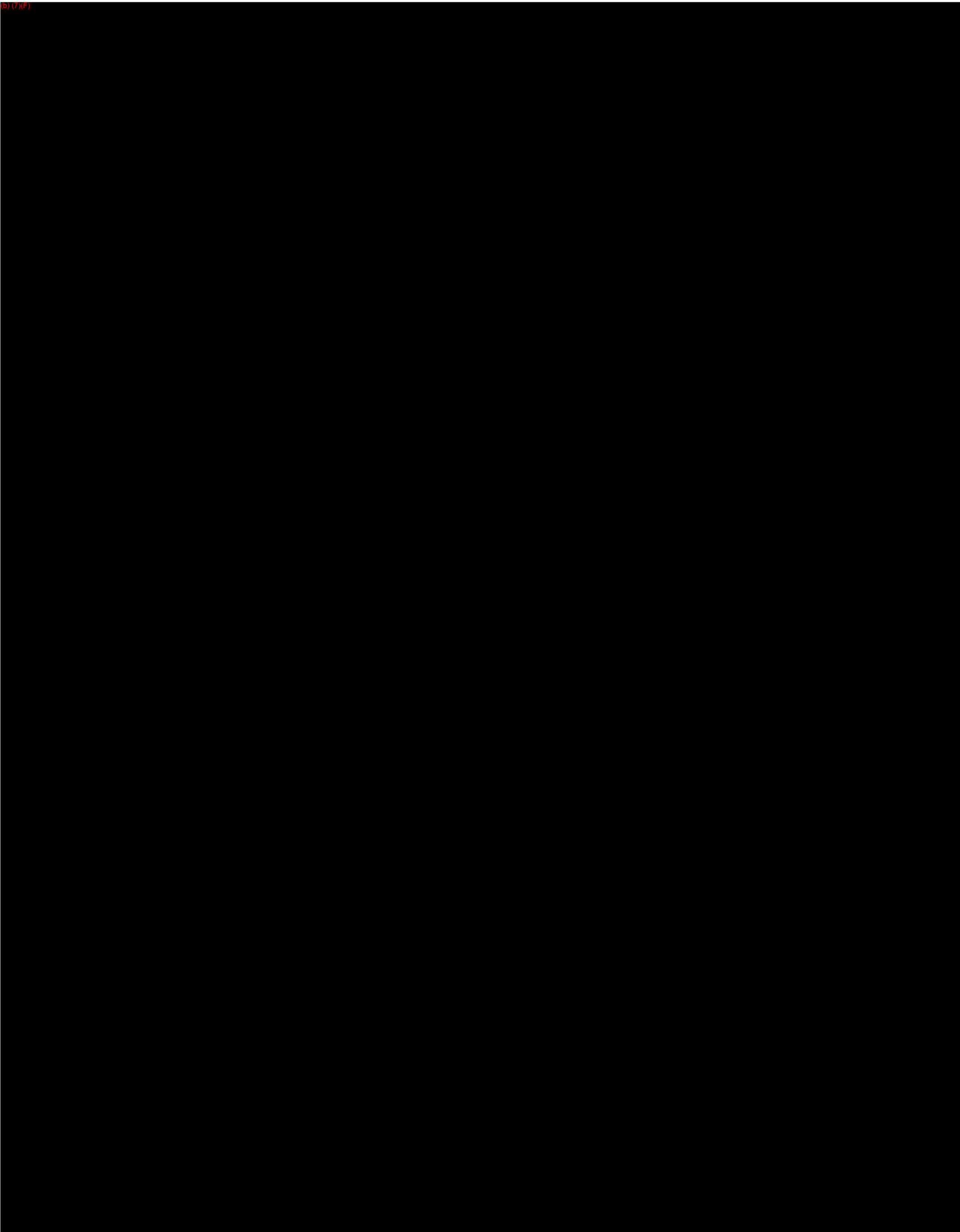
Map #44

HUMAN USE RESOURCES

Heliports

RARNUM	MANAGER	PHONE
H1202	Not Available	N/A

(b) (7)(F)



CHRISTMAS POINT

Map #49

HUMAN USE RESOURCES

Beach Access Points		
ID	STREET	
1	-	
2	-	
3	-	
4	-	
5	-	

Boat Ramps		
RARNUM	NAME	
H559	Sy's Bait Camp	
H560	Galveston-Freeport Campground	
H598	Treasure Island	
H608	Public	
H616	San Luis West Bait Camp	
H722	San Luis Pass Public	

Water Intake Points		
RARNUM	OWNER	TYPE
H114	U. S. Fish and Wildlife Service	6
H114	U. S. Fish and Wildlife Service	6

BIOLOGICAL RESOURCES

Mammals																		
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	MATING	CALVING
530	Bottlenose dolphin				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
552	River otter				X	X	X	X	X	X	X	X	X	X	X	X		
596	Bottlenose dolphin				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC

Birds																				
RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
1	Piping plover	S/F	T/T		X	X	X	X	X			X	X	X	X	X	-	-	-	-
523	Lesser scaup				X	X	X					X	X	X	X	X	-	-	-	-
	Bufflehead				X	X	X					X	X	X	X	X	-	-	-	-
	Redhead				X	X	X	X				X	X	X	X	X	-	-	-	-
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
529	Green-winged teal				X	X	X	X				X	X	X	X	X	-	-	-	-
	Mottled duck				X	X	X	X	X	X	X	X	X	X	X	X	JAN-AUG	JAN-AUG	JAN-AUG	FEB-SEP
	Northern pintail				X	X	X	X				X	X	X	X	X	-	-	-	-
	Northern shoveler				X	X	X	X				X	X	X	X	X	-	-	-	-
	Waterfowl				X	X	X	X				X	X	X	X	X	-	-	-	-
530	Terns				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
532	American oystercatcher			LOW	X	X	X	X	X	X	X	X	X	X	X	X	MAY-AUG	MAY-AUG	MAY-AUG	MAY-SEP
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
534	Least tern	F	E			X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	MAY-SEP	MAY-OCT
	Wilson's plover					X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-	-
	Black skimmer				X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-SEP	APR-SEP
539	Black skimmer				X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-SEP	APR-SEP
	Waterfowl				X	X	X	X				X	X	X	X	X	-	-	-	-
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
540	Gadwall				X	X	X	X				X	X	X	X	X	-	-	-	-
	American coot				X	X	X	X				X	X	X	X	X	-	-	-	-
	Northern shoveler				X	X	X	X				X	X	X	X	X	-	-	-	-
	Mottled duck				X	X	X	X	X	X	X	X	X	X	X	X	JAN-AUG	JAN-AUG	JAN-AUG	FEB-SEP
	Waterfowl				X	X	X	X				X	X	X	X	X	-	-	-	-
	American wigeon				X	X	X	X				X	X	X	X	X	-	-	-	-
	Yellow rail				X	X	X	X				X	X	X	X	X	-	-	-	-
	Clapper rail				X	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	APR-SEP
	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
542	Gulls				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Shorebirds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Piping plover	S/F	T/T		X	X	X	X				X	X	X	X	X	-	-	-	-
	Red knot				X	X	X	X				X	X	X	X	X	-	-	-	-
	Sanderling				X	X	X	X				X	X	X	X	X	-	-	-	-
	American oystercatcher			LOW	X	X	X	X	X	X	X	X	X	X	X	X	MAY-AUG	MAY-AUG	MAY-AUG	MAY-SEP
548	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
	Mottled duck				X	X	X	X	X	X	X	X	X	X	X	X	JAN-AUG	JAN-AUG	JAN-AUG	FEB-SEP
	Northern harrier				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP
	Rails				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-
550	Forster's tern				X	X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	MAR-SEP
552	Gadwall				X	X	X	X				X	X	X	X	X	-	-	-	-
	Blue-winged teal				X	X	X	X				X	X	X	X	X	-	-	-	-
	Northern shoveler				X	X	X	X				X	X	X	X	X	-	-	-	-
	Yellow rail				X	X	X	X				X	X	X	X	X	-	-	-	-
	Mottled duck				X	X	X	X	X	X	X	X	X	X	X	X	JAN-AUG	JAN-AUG	JAN-AUG	FEB-SEP
	American wigeon				X	X	X	X				X	X	X	X	X	-	-	-	-
	Green-winged teal				X	X	X	X				X	X	X	X	X	-	-	-	-
	Waterfowl			HIGH	X	X	X	X				X	X	X	X	X	-	-	-	-
	Northern pintail				X	X	X	X				X	X	X	X	X	-	-	-	-

CHRISTMAS POINT CONTINUED

BIOLOGICAL RESOURCES CONT.

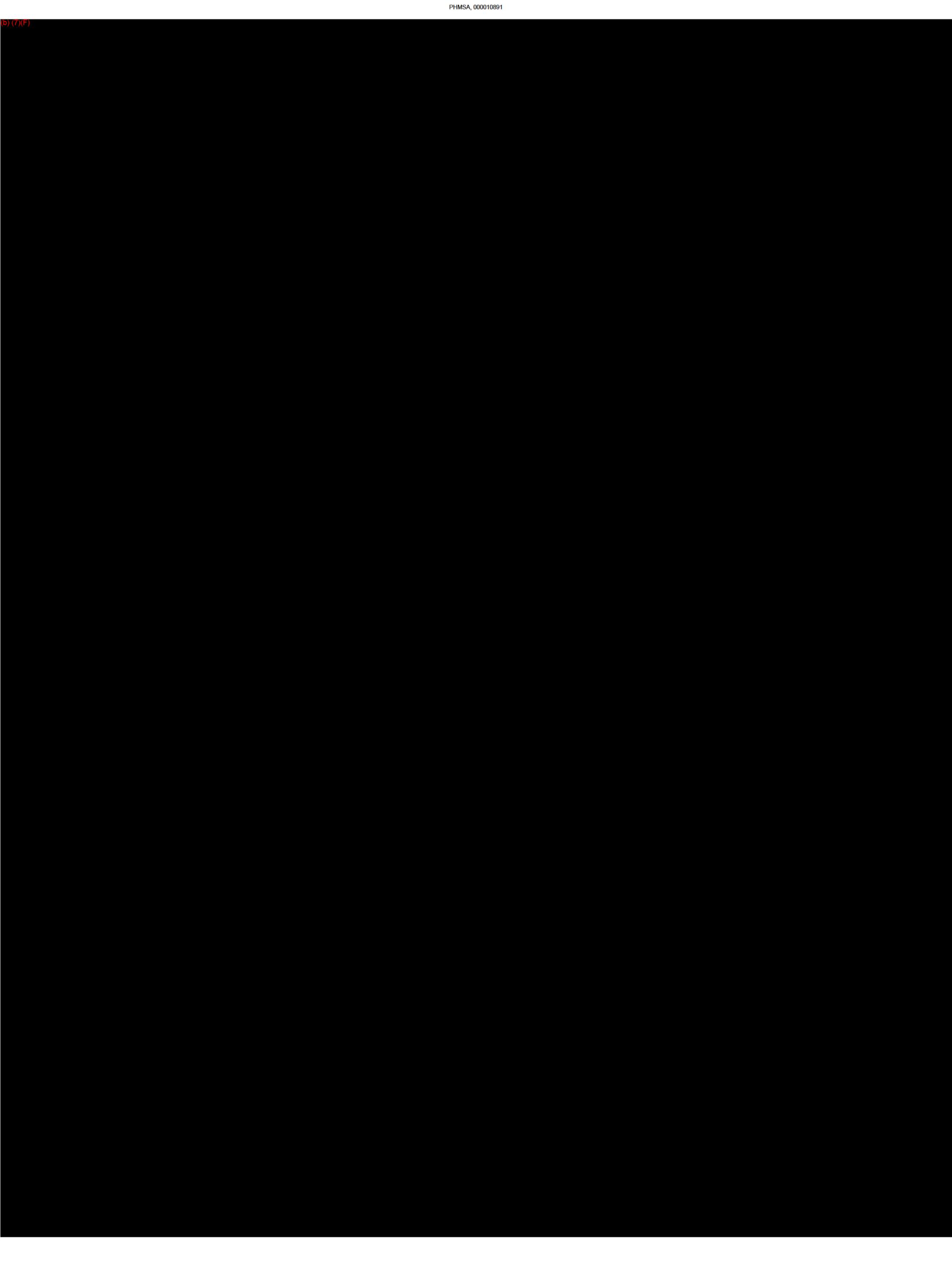
Birds Continued

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING	
552 Cont.	Black-necked stilt				X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-SEP	APR-SEP	
	Semipalmated sandpiper			HIGH	X	X	X	X						X	X	X	-	-	-	-	
	Short-billed dowitcher			HIGH	X	X	X	X					X	X	X	X	-	-	-	-	
	Dunlin			HIGH	X	X	X	X	X					X	X	X	-	-	-	-	
	Lesser yellowlegs				X	X	X	X				X	X	X	X	-	-	-	-		
	Shorebirds				X	X	X	X	X			X	X	X	X	-	-	-	-		
	Western sandpiper				X	X	X	X				X	X	X	-	-	-	-			
	Clapper rail				X	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	APR-SEP		
	Wading birds				X	X	X	X	X	X	X	X	X	X	-	-	-	-			
	Osprey	S	SC		X	X	X	X	X	X	X	X	X	X	-	-	-	-			
	Northern harrier				X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP			
561	Forster's tern			150	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	MAR-SEP			
	Laughing gull			80	X	X	X	X	X	X	X	X	X	X	FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP			
	Great blue heron			25	X	X	X	X	X	X	X	X	X	X	FEB-JUN	FEB-JUN	FEB-JUN	MAR-JUL			
	Tricolored heron			36	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP			
	Wading birds				X	X	X	X	X	X	X	X	X	-	-	-	-				
562	Wilson's plover				X	X	X	X	X	X	X	X					APR-JUN	-	-	-	
	Least tern	F	E		X	X	X	X	X	X	X	X					APR-SEP	APR-SEP	MAY-SEP	MAY-OCT	
	Black skimmer				X	X	X	X	X	X	X	X	X					APR-SEP	APR-SEP	APR-SEP	APR-SEP
	Least tern	F	E		X	X	X	X	X	X	X	X					APR-SEP	APR-SEP	MAY-SEP	MAY-OCT	
564	Red-breasted merganser				X	X	X	X	X					X	X	-	-	-	-		
	American coot				X	X	X	X				X	X	X	X	-	-	-	-		
	Bufflehead				X	X	X	X				X	X	X	X	-	-	-	-		
	Wading birds				X	X	X	X	X	X	X	X	X	X	-	-	-	-			
	Terns				X	X	X	X	X	X	X	X	X	X	-	-	-	-			
	Western sandpiper				X	X	X	X				X	X	X	-	-	-	-			
	Willet				X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP			
	Long-billed curlew	S	SC		X	X	X	X				X	X	X	X	-	-	-	-		
596	Franklin's gull				X	X	X	X				X	X	X	X	-	-	-	-		
674	Tricolored heron			36	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP			
	Great blue heron			25	X	X	X	X	X	X	X	X	X	X	FEB-JUN	FEB-JUN	FEB-JUN	MAR-JUL			
	Black skimmer			80	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-SEP	APR-SEP			
	Forster's tern			150	X	X	X	X	X	X	X	X	X	X	MAR-AUG	MAR-AUG	MAR-AUG	MAR-SEP			
	Laughing gull			80	X	X	X	X	X	X	X	X	X	X	FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP			

Fish

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	SPAWNING	LARVAL/JUV
520	Killifish				X	X	X	X	X	X	X	X	X	X	X	MAR-SEP	JAN-DEC	
	Inland silverside				X	X	X	X	X	X	X	X	X	X	X	-	-	
	Pinfish			HIGH	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY	
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT	
	Red drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC	
530	Pinfish				X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY	
534	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT	
	Red drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC	
535	Pinfish				X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY	
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR	
	Striped mullet				X	X	X	X	X	X	X	X	X	X	X	NOV-JAN	DEC-FEB	
	Southern flounder			HIGH	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC	
	Red drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC	
	Black drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR	
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT	
	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC	
537	Red drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC	
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT	
539	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR	
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT	
	Black drum				X	X	X	X	X	X	X	X	X	X	X	JAN-APR	JUL-MAR	
	Red drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC	
540	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC	
	Sand seatrout				X	X	X	X	X	X	X	X	X	X	X	-	MAR-DEC	
	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC	
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT	
	Gulf menhaden				X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	DEC-MAR	
	Red drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC	
541	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC	
	Inland silverside				X	X	X	X	X	X	X	X	X	X	X	-	-	
	Southern flounder			HIGH	X	X	X	X	X	X	X	X	X	X	X	-	OCT-DEC	
	Red drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC	
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT	
	Killifish				X	X	X	X	X	X	X	X	X	X	X	MAR-SEP	JAN-DEC	
543	Red drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC	
	Killifish				X	X	X	X	X	X	X	X	X	X	X	MAR-SEP	JAN-DEC	
	Atlantic croaker				X	X	X	X	X	X	X	X	X	X	X	-	APR-OCT	
	Spot				X	X	X	X	X	X	X	X	X	X	X	NOV-FEB	NOV-FEB	
	Pinfish			HIGH	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	MAR-MAY	
	Gafftopsail catfish				X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	MAY-AUG	
547	Red drum			HIGH	X	X	X	X	X	X	X	X	X	X	X	AUG-NOV	SEP-DEC	

(b) (7)(F)



SAN LUIS PASS

Map #48

HUMAN USE RESOURCES

Beach Access Points

ID	STREET
25	San Luis Pass Bridge
26	Intrepid Lane
27	Salt Cedar Drive
28	Second Street
29	First Street

BIOLOGICAL RESOURCES

Mammals

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	MATING	CALVING
571	Bottlenose dolphin				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC
596	Bottlenose dolphin				X	X	X	X	X	X	X	X	X	X	X	X	JAN-DEC	JAN-DEC

Birds

RARNUM	NAME	S/F	T/E	CONCEN	J	F	M	A	M	J	J	A	S	O	N	D	NESTING	LAYING	HATCHING	FLEDGING
566	Franklin's gull							X	X	X										
567	Wading birds				X	X	X	X	X	X	X	X	X	X	X	X				
	Roseate spoonbill				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	MAY-SEP
	Reddish egret	S	T		X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	APR-AUG	APR-AUG	APR-SEP
	Piping plover	S/F	T/T		X	X	X	X		X	X	X	X							
	Long-billed curlew	S	SC		X	X	X			X	X	X	X							
	Shorebirds				X	X	X	X		X	X	X	X							
	Gulls				X	X	X	X	X	X	X	X	X							
569	Wading birds				X	X	X	X	X	X	X	X	X							
	Roseate spoonbill				X	X	X	X	X	X	X	X	X				APR-AUG	APR-AUG	APR-AUG	MAY-SEP
	Piping plover	S/F	T/T		X	X	X	X		X	X	X	X							
	Gulls				X	X	X	X	X	X	X	X	X							
	Terns				X	X	X	X	X	X	X	X	X							
	Least tern	F	E			X	X	X	X	X	X	X					APR-SEP	APR-SEP	MAY-SEP	MAY-OCT
	Dunlin				X	X	X	X		X	X	X								
	Shorebirds				X	X	X	X		X	X	X								
	Sanderling				X	X	X			X	X									
	Short-billed dowitcher				X	X	X			X	X	X								
	Snowy plover				X	X	X	X	X	X	X	X	X				FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP
	Cormorant				X	X	X	X	X	X	X	X	X							
	American white pelican				X	X	X	X	X	X	X	X	X							
	Wading birds				X	X	X	X	X	X	X	X	X							
	Roseate spoonbill				X	X	X	X	X	X	X	X	X				APR-AUG	APR-AUG	APR-AUG	MAY-SEP
	Sanderling				X	X	X			X	X	X								
	Short-billed dowitcher				X	X	X			X	X	X								
	Piping plover	S/F	T/T		X	X	X	X		X	X	X	X							
	Snowy plover				X	X	X	X	X	X	X	X	X				FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP
	Dunlin				X	X	X	X		X	X									
	Shorebirds				X	X	X	X		X	X	X								
	Black skimmer				X	X	X	X	X	X	X	X	X				APR-SEP	APR-SEP	APR-SEP	APR-SEP
	Terns				X	X	X	X	X	X	X	X	X							
	Gulls				X	X	X	X	X	X	X	X	X							
	Brown pelican	F	E		X	X	X	X	X	X	X	X	X				APR-AUG	APR-AUG	APR-AUG	APR-SEP
	Least tern	F	E		X	X	X	X	X	X	X	X					APR-SEP	APR-SEP	MAY-SEP	MAY-OCT
571	Wading birds				X	X	X	X	X	X	X	X	X							
	Least tern	F	E			X	X	X	X	X	X	X					APR-SEP	APR-SEP	MAY-SEP	MAY-OCT
	Black skimmer				X	X	X	X	X	X	X	X	X				APR-SEP	APR-SEP	APR-SEP	APR-SEP
	Dunlin				X	X	X	X		X	X									
	Piping plover	S/F	T/T		X	X	X	X		X	X	X	X							
	Sanderling				X	X	X			X	X									
	Short-billed dowitcher				X	X	X			X	X									
	Snowy plover				X	X	X	X	X	X	X	X	X				FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP
	American avocet				X	X	X	X		X	X	X	X							
	Brown pelican	F	E	HIGH	X	X	X	X	X	X	X	X	X				APR-AUG	APR-AUG	APR-AUG	APR-SEP
	American white pelican			HIGH	X	X	X	X	X	X	X	X	X							
	Gulls				X	X	X	X	X	X	X	X	X							
	Terns			HIGH	X	X	X	X	X	X	X	X	X							
	Shorebirds				X	X	X	X		X	X	X								
	Gull-billed tern				X	X	X	X	X	X	X	X	X				FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP
	Franklin's gull					X	X			X	X									
	Forster's tern				X	X	X	X	X	X	X	X	X				MAR-AUG	MAR-AUG	MAR-AUG	MAR-SEP
	Royal tern				X	X	X	X	X	X	X	X	X				FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP
	Black tern				X	X	X			X	X									
	Caspian tern				X	X	X	X	X	X	X	X	X				MAR-JUN	MAR-JUN	MAR-JUN	MAR-JUL
	Sandwich tern				X	X	X	X	X	X	X	X	X				FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP
574	Gulls				X	X	X	X	X	X	X	X	X							
	Least tern	F	E			X	X	X	X	X	X	X					APR-SEP	APR-SEP	MAY-SEP	MAY-OCT
	Piping plover	S/F	T/T		X	X	X	X		X	X	X	X							
	Snowy plover				X	X	X	X	X	X	X	X	X				FEB-AUG	FEB-AUG	FEB-AUG	MAR-SEP
	Shorebirds				X	X	X	X		X	X	X								
	Terns				X	X	X	X	X	X	X	X	X							
	Black skimmer				X	X	X	X	X	X	X	X	X				APR-SEP	APR-SEP	APR-SEP	APR-SEP
	Black tern				X	X	X	X		X	X									

FIGURE 6.3
ENDANGERED/THREATENED SPECIES LISTING

Texas		
Animals		
Status	Species Name	Scientific Name
E	Amphipod, Peck's cave	<i>Stygobromus (=Stygonectes) pecki</i>
E	Bat, Mexican long-nosed	<i>Leptonycteris nivalis</i>
T	Bear, Louisiana black	<i>Ursus americanus luteolus</i>
E	Beetle, American burying	<i>Nicrophorus americanus</i>
E	Beetle, Coffin Cave mold	<i>Batrisodes texanus</i>
E	Beetle, Comal Springs dryopid	<i>Stygoparnus comalensis</i>
E	Beetle, Comal Springs riffle	<i>Heterelmis comalensis</i>
E	Beetle, Helotes mold	<i>Batrisodes venyivi</i>
E	Beetle, Kretschmarr Cave mold	<i>Texamaurops reddelli</i>
E	Beetle, Tooth Cave ground	<i>Rhadine persephone</i>
E	Crane, whooping except where EXPN	<i>Grus americana</i>
E	Curlew, Eskimo	<i>Numenius borealis</i>
E	Darter, fountain	<i>Etheostoma fonticola</i>
E	Falcon, northern aplomado	<i>Falco femoralis septentrionalis</i>
E	Flycatcher, southwestern willow	<i>Empidonax traillii extimus</i>
E	Gambusia, Big Bend	<i>Gambusia gaigei</i>
E	Gambusia, Clear Creek	<i>Gambusia heterochir</i>
E	Gambusia, Pecos	<i>Gambusia nobilis</i>
E	Gambusia, San Marcos	<i>Gambusia georgei</i>
E	Ground beetle, [unnamed]	<i>Rhadine exilis</i>
E	Ground beetle, [unnamed]	<i>Rhadine infernalis</i>
E	Harvestman, Bee Creek Cave	<i>Texella reddelli</i>
E	Harvestman, Bone Cave	<i>Texella reyesi</i>
E	Harvestman, Cokendolpher Cave	<i>Texella cokendolpheri</i>
E	Jaguar	<i>Panthera onca</i>
E	Jaguarundi, Gulf Coast	<i>Herpailurus (=Felis) yagouaroundi cacomitli</i>
E	Manatee, West Indian	<i>Trichechus manatus</i>

Texas (Cont'd)		
Animals		
Status	Species Name	Scientific Name
E	Margay Mexico southward	<i>Leopardus (=Felis) wiedii</i>
E	Meshweaver, Braken Bat Cave	<i>Cicurina venii</i>
E	Meshweaver, Government Canyon Bat Cave	<i>Cicurina vespera</i>
E	Meshweaver, Madla's Cave	<i>Cicurina madla</i>
E	Meshweaver, Robber Baron Cave	<i>Cicurina baronia</i>
T	Minnow, Devils River	<i>Dionda diaboli</i>
E	Minnow, Rio Grande silvery	<i>Hybognathus amarus</i>
E	Ocelot	<i>Leopardus (=Felis) pardalis</i>
T	Owl, Mexican spotted	<i>Strix occidentalis lucida</i>
E	Pelican, brown except U.S. Atlantic coast, FL, AL	<i>Pelecanus occidentalis</i>
T	Plover, piping except Great Lakes watershed	<i>Charadrius melodus</i>
E	Prairie-chicken, Attwater's greater	<i>Tympanuchus cupido attwateri</i>
E	Pseudoscorpion, Tooth Cave	<i>Tartarocreagris texana</i>
E	Pupfish, Comanche Springs	<i>Cyprinodon elegans</i>
E	Pupfish, Leon Springs	<i>Cyprinodon bovinus</i>
E	Salamander, Barton Springs	<i>Eurycea sosorum</i>
T	Salamander, San Marcos	<i>Eurycea nana</i>
E	Salamander, Texas blind	<i>Typhlomolge rathbuni</i>
E	Sawfish, smalltooth	<i>Pristis pectinata</i>
T	Sea turtle, green except where endangered	<i>Chelonia mydas</i>
E	Sea turtle, hawksbill	<i>Eretmochelys imbricata</i>
E	Sea turtle, Kemp's ridley	<i>Lepidochelys kempii</i>
E	Sea turtle, leatherback	<i>Dermochelys coriacea</i>
T	Sea turtle, loggerhead	<i>Caretta caretta</i>
T	Shiner, Arkansas River Arkansas R. Basin	<i>Notropis girardi</i>
E	Snail, Pecos assiminea	<i>Assiminea pecos</i>
T	Snake, Concho water	<i>Nerodia paucimaculata</i>

Texas (Cont'd)		
Animals		
Status	Species Name	Scientific Name
E	Spider, Government Canyon Bat Cave	<i>Neoleptoneta microps</i>
E	Spider, Tooth Cave	<i>Leptoneta myopica</i>
E	Tern, least interior pop.	<i>Sterna antillarum</i>
E	Toad, Houston	<i>Bufo houstonensis</i>
E	Vireo, black-capped	<i>Vireo atricapilla</i>
E	Warbler (=wood), golden-cheeked	<i>Dendroica chrysoparia</i>
E	Whale, finback	<i>Balaenoptera physalus</i>
E	Whale, humpback	<i>Megaptera novaeangliae</i>
E	Wolf, gray Lower 48 States, except where delisted and where EXPN. Mexico.	<i>Canis lupus</i>
E	Wolf, red except where EXPN	<i>Canis rufus</i>
E	Woodpecker, ivory-billed	<i>Campephilus principalis</i>
E	Woodpecker, red-cockaded	<i>Picoides borealis</i>

Texas		
PLANTS		
Status	Species Name	Scientific Name
E	Ambrosia, south Texas	<i>Ambrosia cheiranthifolia</i>
E	Ayenia, Texas	<i>Ayenia limitaris</i>
E	Bladderpod, white	<i>Lesquerella pallida</i>
E	Bladderpod, Zapata	<i>Lesquerella thamnophila</i>
E	Cactus, black lace	<i>Echinocereus reichenbachii</i> var. <i>albertii</i>
T	Cactus, Chisos Mountain hedgehog	<i>Echinocereus chisoensis</i> var. <i>chisoensis</i>
T	Cactus, Lloyd's Mariposa	<i>Echinomastus mariposensis</i>
E	Cactus, Nellie cory	<i>Coryphantha minima</i>
E	Cactus, Sneed pincushion	<i>Coryphantha sneedii</i> var. <i>sneedii</i>
E	Cactus, star	<i>Astrophytum asterias</i>
E	Cactus, Tobusch fishhook	<i>Ancistrocactus tobuschii</i>
E	Cat's-eye, Terlingua Creek	<i>Cryptantha crassipes</i>
T	Cory cactus, bunched	<i>Coryphantha ramillosa</i>
E	Dawn-flower, Texas prairie	<i>Hymenoxys texana</i>
E	Dogweed, ashy	<i>Thymophylla tephroleuca</i>
E	Frankenia, Johnston's	<i>Frankenia johnstonii</i>
E	Ladies'-tresses, Navasota	<i>Spiranthes parksii</i>
E	Manioc, Walker's	<i>Manihot walkerae</i>
T	Oak, Hinckley	<i>Quercus hinckleyi</i>
E	Phlox, Texas trailing	<i>Phlox nivalis</i> ssp. <i>texensis</i>
E	Pitaya, Davis' green	<i>Echinocereus viridiflorus</i> var. <i>davisii</i>
E	Pondweed, Little Aguja (=Creek)	<i>Potamogeton clystocarpus</i>
E	Poppy-mallow, Texas	<i>Callirhoe scabriuscula</i>
E	Rush-pea, slender	<i>Hoffmannseggia tenella</i>
E	Sand-verbena, large-fruited	<i>Abronia macrocarpa</i>
E	Snowbells, Texas	<i>Styrax texanus</i>
T	Sunflower, Pecos (=puzzle, =paradox)	<i>Helianthus paradoxus</i>

Texas (Cont'd)		
PLANTS (Cont'd)		
Status	Species Name	Scientific Name
E	Wild-rice, Texas	<i>Zizania texana</i>

APPENDIX A

RESPONSE EQUIPMENT/RESOURCES

A.1 [Company Owned Response Equipment](#)

A.2 [Other Company Resources](#)

A.3 [Contract Resources](#)

A.4 [Cooperative/Mutual Aid Resources](#)

A.5 [Volunteers](#)

A.6 [Communications](#)

Figure A.1 [Company Owned Spill Response Equipment](#)

Figure A.2 [Response Resources](#)

Figure A.3 [USCG OSRO Classifications](#)

Figure A.4 [OSRO Contracts](#)

A.1 COMPANY OWNED RESPONSE EQUIPMENT

The Company does not own or maintain any response equipment. The Company has contracts in place with Oil Spill Removal Organizations that are capable of responding to all discharges from the pipeline.

A.2 OTHER COMPANY RESOURCES

Additional Company spill response equipment and manpower resources may be available to supplement the response operation. These resources include:

- A general inventory of communications equipment, audio/video equipment, and other support items is available through Emergency Management.

A.3 CONTRACT RESOURCES

In the event of a discharge which is beyond the initial response capabilities of the Local Response Team, contract manpower and equipment resources can be obtained through Oil Spill Removal Organization(s) (OSRO). These OSROs can provide manpower and containment/clean-up equipment for the response operation.

The resources will be secured from a Company approved contractor. Management will typically handle notification/implementation of these resources. Figure A.2 provides a quick reference to the Oil Spill Removal Organizations and details their response capability and estimated response times. **Telephone reference is provided in Figure 2.5.** *(Note: The Company will ensure that each OSRO has a comprehensive maintenance program and applicable training / drills programs in place at contract renewal.)*

A.4 COOPERATIVE/MUTUAL AID RESOURCES

The Facility is not currently associated with a Cooperative/ Mutual Aid system. All response resources would be either Company owned or contracted.

A.5 VOLUNTEERS

The Company will not use volunteers for response operations. All volunteers will be referred to the State or Federal On-Scene Coordinator.

A.6 COMMUNICATIONS

Effective and efficient communications systems are essential for emergency response at every level. The communications system will be utilized to gather information and current status reports as well as to provide coordination and direction to widely separated work groups involved in search, containment/ diversion, repair, traffic control, public control or evacuation, and restoration.

Lines of communication between the Incident Commander, Local Response Team, and Emergency Management members are demonstrated in the organization charts shown in Figures 4.1 through 4.5. Communication of the overall spill response operation between the Facility and the responsible government agencies in the Federal Regional Response Team (RRT) will occur between the Incident Commander and the Federal On-Scene Coordinator. Appendix J provides additional detail on the Federal Response Organization.

Central Communications System

Prearranged communication channels are of the utmost importance in dealing with Company emergencies. The notification procedures and telephone contacts documented in Section 2.0 will be reviewed in accordance with the earlier documented updating procedures. The predetermined communications channels include the following:

- A list of emergency telephone numbers for internal management and emergency response personnel (Figures 2.2 and 2.5).
- A list of emergency telephone numbers for various external resources such as the Fire Departments, Public Officials and local agencies is provided in the Annexes.
- A list of emergency telephone numbers for contract response resources (Figure 2.5).

Communications Equipment

Field communications during a spill response will be handled via radios, telephones, cellular phones, fax machines, and computers and will be maintained by Company personnel. In the event of a Worst Case Discharge, field communications will be enhanced with contract resources as the situation demands.

Communications Type

Voice communications may be conducted over the public telephone system or Company provided two-way radio equipment.

Radios- Handheld and vehicle mounted radio sets are the most effective means of communication for the field response operation. The units are battery operated, multichanneled, and have a typical range that will cover the area of the response operation. Additional radio sets and battery packs/charges will be necessary in the event of a prolonged response operation.

Telephone (Conventional)- Conventional land-line telephones are the most effective means of communication for regulatory and advisory notifications during response operations. Additional telephone lines can be installed in the event of a prolonged response operation.

Cellular- Cellular telephones allow for added mobility and response effectiveness. Cellular phones are commonly maintained by certain Company personnel. Additional cellular phones can be secured in the event of a prolonged response operation.

FAX Machines- FAX machines allow for a rapid transfer of information/ documentation such as status reports/updates, written notifications, and purchase orders.

Computers- Computers are commonly used in networks which allow access to various other locations and company personnel. Computers also speed the consolidation of information and preparation of written report.

FIGURE A.1**COMPANY OWNED SPILL RESPONSE EQUIPMENT**

Company Owned Response Equipment		
NAME	LOCATION	DESCRIPTION
	NONE	

FIGURE A.2

RESPONSE RESOURCES

Zone : East Texas Response Zone

Classified Oil Spill Removal Organization (OSRO)						
OSRO Name	Contract Number	Environment Type	Facility Classification Level			
			MM	W1	W2	W3
National Response Corporation	N/A	River/Canal	X	X	X	X
		Inland	X	X	X	X
		Open Ocean			X	X
		OffShore			X	X
		Near Shore			X	X
		Great Lakes				

FIGURE A.3**USCG OSRO CLASSIFICATIONS**

The USCG has classified OSROs according to their response capabilities, within each Captain of the Port (COTP) zone, for vessels and for facilities in four types of environments. Response capabilities are rated MM, W1, W2, or W3 as described below.

MINIMUM EQUIPMENT REQUIREMENTS FOR OSRO CLASSIFICATIONS			
Classification	Resource Quantity Guidelines	Maximum Facility Response Times	Maximum Vessel Response Times
Rivers/Canals			
MM	Protective Boom: 4,000*ft EDRC: 1,200 bbls TSC: 2,400 bbls	High Volume Ports: 6 hours Other Ports: 12 hours	High Volume Ports: 12 hours Other Ports: 24 hours
W1	Protective Boom: 25,000*ft EDRC: 1,875 bbls TSC: 3,750 bbls	High Volume Ports: 12 hours Other Ports: 24 hours	High Volume Ports: 12 hours Other Ports: 24 hours
W2	Protective Boom: 25,000*ft EDRC: 3,750 bbls TSC: 7,500 bbls	High Volume Ports: 30 hours Other Ports: 36 hours	High Volume Ports: 36 hours Other Ports: 48 hours
W3	Protective Boom: 25,000*ft EDRC: 7,500 bbls TSC: 15,000 bbls	High Volume Ports: 54 hours Other Ports: 60 hours	High Volume Ports: 60 hours Other Ports: 72 hours
Great Lakes			
MM	Protective Boom: 6,000*ft EDRC: 1,250 bbls TSC: 2,500 bbls	All Ports: 6 hours	All Ports: 12 hours
W1	Protective Boom: 30,000*ft EDRC: 6,250 bbls TSC: 12,500 bbls	High Volume Ports: 12 hours Other Ports: 24 hours	High Volume Ports: 12 hours Other Ports: 24 hours
W2	Protective Boom: 30,000*ft EDRC: 12,500 bbls TSC: 25,000 bbls	All Ports: 36 hours	All Ports: 42 hours
W3	Protective Boom: 30,000*ft EDRC: 25,000 bbls TSC: 50,000 bbls	All Ports: 60 hours	All Ports: 66 hours

MINIMUM EQUIPMENT REQUIREMENTS FOR OSRO CLASSIFICATIONS			
Classification	Resource Quantity Guidelines	Maximum Facility Response Times	Maximum Vessel Response Times
Inland			
MM	Protective Boom: 6,000*ft EDRC: 1,200 bbls TSC: 2,400 bbls	High Volume Ports: 6 hours Other Ports: 12 hours	High Volume Ports: 12 hours Other Ports: 24 hours
W1	Protective Boom: 30,000*ft EDRC: 12,500 bbls TSC: 25,500 bbls	High Volume Ports: 12 hours Other Ports: 24 hours	High Volume Ports: 12 hours Other Ports: 24 hours
W2	Protective Boom: 25,000*ft EDRC: 12,500 bbls TSC: 25,500 bbls	High Volume Ports: 30 hours Other Ports: 36 hours	High Volume Ports: 36 hours Other Ports: 48 hours
W3	Protective Boom: 25,000*ft EDRC: 50,500 bbls TSC: 100,500 bbls	High Volume Ports: 54 hours Other Ports: 60 hours	High Volume Ports: 60 hours Other Ports: 72 hours
Great Lakes			
MM	Protective Boom: 8,000*ft EDRC: 1,200 bbls TSC: 2,400 bbls	High Volume Ports: 6 hours Other Ports: 12 hours	High Volume Ports: 12 hours Other Ports: 24 hours
W1	Protective Boom: 30,000*ft EDRC: 12,500 bbls TSC: 25,500 bbls	High Volume Ports: 12 hours Other Ports: 24 hours	High Volume Ports: 12 hours Other Ports: 24 hours
W2	Protective Boom: 30,000*ft EDRC: 25,500 bbls TSC: 50,500 bbls	High Volume Ports: 30 hours Other Ports: 36 hours	High Volume Ports: 36 hours Other Ports: 48 hours
W3	Protective Boom: 30,000*ft EDRC: 50,000 bbls TSC: 100,000 bbls	High Volume Ports: 54 hours Other Ports: 60 hours (for open ocean, plus travel time from shore)	High Volume Ports: 60 hours Other Ports: 72 hours (for open ocean, plus travel time from shore)

MINIMUM EQUIPMENT REQUIREMENTS FOR OSRO CLASSIFICATIONS					
Classification	Resource Quantity Guidelines		Maximum Facility Response Times		Maximum Vessel Response Times
Offshore					
MM	Protective Boom:	6,000*ft	High Volume Ports:	6 hours	High Volume Ports: 12 hours
	EDRC:	1,200 bbls	Other Ports:	12 hours	Other Ports: 24 hours
	TSC:	2,400 bbls			
W1	Protective Boom:	15,000*ft	High Volume Ports:	24 hours	High Volume Ports: 24 hours
	EDRC:	12,500 bbls	Other Ports:	48 hours	Other Ports: 48 hours
	TSC:	25,500 bbls			
W2	Protective Boom:	15,000*ft	High Volume Ports:	30 hours	High Volume Ports: 36 hours
	EDRC:	25,000 bbls	Other Ports:	36 hours	Other Ports: 48 hours
	TSC:	50,000 bbls			
W3	Protective Boom:	15,000*ft	High Volume Ports:	54 hours	High Volume Ports: 60 hours
	EDRC:	50,000 bbls	Other Ports:	60 hours	Other Ports: 72 hours
	TSC:	100,000 bbls			
Open Ocean					
MM	Protective Boom:	0*ft	High Volume Ports:	6 hours	High Volume Ports: 12 hours
	EDRC:	1,200 bbls	Other Ports:	12 hours	Other Ports: 24 hours
	TSC:	2,400 bbls			
W1	Protective Boom:	0*ft	High Volume Ports:	6 hours	High Volume Ports: 12 hours
	EDRC:	12,500 bbls	Other Ports:	12 hours	Other Ports: 24 hours
	TSC:	25,500 bbls			
W2	Protective Boom:	0*ft	High Volume Ports:	30 hours	High Volume Ports: 36 hours
	EDRC:	25,000 bbls	Other Ports:	36 hours	Other Ports: 48 hours
	TSC:	50,000 bbls			
W3	Protective Boom:	0*ft	High Volume Ports:	54 hours	High Volume Ports: 60 hours
	EDRC:	50,000 bbls	Other Ports:	60 hours	Other Ports: 72 hours
	TSC:	100,000 bbls			

1. Rivers/canals include bodies of water, including the Intracoastal Waterway and other bodies artificially created for navigation, confined within an inland area and having a project depth of 12 feet (3.66 meters).
2. EDRC stands for "effective daily recovery capacity," or the calculated recovery capacity of oil recovery devices determined by using a formula that takes into account limiting factors such as daylight, weather, sea state, and emulsified oil in the recovered material.
3. TSC stands for "temporary storage capacity," meaning sufficient storage capacity equal to twice the EDRC of an OSRO. Temporary storage may include inflatable bladders, rubber barges, certified barge capacity, or other temporary storage that can be utilized on scene at a spill response and which is designed and intended for the storage of flammable or combustible liquids. It does not include vessels or barges of opportunity for which no pre-arrangements have been made. Fixed shore-based storage capacity, ensured available by contract or other means, will be acceptable.

* In addition, 1,000 feet of containment boom plus 300 feet per skimming system.

FIGURE A.4
AGREEMENTS/CONTRACTS

[Click to view the file - NRC Contract 19 4 2012 11 26 50.pdf](#)

[Click to view the file - Contract 11559 Amendment 008 19 4 2012 11 27 0.pdf](#)

ORIGINAL

KM REVISION 11-22-05

AGREEMENT FOR PROFESSIONAL EMERGENCY RESPONSE SERVICES

NUMBER: 05-ER-45-064-ORG

COMMENCES: JUNE 1, 2005

BETWEEN

KINDER MORGAN OPERATING L.P. "D"

AND

NATIONAL RESPONSE CORPORATION

TABLE OF CONTENTS

1.0	TERM	5
2.0	CONTRACT DOCUMENTS, SCOPE OF WORK AND ADMINISTRATION.....	5
3.0	CONSIDERATION AND CHANGES TO THE WORK	13
4.0	INSPECTION.....	14
5.0	INSURANCE	14
6.0	PAYMENT, AND LIENS	16
7.0	INDEPENDENT CONTRACTOR	18
8.0	INDEMNIFICATION.....	18
9.0	COMPLIANCE WITH LAWS	20
10.0	CALIFORNIA RELEASE NOTIFICATION REQUIREMENTS.....	20
11.0	DRUG/ALCOHOL/FIREARMS/OPERATOR QUALIFICATION POLICY AND TESTING	21
12.0	CONFIDENTIALITY.....	21
13.0	SUSPENSION.....	22
14.0	TERMINATION AND RIGHT TO AUDIT	23
15.0	ASSIGNMENT.....	25
16.0	NOTICES.....	25
17.0	CONFLICT OF INTEREST.....	25
18.0	FORCE MAJEURE.....	26
19.0	LIABILITIES, WARRANTIES AND TITLE	26
20.0	WAIVER	28
21.0	SPECIAL PROVISIONS	28
22.0	DISPUTES.....	28
23.0	SEPARABILITY	29
24.0	SURVIVAL OF OBLIGATIONS	29
25.0	SUCCESSORS AND ASSIGNS.....	29
26.0	LIABILITY OF GENERAL PARTNER.....	29
27.0	SERVICES FOR AFFILIATES	29
28.0	ENTIRE AGREEMENT	29
	EXHIBIT A-1 – WORK DIRECTIVE	31
	EXHIBIT B – SCHEDULE OF VALUES	34
	EXHIBIT C – CERTIFICATE OF INSURANCE	46
	EXHIBIT D – UNITED STATES ENVIRONMENTAL PROTECTION AGENCY	47
	EXHIBIT E – PROJECT SCOPE CHANGE ORDER	49
	EXHIBIT F – DRUG & ALCOHOL/OPERATOR QUALIFICATION PROGRAM REQUIREMENTS	50
	EXHIBIT G – KINDER MORGAN CONTRACTOR SAFETY RULES & REGULATIONS.....	51
	EXHIBIT H – PARENT GUARANTY	66

AGREEMENT FOR PROFESSIONAL EMERGENCY RESPONSE SERVICES

Agreement Number: 05-ER-45-064-ORG

THIS AGREEMENT is made as of the **22nd day of November , 2005**, by and between **Kinder Morgan Operating L.P. "D"** a Delaware Limited Partnership, and, to the extent of any Work Directive executed by any of its affiliates or subsidiaries, those affiliates and subsidiaries, respectively, acting as agent for Kinder Morgan and its affiliates and subsidiaries who are requiring such work as set forth in this Agreement and/or in **Exhibit A-1** (Work Directive) and who will be releasing payments for such work, with its principal place of business in **Houston, Texas**, hereinafter referred to as "**COMPANY**", and **National Response Corporation**, a Delaware corporation having its principal office at 3500 Sunrise Highway, Great River, New York 11739 hereinafter referred to as "**CONSULTANT**".

WITNESSETH:

WHEREAS, COMPANY desires the services of CONSULTANT and a network of subcontractors and/or Local Contractors (as defined in **Section 2.2** below), including NRC Environmental Services Inc., to provide OSRO Coverage Services and be available to provide Emergency Response Services for the containment and cleanup of oil, discharge of hazardous material and non-hazardous materials, and

WHEREAS, CONSULTANT represents that it is qualified and desires to provide OSRO Coverage Services and to perform such Emergency Response Service (as defined in **Section 2.4** below) for COMPANY.

NOW, THEREFORE, in consideration of the promises and mutual covenants contained herein, the parties do hereby agree as follows:

1.0 TERM

1.1 This Agreement becomes effective upon the date first above written and shall continue until December 31, 2008; (unless earlier terminated pursuant to Section 14.1 or 14.2 below); provided however this Agreement may be extended by agreement of the parties upon COMPANY's written notice given at least ninety (90) days prior to expiration of the then current term; and further provided that if a Work Directive issued under this Agreement is continuing beyond the expiration date, the term of this Agreement shall be extended automatically for ninety (90) days or until that Work Directive has been completed, whichever occurs first. All rates and fees under this agreement shall be subject to adjustment on an annual basis.

2.0 CONTRACT DOCUMENTS, SCOPE OF WORK AND ADMINISTRATION

2.1 This Agreement shall consist of the Contract Documents itemized below. In the event of a conflict between or among the provisions of the Contract Documents, the more or most specific provision shall control:

2.1.1 Agreement Number **05-ER-45-064-ORG**

2.1.2 **Exhibit A** Work Directive(s) as may be issued from time to time (including Scope of Work)

2.1.3 **Exhibit B** Schedule of Values

2.1.4 **Exhibit C** Certificate of Insurance

2.1.5 **Exhibit D** (1) United States Environmental Protection Agency Title III, List of Lists, Consolidated List of Chemicals Subject to the Emergency Planning and Community Right To Know Act (EPCRA) and Section 112(r) of the Clean Air Act, published April 1995, as amended

2.1.6 **Exhibit E** Project Scope Change Order

- 2.1.7 **Exhibit F** INTENTIONALLY OMITTED
- 2.1.8 **Exhibit G** Kinder Morgan Contractor Safety Rules & Regulations
- 2.1.9 **Exhibit H** Parent Guaranty

Note that any references to "CONTRACTOR" in an Exhibit, apply to CONSULTANT.

2.2 Definitions:

- 2.2.1 **"Best Endeavors"** means, with respect to either party, the performance in good faith to the extent of its total capabilities;
- 2.2.2 **"Classification"** means classification or other governmental approval required or available under Federal Law and State Law for an Oil Spill Removal Organization to be designated as such in the Response Plan;
- 2.2.3 **"Contract Documents"** means all relevant documents described in **Section 2.1** of this Agreement.
- 2.2.4 **"Day"** or **"Week"** means, respectively, a calendar day or seven (7) calendar days.
- 2.2.5 **"Designated Representative"** means the person identified as COMPANY'S Designated Representative in **Section 2.8** of this Agreement.
- 2.2.6 **"Discharge"** means any emission (other than natural seepage), including, but not limited to, spilling, leaking, pumping, pouring, emitting, emptying or dumping of Oil;
- 2.2.7 **"Drills"** means any drills, exercises, practices or other preparatory or simulated activities in connection with which the COMPANY has requested the CONSULTANT to mobilize or deploy Response Resources or to provide other services;
- 2.2.8 **"Emergency Response Services"** shall have the meaning given in **Section 2.4** below.
- 2.2.9 **"Environmental Law"** means any and all federal, state, and local laws, regulations and requirements pertaining to health, safety, or the environment, including the United States Oil Pollution Act (33 U.S.C. 2701, et seq.) ("OPA") and the Federal Water Pollution Control Act (33 U.S.C. 1321, et seq.) ("FWPCA") and any other laws regarding a Discharge and Emergency Response Services and regulations promulgated pursuant thereto;
- 2.2.10 **"Force Majeure"** has the meaning given in **Section 18.1** below.
- 2.2.11 **"Hazardous Material"** means (a) all elements or compounds that are contained in the list of hazardous substances adopted by the United States Environmental Protection Agency and the list of toxic pollutants designated by Congress or the Environmental Protection Agency or under any Environmental Laws; (b) any "hazardous waste," "hazardous substance" (including, but not limited to, petroleum and petroleum-related materials), "toxic substance," regulated substance," pollutant" or "contaminant", each as defined under any Environmental Laws and (c) oil of any kind or in any form when it is classified as a hazardous substance under any applicable State or Federal Law, including any and all substances defined or identified as oil under OPA.
- 2.2.12 **"Hereunder," "herein"** and words of similar import shall refer to this Agreement as a whole, rather than to a single provision.

reduced to writing and signed by an authorized representative of each of the parties. To the extent any Work Directive issued pursuant to this Agreement conflicts with this Agreement, the Work Directive shall prevail.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

COMPANY:

Kinder Morgan Operating L.P. "D"

By: Kinder Morgan G.P., Inc., its General Partner

By: Kinder Morgan Management, LLC
the delegate of the General Partner

CONTRACTOR:

National Response Corporation

Sherry Z. Clifford
SIGNATURE

November 30, 2005
DATE

Sherry Z. Clifford
NAME (Please Print)

Manager, Contract Administration
TITLE (Please Print)

[Signature] FOR
SIGNATURE

11/22/05
DATE

James J. Godfrey, JR. SAC
NAME (Please Print)

Vice President, National Response Corporation
TITLE (Please Print)

Kinder Morgan Operating L.P. "D"

February 17, 2012

**Agreement No. 11559
Amendment No. 8**

NRC ENVIRONMENTAL SERVICES COMPANY
 Attention: Stephanie Barton
 3500 Sunrise Highway, Suite T103
 Great River, NY 11739
 Email: sbarton@nrces.com

Re: Amendment to Term & Rates

Dear Stephanie Barton:

Pursuant to the terms and conditions of Agreement No. 11559 effective **June 1, 2005**, by and between **KINDER MORGAN OPERATING L.P. "D"** and **NRC ENVIRONMENTAL SERVICES COMPANY**, which Agreement is made a part hereof by reference, the same as if set forth herein in full, you are hereby requested to amend the Agreement to include the following:

Section 1.0 TERM**Replace** "shall continue until February 18, 2012"**With** "shall continue until February 18, 2013"**EXHIBIT B SCHEDULE OF VALUES**

Section 5.0 Replace previous Price List with new Price List Effective February 18, 2012

All other terms and conditions of Agreement No. 11559, as amended by prior contract amendments (if any), which are not changed by this amendment will continue in full force and effect.

This amendment now forms an integral part of this Agreement. Confirm your acceptance by signing on the line provided and return to COMPANY'S Contract Administrator as listed below:

KINDER MORGAN OPERATING L.P. "D"
 Attention: **Michael Martinez**
 1100 Town And Country Road
 7th Floor
 Orange, CA 92868

This Amendment is effective as of February 19, 2012.

COMPANY:

KINDER MORGAN OPERATING L.P. "D"

By: Kinder Morgan G.P., Inc.,
Its General Partner

By: Kinder Morgan Management, LLC,
the Delegate of the General Partner

CONTRACTOR:

NRC ENVIRONMENTAL SERVICES COMPANY

Michael Martinez

SIGNATURE

Michael Martinez

NAME (Please Print)

Purchasing Supervisor

TITLE (Please Print)

February 17, 2012

DATE

DATE

Stephanie Barton

SIGNATURE

SIGNATURE

Stephanie Barton

NAME (Please Print)

Director, Emergency Response

TITLE (Please Print)

TITLE (Please Print)

2/17/12

DATE

DATE



PRICE LIST

Effective February 18, 2012

Price List Terms: Customer's request for NRC Environmental Services Inc. (NRCES) to perform services constitutes an agreement to pay for those services under the Personnel, Equipment and Material Terms of this Price List, regardless of any estimates provided by NRCES. Charges will be based on the most current published Price List. Surcharges to current published rates may apply in non-local areas. Surcharges may also apply to cover unanticipated cost increases for items, including but not limited to fuel and insurance, resulting from circumstances beyond the control of NRCES. Rates are based upon net 10 payment terms unless otherwise agreed by prior written contract with NRCES. Balances outstanding more than ten (10) days after the invoice date shall be deemed delinquent and shall earn interest at the rate of 1.5 % per month. Customers without a pre-existing NRCES contract are subject to a minimum charge of \$3,500.00 to be paid at time of call out for emergency response services and any charges for services estimated to exceed the minimum are also payable in advance. All prices are in U.S. dollars.

PERSONNEL

ITEM #	DESCRIPTION	HOURLY RATE
SP	Senior Project Manager	135.00
CH	Certified Industrial Hygienist (NRCES only)	125.00
PM	Project Manager	110.00
IH	Industrial Hygienist (non-CIH)	100.00
SU	Superintendent	90.00
AM	Assistant Project Manager (Operations, Planning, Logistics, Finance)	90.00
HS	Health & Safety / Training Manager	85.00
SA	Senior Accountant	85.00
SM	Support Manager (Purchasing, Communications, Transportation, Decon, Disposal)	80.00
PS	Project Scientist / Field Chemist	75.00
PR	Purchaser / Subcontracts Administrator	65.00
AS	Administrative Support / Accountant	50.00
FS	Field Supervisor	70.00
MC	Mechanic / Welder	70.00
EO	Equipment Operator	60.00
DR	Driver (Commercial)	55.00
SF	Site Foreman	55.00
RT	Confined Space / Rescue Technician	50.00
LO	Licensed Vessel Operator	75.00
VO	Vessel Operator	55.00
DH	Deckhand	45.00
TE	Technician – HAZWOPER	45.00
ST	Support Technician (Warehouseman, Personnel, Resource Coordinator)	45.00

Personnel Terms:

- Minimum call out is 4 hours per person, except for projects over 50 miles from office location require 8-hour daily minimum.
- Rates for FS, MC, EO, DR, RT, SF, LO, VO, DH, TE, SA, AS and ST are subject to the following: a) Weekdays: 0700 to 1500 hours charged at Straight Time (ST = Hourly Rate); 1500 to 1900 hours charged at Overtime (OT = 1½ times the Hourly Rate); 1900 to 0700 hours charged at Double Time (DT = 2 times the Hourly Rate). Changes to start times for Weekday ST, OT and DT may be requested by Client and may be approved by NRCES on a case-by-case basis for longer projects. b) Saturday: First 8 hours charged at OT; hours over first 8 hours charged at DT.. c) Sundays and Holidays: All time charged at DT. d) The following are included holidays: New Years Day, Presidents Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Day after Thanksgiving and Christmas Day. Other holidays may apply when employing certain union personnel, including but not limited to: Martin Luther King, Jr. Day, Cesar Chavez's Birthday, Veterans Day, day before Christmas and day after Christmas. e) The above Rates are applied regardless of the number of hours worked for any Client on any particular day. Rates for hours subsequent to a break of less than 8 hours are charged at the appropriate OT or PT rate continuous to hours prior to break.
- All project specific personnel, including accounting, administrative, personnel support, logistics and management, whether on site, at NRCES offices, or at support locations, are chargeable. All personnel are charged according to the above rates, regardless of full-time, part-time or third party labor source status, unless provided as part of a specified subcontracted service. Surcharges apply for remote sites and prevailing-wage projects.
- Time charges begin with equipment and personnel mobilization activities and terminate at the conclusion of the services, including transportation of equipment and personnel back to operations centers and any necessary demobilization activities. Personnel time is charged in half-hour increments for all personnel. All hourly rates will be charged Portal-to-Portal from the location of personnel when dispatched, including but not limited to NRCES office, personnel home, hotel or other jobsite as applicable. Personnel on standby for Customer will be charged at 8 hours per 24-hour period.
- Transportation and any incidental costs for all emergency response personnel, both on site, at support locations and traveling to and from the site or support locations, are charged at cost plus 20%. Per Diem charges for food in metropolitan areas are \$50.00 per person per day. Typical per diem rates for lodging, based on double occupancy, are \$100.00 per person per day. Rates for premium areas and remote sites determined at time of service.

EQUIPMENT

CATEGORY	ITEM #	DESCRIPTION	UNIT	RATE
BOOM	1001/1002	Anchor Gear / Boom Mooring Light	Day/Each	30.00/13.00
	1003	Contractor Boom, up to 21"	Ft/Day	1.75
	1004	Petro Barrier, up to 24"	Ft/Day	2.50
	1005	Ocean Boom, up to 42"	Ft/Day	6.75
RECOVERY / SKIMMERS	2001	Air Conveyor, VS-50	Day	3,000.00
	2002	Belt Skimmer, Marco Class XI-C	Day	4,000.00
	2003	Belt Skimmer Vessel, JBF DIP 3001	Hour	350.00
	2004	Belt Skimmer Vessel, Marco I C	Hour	375.00
	2005	Brush Skimmer, Lamor	Day	3,600.00
	2006	Brush Skimmer, Aquaguard RBS-40	Day	2,500.00
	2007	Brush Skimmer, Aquaguard RBS-25 or 10 Twin	Day	2,000.00
	2008	Brush/Drum/Disc Skimmer, Aquaguard RBS-05	Day	850.00
	2009	Disc Skimmer, MI-30, Komara 12K	Day	1,800.00
	2010	Disc Skimmer, Vikoma Sea Skimmer	Day	2,000.00
	2011	Drum Skimmer, Roto 70	Day	3,500.00
	2012	Drum Skimmer, Action Petroleum Model 60	Day	1,400.00
	2013	Drum Skimmer, Action Petroleum Model 36	Day	1,200.00
	2014	Drum Skimmer, Action Petroleum Model 24	Day	800.00
	2015	Rope Mop Skimmer, II-9	Day	800.00
	2016	Rope Mop Skimmer, I-4, II-4, II-6	Day	600.00
	2017	Rope Mop Skimmer, extra rope, 100'	Day	110.00
	2018	Vacuum/Transfer Unit (VTU)	Day	1,800.00
	2019	Weir Skimmer, Desmi 250	Day	3,500.00
	2020	Weir Skimmer, Foilex, vacuum	Day	1,500.00
2021	Weir Skimmer, Foilex, hydraulic	Day	2,500.00	
2022	Weir, Cascade LP 3000 or Vikoma Fastflowec	Day	1,600.00	
2023	Weir Skimmer, Skimpak or Oleo, 2" or 3"	Day	300.00	
TEMPORARY STORAGE	3001	Bladder Tank, 24 barrel	Day	250.00
	3002	Bladder Tank, 25 - 100 barrel	Day	500.00
	3003	Bladder Tank, 101 - 240 barrel	Day	1,000.00
	3004/3005	Container, Intermodal or Connex Storage, 20' / 40'	Day	22.00/44.00
	3006/3007	Roll-off Bins, up to 20 cu. yd. / 30-40 cu. yd.	Day	22.00/44.00
	3008	Storage Tank, 500 to 2,499 gal	Day	20.00
	3009	Storage Tank, 2,500 to 4,499 gal	Day	25.00
	3010	Storage Tank, 4,500 to 6,000 gal	Day	35.00
	3011	Tank Barge, up to 210 bbls (NRCES only)	Day	1,500.00
	3014	Tank Barge, Pebble Beach	Day	9750.00
	3012	Tote Tank, DOT approved, 275 to 300 gal	Day	80.00
	3013	Vacuum Box, up to 25 cu. yd.	Day	80.00
	VESSELS / SUPPORT	4001	Deck Barge, up to 110'	Day
4002		Response Vessel, 65'	Hour	375.00
4003		Response Vessel, 35' - 55'	Hour	225.00
4004		Response Vessel, 30' - 34'	Hour	160.00
4005		Response Vessel, 25' - 29'	Hour	125.00
4006		Response Vessel, 16'- 24'	Hour	100.00
4007		Skiffs w/outboard, 15' or less	Hour	50.00
4008		Skiffs w/o outboard	Hour	25.00
EXCAVATION	5001	Backhoe, 710 or equivalent	Day	375.00
	5002	Backhoe, 580 or equivalent	Day	325.00
	5003/5004	Backhoe Attachment, Breaker / Compactor	Each/Day	220.00/125.00
	5006	Dump Bed, Morooka 5-10 cu. yd.	Day	350.00

CATEGORY	ITEM #	DESCRIPTION	UNIT	RATE
	5021	Dump Truck, 5 cu. Yd, w/ Plow & Sander	Hour	175.00
	5007	Excavator, Mini	Day	325.00
	5008	Excavator, up to 37,000 lb	Day	850.00
	5009	Excavator, 38,000 to 53,000 lb	Day	1,050.00
	5010	Excavator, over 53,000 lb	Day	1,500.00
	5017	Excavator, over 100,000 lb	Hour	250.00
	5011/5012	Excavator Attachment, Thumb or Wheel / Hammer	Each/Day	350.00/550.00
	5013	Loader, Bobcat, Skidsteer or equivalent	Day	350.00
	5014	Loader Attachment, Breaker, Compactor, Grapple	Each/Day	175.00
	5015	Loader, up to 4 yds.	Day	650.00
TRAILERS	6001	Trailer, Confined Space Entry/Rescue	Day	2,000.00
	6002	Trailer, Decon, up to 24'	Day	350.00
	6003	Trailer, Dump, 7,000 lb	Day	250.00
	6004	Trailer, Dump, Side/End, 18 yd.	Hour	35.00
	6005	Trailer, Emergency Response, up to 24'	Day	350.00
	6006	Trailer, Emergency Response, 40'- 48'	Day	500.00
	6007/6008	Trailer, Equipment, Utility, 1-2 ton / 3-10 ton	Day	100.00/250.00
	6009	Trailer, Flatbed, up to 48'	Day	250.00
	6010	Trailer, Incident Command Center, 24'	Day	650.00
	6011	Trailer, Incident Command Center, 48'	Day	1,500.00
	6012	Trailer, Low Boy	Day	300.00
	6013	Trailer, MTR (boom, boat, skimmer add'l if deployed)	Day	350.00
	6014	Trailer, Office	Day	200.00
	6015	Trailer, Rocket (Roll Off) Launcher	Hour	40.00
	6016	Trailer, Side Dump, 3 axle	Day	600.00
	6017	Trailer, Tilt Top, 26 ton	Day	250.00
	6018	Trailer, Van, up to 48'	Day	350.00
	6019	Trailer, Water Buffalo (up to 500 gallons, with pump)	Day	200.00
	6020	Trailer, Wildlife Response and Rehab (supplies add'l)	Day	2,500.00
	6021	Trailer, Wildlife Search & Collection	Day	1,000.00
	6022	Trailer, Wildlife Support	Day	350.00
TRUCKS	7001	Tractor, Diesel	Hour	45.00
	7002	Truck, Camera	Hour	125.00
	7003	Truck, Crane, 1 ton - 6 ton	Hour	65.00
	7004	Truck, Crane, 7 ton - 10 ton	Hour	75.00
	7005	Truck, Crane, 10 ton - 18 ton	Hour	95.00
	7006	Truck, Crane, 40 ton	Hour	140.00
	7007	Truck, Dump, up to 10 yard	Hour	60.00
	7008/7009	Truck, Dump, over 10 yard / with pup	Hour	65.00/70.00
	7016	Truck, Flatbed or Van, 2-Axle, up to 24'	Hour	45.00
	7010	Truck, Gear, less than 1 ton	Day	125.00
	7012	Truck, Gear, 1 ton	Day	150.00
	7014	Truck, Gear, 2 ton - 5 ton	Day	225.00
	7017	Truck, Hazmat Response, up to 24'	Hour	75.00
	7018	Truck, Marine Response	Hour	50.00
	7019/7020	Truck, Roll Off, bobtail / with trailer	Hour	70.00/80.00
	7021	Truck, Water, up to 3000 gallons	Hour	110.00
VACUUM	8001	Guzzler/Air Mover (filters add'l)	Hour	150.00
TRUCKS /	8002	Vactor/Jetter - Combo Unit (attachments add'l)	Hour	185.00
TRAILERS	8003/8004	Vacuum Trailer, 120 -130 bbl, black iron/ stainless	Hour	30.00/45.00
	8005/8006	Vacuum Truck, less than 35 bbl / 35 - 70 bbl	Hour	50.00/60.00
	8007	Vacuum Trailer, less than 50 bbl	Hour	25.00
VEHICLES	9001/9002	All Terrain Vehicle / cargo carrying	Day	240.00/375.00
	9003	Auto, Personnel or Support	Day	100.00

CATEGORY	ITEM #	DESCRIPTION	UNIT	RATE
	9004	Van, MTR (boom, boat, skimmer add'l if deployed)	Day	400.00
	9005	Van, Maintenance, Personnel or Support	Day	150.00
	9006	Wildlife Transport-Care Vehicle	Day	600.00
BLOWERS / COMPRESSORS	1101	Air Compressor, up to 100 CFM	Day	150.00
	1102	Air Compressor, 100 to 185 CFM	Day	225.00
	1103	Air Compressor, 210 to 375 CFM	Day	325.00
	1104	Blower, Coppus, Electric/Pneumatic	Day	100.00
	1105/1106	Blower, Negative Air Exhaust, 6" / 12" (consumables add'l)	Day	75.00/110.00
	1107	Blower, Venturi, Horn	Day	30.00
	1109	Corken Compressor (291T / Corrosive Compatible)	Day	750.00
	1110	Corken Compressor (490T / Corrosive Compatible)	Day	1000.00
	1108	Exhaust Duct, 25' x 6", 10" or 12"	Day	25.00
PRESSURE WASHERS	1202	Hydroblaster, 6,000 psi	Hour	50.00
	1203	Hydroblaster, 10,000 psi	Hour	70.00
	1204	Hydroblaster, 20,000 psi	Hour	180.00
	1209	Jetter Trailer	Hour	95.00
	1206	Pipeline Lancing Nozzle, w/ Hose & Foot Pedal	Day	75.00
	1207/1210	Pressure Washer, up to 3,000 psi, single / dual w/ tank	Day	250.00/600.00
	1208	Pressure Washer, 3,000 to 5,000 psi	Day	350.00
	1205	Remote Tank Cleaning (Gamajet) Head	Day	275.00
	1201	Specialty Nozzles, Roto Jet or Butterworth or equivalent	Day	45.00
PUMPS	1311	Air Conveyor, Vac-U-Max	Day	150.00
	1301/1302	Pump, up to 1", Petroleum / Chemical	Day	60.00/95.00
	1313	Pump, 1" or 2", Jet (Gas Eductor)	Day	\$250.00
	1303/1304	Pump, 2", Petroleum / Chemical	Day	85.00/195.00
	1305	Pump, 2", Chemical Peristaltic	Day	350.00
	1306/1307	Pump, 3", Petroleum / Chemical	Day	100.00/295.00
	1312	Pump, 3", Hydraulic (Archimedes/MT30) w/power pack	Day	1,500.00
	1308/1309	Pump, 4", Petroleum / Petro-Submersible	Day	175.00/325.00
	1310	Pump, 5"- 6", Petroleum	Day	400.00
	1314	Pump, Blackmer Stainless Steel Sliding Vane	Day	650.00
	1315	Pump, Corken, Coro Vane or Equivalent	Day	650.00
	1316	Pump, Double Diaphragm, stainless steel, 1" / 2"	Day	200.00/300.00
HOSES / PIPES FITTINGS	1405	Guzzler/Air Mover Vacuum Breaker	Day	30.00
	1406	Guzzler/Air Mover/Jetter Fittings (elbows, tees, etc.)	Day/Each	8.00
	1423	Hose, Chlorine Transfer, certified	Ft/Day	45.00
	1415/1416	Hose, Discharge (lay flat) 2" / 3"	50 ft/Day	10.00/12.00
	1417/1418	Hose, Discharge (lay flat) 4" / 6"	50 ft Day	15.00/25.00
	1401/1402	Hose, Fire, 1.5" / 2.5"	50 Ft/Day	15.00/17.50
	1403/1404	Hose, Guzzler/Air Mover, Flex or Pipe, 4" / 6"	Ft/Day	3.50/4.00
	1420	Hose, Hydraulic, 1"	Ft/Day	25.00
	1421/1422	Hose, LPG/NH ₃ , 1" Vapor / 2" Liquid Transfer	Ft/Day	10.00/20.00
	1407	Hose, Pneumatic	50 Ft/Day	10.00
	1425	Hose, Stainless Steel	Ft/Day	35.00
	1408/1409	Hose, Suction & Discharge, 2", Petro / Chemical	25 Ft/Day	15.00/30.00
	1410/1411	Hose, Suction & Discharge, 3", Petro / Chemical	25 Ft/Day	25.00/40.00
	1412/1413	Hose, Suction & Discharge, 4", Petro / Chemical	25 Ft/Day	35.00/60.00
	1414	Hose, Suction & Discharge, 6", Petro	25 Ft/Day	45.00
	1424	Hose, Teflon, 1" Rubber Jacketed or 2" Stainless Braid	Ft/Day	35.00
	1419	Hose, Wash, up to 1"	50 ft/Day	10.00
	1426	Stinger, 2", CPVC/SS/Carbon	Day	100.00
	1427	Transfer Fittings (gauges, nipples, risers, etc.)	Transfer	250.00
SUPPORT	1501	Air Knife	Day	150.00
	1554	Airless Sprayer	Day	85.00

CATEGORY	ITEM #	DESCRIPTION	UNIT	RATE
SUPPORT (cont.)	1555/1502	Bag Filter System, Single / Dual Pod (bag filters add'l)	Day	60.00/75.00
	1567/1568	Banding Equipment, 2-inch	Hour/Day	30.00/240.00
	1503	Carbon Filtration System, 55 gal drum	Each	350.00
	1504	Chipping Gun, Pneumatic	Day	40.00
	1505	Compactor, Hand Operated	Day	150.00
	1506	Decon Cleaning Pool, Portable 10' x 15'	Day	125.00
	1507	Decon Cleaning Pool, Portable 10' x 30'	Day	200.00
	1508	Decon Cleaning Pool, Portable 20' x 100'	Day	550.00
	1509	Decon Cleaning Pool, Portable 25' x 50'	Day	275.00
	1510/1553	Decon Station, Personnel 2 / 3 Stage (supplies add'l)	Day	50.00/75.00
	1511	Electrical Accessories (cords, GFI, adaptors)	Day	14.00
	1559/1560	Flare, Ground Set 2" / 3"	Day	200.00/300.00
	1561	Flare, Stack, 2"	Day	100.00
	1562	Flow Meter, 2", Stainless Steel	Day	150.00
	1512/1513	Forklift, 5K to 10K lb / Attachment	Day	275.00/100.00
	1514	Generator, less than 4 kW	Day	50.00
	1515	Generator, 4 kW to less than 7.5 kW	Day	115.00
	1516	Generator, 7.5 kW to 12.5 kW	Day	165.00
	1517	Handheld Pipeline Locator System	Day	150.00
	1518	Jackhammer	Day	150.00
	1519	Ladder, Extension & Folding	Day	40.00
	1557/1558	Laser Level Kit, 1/16" x 100' / 1/4" x 100'	Day	55.00/15.00
	1520	Light Tower, Trailer Mounted	Day	175.00
	1521	Light, Explosion-Proof	Day	44.00
	1522/1523	Light, Stand, Regular, 500W / 1000W	Day	16.00/60.00
	1524	Office Space (for command post at NRCES as available)	Day	1,500.00
	1525	Pipe Plug 4" to 18" (includes 20' air line hose)	Day	95.00
	1526	Pipe Plug 18" to 24" (includes 20' air line hose)	Day	155.00
	1527	Pipe Plug 24" to 36" (includes 20' air line hose)	Day	175.00
	1528	Pipe Plug 36" to 48" (includes 20' air line hose)	Day	215.00
	1529	Pipe Plug 48" to 60" (includes 20' air line hose)	Day	350.00
	1563	Portable Breathing Air Compressor	Day	375.00
	1530	Power Pack, Hydraulic, 1 hp (<0.75 kW)	Day	50.00
	1531	Power Pack, Hydraulic, 16 hp (0.75 kW < 12 kW)	Day	138.00
	1532	Power Pack, Hydraulic, 40 hp (12 kW < 30 kW)	Day	275.00
	1533	Power Pack, Hydraulic, 60 hp (30 kW < 45 kW)	Day	500.00
	1564	Power Pack, Hydraulic, 75 hp (45 kW - 56 kW)	Day	750.00
	1534	Road Closure Signs, reflective	Day/Each	50.00
	1535	Road Closure, Barricades, Cones, Delineators	Day/Each	5.00
	1536	Sand & Floor Dry Spreader Attachment	Day	95.00
	1537/1538	Saw, Chain / Cutoff	Day	60.00/125.00
	1539	Soil Sampler, Hollow Stem	Day	50.00
	1556	Surf Rake, Model 600 HD	Day	750.00
	1540	Tools, Hand (brooms, shovels, etc.)	Each/Day	5.00
	1541	Tools, Mechanical Set	Each/Day	50.00
	1542	Tools, Non-Sparking	Each/day	15.00
	1543	Tools, Power, small (drills, sawzall etc.)	Each/Day	35.00
	1565	Trident Magnetic Patch	Day	1,000.00
	1544	Truck Ramps	Day	150.00
	1545/1546	Vacuum, HEPA / Shop (filters add'l)	Day	250.00/50.00
	1547	Vactor/Jetter Attachment (hydro-exca, Drum-lt Head, nozzles)	Day/Each	95.00
	1566	Vapor Extraction System, portable	Day	350.00
1548	Welding Unit / Torch Set, Portable	Day	85.00	
1549	Wildlife Rehabilitation Pool	Day	200.00	
1550	Wildlife Shelter, 19' x 35'	Day	2,000.00	
1551	Wildlife Shelter, 20' x 20'	Day	750.00	

CATEGORY	ITEM #	DESCRIPTION	UNIT	RATE
	1552	Yokohama Fenders, 8' diameter	Day	175.00
COMMS	1601	Base Station	Day	75.00
	1602	Cellular Phone (airtime over \$10 per day add'l)	Day	35.00
	1603	Computer and/or Printer	Day	95.00
	1604	GPS Unit	Day	50.00
	1605	High Power Repeater System w/Generator	Day	300.00
	1606	Radio, UHF or VHF, Portable	Day	25.00
	1607	Satellite Phone (includes 20 minutes airtime per day)	Day	75.00
	1608	Satellite Dish for HS Internet	Day	125.00
SAFETY	1701	Air Sampling Kit (tubes add'l)	Day	40.00
	1702	Chest or Hip Waders, Insulated Cooling Vests	Day	25.00
	1703	Chlorine A/B/C Response Kits (gaskets add'l)	Day	500.00
	1726	Cylinder Containment Device	Day	2,000.00
	1727	Complete Turnout/Bunker Gear	Day	275.00
	1704	Eyewash Station	Day	35.00
	1705	Drager CMS Meter	Day	200.00
	1706	Floatation Work Suit	Day	50.00
	1707	Floatation Work Vest, PFD	Day	10.00
	1710	Harness/Lanyard/Safety Line	Day	25.00
	1711	Meter, 4EC Radiation	Day	350.00
	1712	Meter, LEL/O2/H2S/CO	Day	150.00
	1725	Meter, LEL/O2/H2S/CO/PID	Day	250.00
	1713	Meter, Jerome Mercury	Day	600.00
	1723	Meter, Lumex Mercury	Day	850.00
	1714	Meter, Personal / Gillian, Single/4-gas	Each/Day	35.00
	1715	Meter, Personal / Particulate Monitoring	Day	150.00
	1716	Meter, PID/HNU/OVA	Day	200.00
	1717	Mercury Vacuum (consumables add'l)	Day	750.00
	1728	Midland Capping Kit	Day	1,000.00
	1724	Remote Drum Drilling Unit	Day	600.00
	1708/1709	Respirator, Full Face / Half Face (cartridges add'l)	Day	25.00/20.00
	1718	Salvage Cylinder/Coffin	Day	1,500.00
	1719/1729	SCBA or Egress Bottles w/ lines / Refill	Day/Each	125.00/25.00
	1720	Six Pack / Regulated Air Supply (includes up to 300' airline)	Day	300.00
	1721	Tripod and Winch	Day	250.00
	1722	Truck Rollover/Cylinder Drill Kit/Betts Valve	Day	400.00

Equipment Terms:

1. NRCES does not rent equipment in a bare condition. All equipment shall be operated and controlled by NRCES Personnel only. All equipment sent to site by NRCES shall be in a basic operating condition. Additional components charged to customer include, but are not limited to, multiple hose lengths, blast shields, specialty tips or fittings, specialty connections, noise abatement, catalytic converters, etc. Equipment prices do not include fuel, operator or mobilization unless otherwise stated. Fuel consumed in non-mileage related operation of equipment, including vehicle and non-vehicle equipment and vessels, will be charged at cost plus 20%. Vacuum truck washouts will be charged at cost plus 20%. Regulatory permits and environmental fees (HP Fees, BTU Fees, etc) shall be assessed at cost plus 20% based upon the equipment and duration of such unit.
2. Time charges are calculated portal to portal, including any demurrage beginning with equipment mobilization activities from the NRCES office or operations center unless otherwise specified, including all time at the site. Time charges terminate at the conclusion of the operation, which includes transportation of equipment back to NRCES office or operations center and completion of any necessary demobilization activities, including disposal, cleaning, repair, replacement and/or delivery to NRCES of restored equipment.
3. Day rates are based on 8 hours of operation. Equipment will be charged in half-day increments for additional hours over 8, up to a total of 3 days charge during a 24-hour period. Minimum charge for daily rate equipment is daily charge per day. Minimum call out for hourly equipment is four hours per day for local projects and eight hours per day for projects over 50 miles from mobilization site. Customers will be charged for unused requested equipment until released and returned to service per Note 2.
4. Equipment not specified on the Price List will be charged at cost (including rental, insurance, freight, fuel, etc.) plus 20%.
5. In addition to payment of rental charges, Customer agrees to pay NRCES, in accordance with rates contained in this Price List, for any cleaning or repairs necessary to return all equipment to the same condition as at the commencement of services (with the exception of normal wear and tear). Customer is also responsible for the payment of all transportation and disposal charges for any waste generated during cleaning. Only NRCES or its subcontractors shall perform any cleaning and decontamination operations on all equipment owned, rented or subcontracted by NRCES. If NRCES determines that equipment cannot be returned to the condition it was in at the commencement of the services, Customer shall pay for all costs at cost plus 20%, including freight and other expenses incurred by NRCES to replace this equipment. All boom, whether new or used, that is damaged beyond repair shall be replaced by NRCES with new boom at Customer's expense at cost plus 20%, including freight and other expenses.

MATERIALS AND SUPPLIES

CATEGORY	ITEM #	DESCRIPTION	UNIT	RATE
BAGS/SHEETING	M100	Bulk Bag, 1 yard	Each	22.00
	M101	Plastic Bag, 36" x 60", 6 mil, 50/roll or box	Roll/Box	95.00
	M102	Plastic Bag, 36" x 60" (drum liner)	Each	3.00
	M103	Roll Off Box Liner	Each	35.00
	M104	Sheeting, 20' to 32' x 100', 10 mil	Roll	155.00
	M105	Sheeting, 20' to 32' x 100', 6 mil	Roll	115.00
CLEANERS	M205/M200	Cleaner, Hand, 14 oz tub / 1 gallon	Each	4.00/30.00
	M201	Cleaner, Marine/Industrial (Simple Green or equivalent)	Gallon	25.00
	M202	Disinfectant (bleach, A-33, or equivalent)	Gallon	3.00
	M204	Decon Solvent (HD Citrus Degreaser, BioSolve, PES-51)	Gallon	77.00
	M207	Mercury Cleaning Solution	Gallon	65.00
	M206	Mercury Vapor Suppressant	Pound	34.00
CONTAINERS	M318	1 Gallon, Poly Pail	Each	10.00
	M301/M313	5 Gallon, Bucket w/ Lid / Plastic Carboy	Each	18.00/20.00
	M302	10 Gallon, Open Top, Steel	Each	95.00
	M319	15 Gallon, Open Top, Poly	Each	61.00
	M303	20 Gallon, Open Top, Steel	Each	65.00
	M304	30 Gallon, Open or Close Top, Refurbished	Each	56.00
	M305/M314	55 Gallon, Close Top, Steel, Refurbished / New	Each	60.00/90.00
	M306/M315	55 Gallon, Open Top, Steel, Refurbished / New	Each	60.00/90.00
	M316/M307	55 Gallon, Open or Close Top, Poly, Refurb / New	Each	71.00/90.00
	M308	85 Gallon, Overpack, Unlined, Black	Each	225.00
	M309	85 Gallon, Overpack, Lined, Yellow	Each	255.00
	M310	95 Gallon, Overpack, Poly	Each	265.00
	M317/M311	275-300 Gallon, Liquid Tote, DOT, Recon / New	Each	225.00/450.00
	M312	Triwall Box, Cubic Yard, DOT Approved	Each	125.00
SAFETY	M400	Acid Suit, 1 Piece	Each	90.00
	M401	Boot, Steel Toed, PVC/Nitrile	Pair	28.00
	M442	Face Shield	Each	10.00
	M402	Glove, Brown Jersey	Pair	3.00
	M403	Glove, Inner, Cotton, Latex or Nitrile	Pair/Box	1.00
	M404	Glove, Inner, Cotton, Latex or Nitrile	50/Box	30.00
	M405	Glove, Silver Shield	Pair	4.50
	M406	Glove, Heavy Duty, PVC, Green, PVC 14"	Pair	4.00
	M407	Glove, Heavy Duty, Black	Pair	8.00
	M408	Glove, Heavy Duty, Butyl Rubber	Pair	30.00
	M409	Hard Hat	Each	25.00
	M410	Overboot, Disposable	Pair	5.00
	M425	Protective Gear Level A	Each	1,400.00
	M426/M427	Protective Gear Level B	Each/Change	450.00/300.00
	M428/M429	Protective Gear Level C	Each/Change	85.00/55.00
	M430/M431	Protective Gear Level D	Each/Change	35.00/20.00
	M432	Rain Gear, 2 Piece	Set	20.00
	M433	Respirator, Cartridge, Single, OV, Acid Gas, P100	Pair	25.00
	M443	Respirator Cartridges, Combo	Pair	33.00
	M434	Respirator, Cartridge, Mercury/chlorine	Pair	50.00
	M436	Safety Eyewear	Each	7.00
M438	Safety Vest	Each	25.00	
M444	Thermo Pro	Each	450.00	
M439	Tyvek Suit, Coated, Saranex	Each	30.00	
M440	Tyvek Suit, Disposable	Each	12.00	
M441	Tyvek Suit, Poly-Coated	Each	13.00	

CATEGORY	ITEM #	DESCRIPTION	UNIT	RATE
SORBENTS	M500	Absorbent, Chemical Stabilizer, 35 lb	Bag	130.00
	M501	Absorbent, Absorb X	Bag	17.50
	M512	Chemical pads, 15" x 9", 100/Bale	Bale	90.00
	M502	Floor Dry 25 lb	Bag	10.50
	M503	Neutralizer (citric acid, soda ash or bicarbonate)	Bag	65.00
	M504	Oil Snare on Rope, 50 ft/Bag	Bag	135.00
	M505	Oil Snare, 30/Carton	Carton	110.00
	M513	Orange Construction Fence, 4'x100'	Roll	45.00
	M506	Sorbent Boom 5" x 10', 4/Bale	Bale	100.00
	M507	Sorbent Boom 8" x 10', 4/Bale	Bale	185.00
	M508	Sorbent Roll, SXT 638, 38" x 144' x 3/8"	Roll	175.00
	M509	Sorbent Sheet 17" x 19" x 3/8", 100/Bale	Bale	75.00
	M510	Sorbent Sweep 17" x 100' x 3/8"	Each	130.00
	M514	Straw Waddles, 25 ft/Roll	Roll	30.00
	M511	Vermiculite, 4 cu.ft. /Bag	Bag	28.00
	MISCELLANEOUS	M621	Air Mover Dry Filter Sock	Each
M600		Banner Tape, 3"	Roll	20.00
M619		Catch Basin Filter	Each	53.00
M601		Cotton Rags, 25 lb Box/Bale	Each	50.00
M602		Decon Pool, Small Personnel	Each	30.00
M603		Sample Supplies (pogo pump, jars, brass tubes, caps)	Each	7.00
M604		Duct Tape, 2"	Roll	7.50
M605		HazCat Kit (each fingerprint)	Per Test	25.00
M622/M623		HEPA Vacuum Consumables, Standard / Complete	Each	50.00/450.00
M606		Mercury Vacuum Consumables Change Out	Each	75.00
M620		Negative Air Exhaust Consumables Change Out	Each	170.00
M607		Petro Flag Test Kit	Per Test	35.00
M612		Photo Documentation, Disposable or Digital	Each	35.00
M613		Poly Rope, 600', up to 1/2"	Roll	90.00
M614		Sand Bags, Filled	Each	8.50
M616		Sprayer, Hand Held (Hudson), 3 gal.	Each	55.00
M801		Water, Drinking, 24/case	Case	14.00
M850		Mileage for Car (M850 + Eq Item#)	Mile	0.65
M851		Mileage for Trucks/Vans (M851 + Eq Item#)	Mile	0.75
M852		Mileage for Commercial Trucks (M852 + Eq Item#)	Mile	0.95
M860	Equipment Fuel (Gasoline) (M860 + Eq Item#)	Gallon	4.50	
M870	Equipment Fuel (Diesel) (M870 + Eq Item#)	Gallon	5.00	
M901/M902	Transportation to TSDF, Triwalls / Drums	Each	160.00/45.00	
D903	Disposal of Non-Haz Liquid Waste at NRCES	Gallon	0.35	

Materials and Supplies Terms:

- All materials and supplies utilized, whether listed in daily reports or not, are chargeable. Any materials or supplies not listed on Price List, including Wildlife Trailer supplies and expendables and third-party invoices for services, charged at cost plus 20%.
- Quotes for waste disposal are based on meeting approved profiles. NRCES will assist Customer in identifying disposal facility options and provide price quotes. However, this does not constitute a referral and it is the sole responsibility of the Customer to designate the disposal facility. NRCES will not take title to any wastes: dangerous, hazardous or non-hazardous.
- The number of change-outs of Personal Protective Equipment (PPE) are based on conditions occurring in the work area. PPE shall be changed at a frequency that conforms to safety practices to prevent exposure to employees during the work activity. PPE categories:
 - Level D: Coveralls/Uniform, Steel Toe Boots, Safety Glasses, Work Gloves, Hard Hat and Safety Vest as applicable;
 - Level C: Level D plus, Disposable Tyvek, Full Face or Half Face Respirator (excluding cartridges);
 - Level B: Level C plus supplied air and egress air bottle or SBCA (Supplied air equipment includes mask, 100' air supply hose, supplied air, bottle manifold and egress bottle or SBCA);
 - Level A: Quoted per Price List for specific project requests and requirements
- Petroleum based products prices subject to change at any time based on increased manufacturing costs.
- NRCES reserves the right to substitute products of equal quality and construction without affecting the performance. NRCES applies the Brand Name of a product as a reference only, and reserves the right to substitute the product for similar and or equivalent products as it deems necessary.
- NRCES use of facility-directed or customer-directed decontamination products, including but not limited to degreasing agents, cleaners, strippers, conditioners, cutter stock, etc, shall be done at the facility's or customer's risk.
- A surcharges of \$0.15 per mile will be added to Mileage rates for every \$0.50 over \$4.00 cost per gallon of diesel. A surcharge of \$0.25 per gallon will be added to Equipment Fuel rates for every \$0.20 over \$3.75 cost per gallon of gasoline and \$4.00 cost per gallon of diesel. Fuel cost data will be based on fuel prices in the local NRCES office area at time of service per U.S. Energy Information Administration statistics available at www.eia.gov.

APPENDIX B

WORST CASE DISCHARGE ANALYSIS AND SCENARIOS

[Introduction](#)

[East Texas Response Zone](#)

[Worst Case Discharge Planning Volume Calculations](#)

INTRODUCTION

This Appendix identifies potential causes for oil discharges and discusses the response efforts that are necessary for successful mitigation. Included in this Appendix are hypothetical scenarios for various types of spills that have the potential to occur along the system. It is anticipated that the Company will respond to spills in a consistent manner regardless of the location. Therefore, the guidelines discussed in this appendix will apply to all spills whenever possible.

United States Department of Transportation/Pipeline and Hazardous Materials Safety Administration Discharge Volume Calculation

- **Worst Case Discharge**

The largest volume (Bbls) of the following:

- *Pipeline's maximum release time (hrs), plus the maximum shutdown response time (hrs), multiplied by the maximum flow rate (bph), plus the largest line drainage volume after shutdown of the line section.*

--OR--

- *Largest foreseeable discharge for the line section is based on the maximum historic discharge, if one exists, adjusted for any subsequent corrective action or preventive action taken.*

--OR--

- *Capacity of the single largest breakout tank or battery of tanks within a single secondary containment system, adjusted for the capacity or size of the secondary containment system.*

Scenario Types

Release volume prior to line shutdown and valve closures:

- Full flow release due to rupture. This is computed at the maximum pumping rate for each line segment.
- Detection time, analysis and pump shutdown in adverse weather conditions. This is based on a maximum of 15 minutes in the event of a full flow rupture, which would cause an instant alarm.
- Line segment valve closures. All line segments are equipped with remote activating isolation valves. Adverse weather would have no impact on line segment isolation, as isolation valves are not dependent on manual closure.

Line drainage following pump shutdown:

- The Integrity Management Program study computed the maximum potential line drainage between adjacent isolation or check valves, and incorporated pipeline elevation profiles to estimate how much of that total volume would escape at any release point along the line.

The response actions to each of these scenarios are outlined in Section 3.1 and Figure 3.1. The response resources are identified in a quick reference format in Figure 2.5. Pipeline response personnel list/telephone numbers and other internal/external resources telephone numbers are detailed in Figures 2.2 and 2.5.

RESPONSE CAPABILITY SCENARIOS

East Texas Response Zone

(b) (7)(F)



Response Requirement

The Company has identified sufficient response resources, by contract or other approved means, to respond to a Worst Case Discharge to the maximum extent practicable. These response resources include:

- Resources capable of arriving at the staging area within the applicable response tier requirements for non-high volume areas (Tier 1 = 12 hours; Tier 2 = 36 hours; Tier 3 = 60 hours).
- Resources capable of arriving at the staging area within the applicable response tier requirements for high volume areas (Tier 1 = 6 hours; Tier 2 = 30 hours; Tier 3 = 54 hours).
- Resources capable of oil recovery in inclement weather conditions (i.e. heavy rain, snow, ice).

Notes

- Contracted and Company owned equipment and manpower resources are detailed in Figure 2.5 and Appendix A.
- Telephone references are provided in Figures 2.2 and 2.5.

Breakout Tank Worst Case Discharge = 0 Bbls***Volume***

There are no breakout tanks in the Response Zone, therefore there is no volume calculations.

East Texas Response Zone

RESPONSE PLANNING VOLUME CALCULATIONS

Location Data			
Location Type			Inland/Near Shore
Port Type			Non-High Volume
WCD Product Type			Condensate
Product Group			2
(b) (7)(F)			
Discharge Volumes/Calculations			
(b) (7)(F)			
Selected Calculation Factors (Based on USCG Tables)			
Removal Capacity Planning Volume - Percent Natural Dissipation			50%
Removal Capacity Planning Volume - Percent Recovered Floating Oil			50%
Removal Capacity Planning Volume - Percent Oil Onshore			30%
Emulsification Factor			1.8
Tier 1 - On Water Oil Recovery Resource Mobilization Factor			15%
Tier 2 - On Water Oil Recovery Resource Mobilization Factor			25%
Tier 3 - On Water Oil Recovery Resource Mobilization Factor			40%
Response Planning Volume Calculation			
On-Water Recovery Volume (bbls)			24,693
Shoreline Recovery Volume (bbls)			14,816
Shoreline Cleanup Volume (bbls)			26,669
	Tier 1	Tier 2	Tier 3
On-Water Recovery Cpcty (bbls/day)	6,667	11,112	17,779
Shallow Water Resp Cpblty (bbls/day)	1,333	2,222	3,556
Storage Capacity (bbls/day)	13,334	22,224	35,558
On-Water Response Caps (bbls/day)	12,500	25,000	50,000
Additional Response Req'd (bbls/day)	0	0	0
Response Time (hrs)	12	36	60

APPENDIX C

EMERGENCY PRE-PLANNING

- C.1 [Release Detection](#)
- C.2 [Leak Detection Systems](#)
- C.3 [Discharge Prevention Systems](#)

EMERGENCY PRE-PLANNING

Leak detection and discharge prevention is accomplished through safe operating procedures and maintenance procedures outlined in the Company Operations and Maintenance (O&M) Manual. The Company Operations and Maintenance Manual is designed to meet the requirements found in Title 49, US Code of Federal Regulations, Part 195, Transportation of Hazardous Liquids by Pipeline.

C.1 RELEASE DETECTION

Spill prevention is the central focus of this Emergency Preparedness program. Kinder Morgan believes that the best method of mitigating any oil spill is by taking every reasonable precaution to prevent the spill from ever occurring. In addition to the potential emergency events outlined in this Plan, Kinder Morgan has identified several "abnormal operations" and "emergency incidents" that could be expected on the pipeline system. Kinder Morgan has defined the events and established procedures to identify, eliminate or mitigate a substantial threat of worst case discharge due to these events. In compliance with 49 CFR 195.402(d), these procedures are defined in Kinder Morgan procedure L-O&M 1101 and 1102. The following is a brief overview of some of the activities Kinder Morgan engages in as part of its spill prevention strategy.

Regulatory Compliance

It is Kinder Morgan's goal to conduct all its pipeline operations, including those preventative measures specifically listed below, in accordance with DOT Part 195, ANSI 31.4, and all other applicable and appropriate regulations which address spill prevention for onshore liquid petroleum pipelines.

C.2 LEAK DETECTION SYSTEMS

Pressure Monitoring System

The pressure in the various line sections of the system is measured in pounds per square inch (psi) while product is being shipped. Pressure is measured at each pump station and terminal along the line. Pressure readings for are displayed on a computer screen at the manned operations locations. With this system, operations personnel can determine between which installations a spill may have occurred. This system is monitored by at least one operations person at all times. This person is capable of immediately shutting down operations if a potential problem is detected. Kinder Morgan trains its operations personnel to "over-react rather than under-react" when deciding whether a shutdown is appropriate in a given situation.

Barrels In/Barrels Out Monitoring System

Operations personnel also monitor the number of barrels of product entering a line from a source point or breakout tank and the number of barrels being drawn off the line into breakout tankage or a delivery terminal. By reconciling the two amounts, the operators can determine whether a potential spill has occurred. This system functions as a backup to the pressure monitoring system.

Right Of Way Patrol

Kinder Morgan regularly patrols the KMCC system using the following methods:

- Weekly aerial patrol of the entire system.
- Foot patrol of heavily-populated areas by line maintenance personnel.
- Prompt response to activity reports received through the various state utility "one-call" systems. Kinder Morgan is a member and supporter of one-call efforts in all states along its system.
- Inspections of major river crossings.

C.3 DISCHARGE PREVENTION SYSTEMS

Cathodic Protection

KMCC has an actively maintained cathodic protection system installed on its entire system designed to prevent corrosion of the system.

"Smart-Pig" Surveys

Kinder Morgan will conduct "smart pig" surveys of the KMCC system in accordance with the Kinder Morgan's Integrity Management Plan. A "smart-pig" is an electronic device which provides data on the wall thickness integrity of the pipe. This data can be used to detect possible anomalies in the system. Kinder Morgan conducts methodical pipeline repair programs based on this data to improve its system integrity.

Construction/Repair Inspection

Kinder Morgan carefully inspects system construction and repair work to ensure the proper installation and operation of system components.

Scheduled Maintenance Program

In accordance with 49CFR Part 195, Kinder Morgan has an extensive scheduled preventative maintenance program.

Right Of Way Maintenance

Kinder Morgan regularly mows, trims and maintains its system right of way to ensure the effectiveness of aerial patrols. Kinder Morgan regularly inspects the KMCC system block valves. In addition to meeting DOT pipeline marker regulations, it is Kinder Morgan's goal to provide "line-of-sight" pipeline markers (the ability to stand at any marker and see the next pipeline marker in either direction along the right of way) along its entire system.

APPENDIX D

TRAINING AND DRILLS

D.1 [Response Team Training](#)

[Oil Spill Response Plan Review](#)

[Hazardous Waste Operations and Emergency Response \(29 CFR 1910.120\)](#)

[Incident Command System](#)

[Training Records Maintenance](#)

[Contractor Training](#)

[Training Qualifications](#)

D.2 [Response Team Exercises](#)

[Quarterly QI Notification Exercise](#)

[Annual Equipment Deployment Exercise](#)

[Annual Response Team Tabletop Exercise](#)

[Government-Initiated Unannounced Exercise](#)

[Area Exercises](#)

[Exercise Documentation](#)

D.3 [Purpose of Review and Evaluation](#)

[Outline of Review](#)

[Detection](#)

[Notification](#)

[Assessment/Evaluation](#)

[Mobilization](#)

[Response - Strategy](#)

[Response - Resources Used](#)

[Response - Effectiveness](#)

[Command Structure](#)

[Measurement](#)

[Government Relations](#)

[Public Relations](#)

D.1 RESPONSE TEAM TRAINING

Training sessions will be conducted as needed for all personnel involved in the Plan, to review the manual and the latest revisions and update spill cleanup procedures. Training programs should also be responsive to changes brought on by new employees, transfers, or promotions which involve spill response duties, and acquisition or introduction of new response equipment. Training will be conducted annually at a minimum, and should be repeated or upgraded when employee performance observed during drills or actual spill response reveals a need for improvement by the QI or Operations. Frequency of training sessions will be conducted on an as needed basis. Additionally, a review of applicable regulations and other governmental requirements (HAZWOPER, USCG Captain of Ports Directives, PHMSA, and U.S. EPA guidelines) will be discussed.

Through the various training methods described below the Company's training program is intended to ensure the following results:

That all personnel know:

- Their responsibilities under the Plan.
- The name, address and procedures for contacting the Control Center on a 24-hour basis.
- The name of and procedures for contacting the Qualified Individual on a 24-hour basis.

That all reporting personnel know:

- The Pipelines and Response Zone details for the affected area (Response Zones Annexes).
- The telephone number of the Federal, State and local agencies and other required notifications (Section 2.0).
- The notification process. (Section 2.0).

That all response personnel know:

- The characteristics and hazards of the oil discharged (Section 3.0 and Appendix H - MSDS).
- The conditions that is likely to worsen emergencies, including the consequences of pipeline malfunctions, and the appropriate corrective actions.
- The steps necessary to control any accidental discharge of oil and to minimize the potential for fire, explosion, toxicity or environmental damage (Section 3.0).

Oil Spill Response Plan Review

All Response Team Members should review their Oil Spill Response Plan whenever their job position or responsibilities change under the Plan. A copy of this Plan will be available at all times to Team Members.

HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE (29 CFR 1910.120)

Federal and State regulations require that Response Team Members maintain up-to-date Hazardous Waste Operations and Emergency Response training necessary to function in their assigned positions. At a minimum, team members will receive "First Responder Awareness Level" training. All personnel responding to an incident must satisfy the applicable Hazardous Waste Operations and Emergency Response training requirements of 29 CFR 1910.120.

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE TRAINING REQUIREMENTS		
Responder Classification	Required Training Hours	Refresher
29CFR 1910.120(q) Emergency Response		
First Responder - Awareness Level	2-4 hrs demonstration of competency	same
First Responder - Operations Level	8 hrs	8 hrs
Hazardous Materials Technician	24 hrs plus competency	8 hrs
Hazardous Materials Specialist	24 hrs plus competency in specialized areas	8 hrs
Incident Commander	24 hrs plus competency	8 hrs
29CFR 1910.120(e) Clean Up Sites		
General Site Workers	40 hrs / 3 days on the job training	8 hrs
Occasional Workers (Limited Tasks)	24 hrs / 1 day on the job training	8 hrs
General Site Workers (Low Hazard)	24 hrs / 1 day on the job training	8 hrs
Supervisors	8 hrs supervisor training	8 hrs
* Previous work experience and/or training certified as equivalent by employer.		

Incident Command System

Response Team Members will receive Incident Command System training and may also receive supplemental training in other related general topics.

Training Records Maintenance

Emergency response training records are maintained at the Company's office. Training records for response personnel will be maintained for as long as personnel have duties in this Emergency Response Plan.

Contractor Training

The Company also recognizes that contract personnel must also have sufficient training to respond emergency response situations. The Company communicates this training need to its key contractors during contract negotiations and often specifically spells out this requirement in its contracts. The Company uses well-known spill response contractors whose reputation and experience levels help ensure personnel who respond will be trained to appropriate levels.

Training Qualifications

As no formalized method of certifying training instructors has been provided by the Occupational Safety and Health Administration, the Company ensures the competency of its instructors and training organizations by selecting trainers and/or organizations with professional reputations and extensive hands-on and classroom experience in their subject matter. The Company personnel with responsibility to coordinate the training program also conduct periodic informal audits of training courses selected for the Company training program to ensure their suitability for the program.

D.2 RESPONSE TEAM EXERCISES

Spill Management Team members, government agencies, contractors, and other resources must participate in response exercises required by Federal, State, or local regulations and as detailed in the "National Preparedness for Response Exercise Program (PREP) Guidelines." The Company will conduct announced drills to maintain compliance, and each plan-holder must participate in at least one exercise annually. The following table lists the triennial exercise cycle for facilities (see National Preparedness for Response Exercise Program Guidelines for full details).

TRIENNIAL CYCLE		
Total Number	Frequency	Exercise Type/Description
12	Quarterly	Qualified Individual Notification Exercise
3	Annually	Equipment Deployment Exercise (<i>Facility-owned equipment</i>)
3	Annual	Response Team Tabletop Exercise
3	Annual	Equipment Deployment Exercise (<i>facilities with Oil Spill Removal Organization-owned equipment</i>)
3	3 per Triennial Cycle	Unannounced Exercise (<i>not a separate exercise</i>) Actual response can be considered as an unannounced exercise. Credit can also be given for unannounced equipment deployment and Response Team tabletop exercises.
NOTES: 1) All Emergency Response Plan components must be exercised at least once in the Cycle. 2) Triennial cycle is completed for each response zone.		

Quarterly QI Notification Exercise

- **Scope:** Exercise communication between Pipeline personnel and the Qualified Individual(s) and/or designated alternate(s). At least once each year, one of the notification exercises should be conducted during non-business hours.
- **Objective:** Contact must be made with a Qualified Individual or designated alternate, as identified in the Plan.
- **General:** All personnel receiving notification shall respond to the notification and verify their receipt of the notification. Personnel who do not respond should be contacted to determine whether or not they received the notification.

Annual Equipment Deployment Exercise (for operator and/or Oil Spill Removal Organization equipment)

- **Scope:** Demonstrate ability to deploy spill response equipment identified in the Oil Spill Response Plan.

May consist entirely of operator or OSRO owned equipment, or a combination of OSRO and operator equipment.

The number of equipment deployment exercises conducted should be such that equipment and personnel assigned to each Response Zone are exercised at least once a year and semi-annually for each terminal with response equipment. If the same personnel and equipment respond to multiple zones, they need only exercise once per year. If different personnel and equipment respond to various Response Zones, each must participate in an annual equipment deployment exercise.

- **Objective:** Demonstrate personnel's ability to deploy and operate response equipment. Ensure that the response equipment is in proper working order.
- **General:** The Facility may take credit for actual equipment deployment to a spill, or for training sessions, as long as the activities are properly documented.

Annual Response Team Tabletop Exercise

- **Scope:** Exercise the response team's organization, communication, and decision-making in managing a spill response. Each team identified within the Plan must conduct an annual Response Team Tabletop Exercise.
- **Objective:** Exercise the response team in a review of the following:
 - Knowledge of the Plan.
 - Proper notifications.
 - Communications system.
 - Ability to access an OSRO.
 - Coordination of internal spill response personnel.
 - Review of the transition from an initial team to a regional team.
 - Ability to effectively coordinate response activity with the National Response System (NRS) Infrastructure.
 - Ability to access information in the Area Contingency Plan.
- **General:** A minimum of one Response Team Tabletop Exercise in a triennial cycle will involve a Worst Case Discharge scenario.

Government-Initiated Unannounced Exercise

- **Scope:** Demonstrate ability to respond to a Worst Case Discharge spill event.
- **Objectives:** Designated Oil Spill Response Team Members should demonstrate adequate knowledge of their Emergency Response Plan and the ability to organize, communicate, coordinate, and respond in accordance with that Plan.

- **General:** Maximum of 20 unannounced Pipeline and Hazardous Materials Safety Administration exercises conducted annually for the pipeline industry as a whole. A single owner or operator will not be required to participate in a PHMSA-initiated unannounced exercise if they have already participated in one within the previous 36 months.

Area Exercises

- **Objective:** The purpose of the area exercise is to exercise the entire response community in a particular area. An area is defined as that geographic area for which a separate and distinct Area Contingency Plan has been prepared, as described in Oil Pollution Act 90. The response community includes the Federal, State, and local government and industry. The area exercises are designed to exercise the government and industry interface for spill response.
- **General:** The goal is to ensure that all areas of the country are exercised triennially. All of the area exercises will be developed by an exercise design team. The exercise design team is comprised of representatives from the Federal, State, and local government and industry. A lead plan holder would lead each area exercise. The lead plan holder is the organization (government or industry) that holds the primary plan that is exercised in the area exercise. The lead plan holder would have the final word on designing the scope and scenario of the exercise.

Exercise Documentation

- All exercises should be documented and maintained at the Company office; documentation should specify:
 - The type of exercise;
 - Date and time of the exercise;
 - A description of the exercise;
 - The objectives met in the exercise;
 - The components of the response plan exercised; and
 - Lessons learned.
- Exercise documentation should be kept on file for the required length of time depending on the regulating agency (three (3) years for the U.S. Coast Guard and five (5) years for the Pipeline and Hazardous Materials Safety Administration and the U.S. Environmental Protection Agency).

D.3 PURPOSE OF REVIEW AND EVALUATION

This Section provides procedures and information useful to responders for post incident/exercise review and evaluation. Post incident/exercise reviews should be conducted in a timely manner following an incident/exercise. The Plan should be evaluated to determine its usefulness during the incident/exercise and appropriate revisions should be made. All incident/exercise documentation should be included in the Plan evaluation process.

Outline of Review

Given below are items a team composed of outside people knowledgeable in spill response and key members of the response teams should examine. These questions are intended as guidelines only; many other questions are likely to be appropriate at each stage of a critique.

Detection

- Was the spill detected promptly?
- How was it detected? By whom?
- Could it have been detected earlier? How?
- Are any instruments or procedures available to consider which might aid in spill detection?

Notification

- Were proper procedures followed in notifying government agencies? Were notifications prompt?
- Was management notified promptly/response appropriate?
- Was the Pipeline owner/operator notified promptly? If so, why, how, and who? If not, why not?

Assessment/Evaluation

- Was the magnitude of the problem assessed correctly at the start?
- What means were used for this assessment?
- Are any guides or aids needed to assist spill evaluation?
- What sources of information were available on winds and on water currents?
- Is our information adequate?
- Was this information useful (and used) for spill trajectory forecasts? Were such forecasts realistic?
- Do we have adequate information on product properties?
- Do we need additional information on changes of product properties with time, i.e., as a result of weathering and other processes?

Mobilization

- What steps were taken to mobilize spill countermeasures?
- What resources were used?
- Was mobilization prompt?
- Could it have been speeded up or should it have been?
- What about mobilization of manpower resources?
- Was the local spill cooperative used appropriately?
- How could this be improved?
- Was it appropriate to mobilize the Pipeline owner/operator resources and was this promptly initiated?
- What other resources are available and have they been identified and used adequately?

Response - Strategy

- Is there an adequate Spill Response Plan for the location?
- Is it flexible enough to cope with unexpected spill events?
- Does the Plan include clear understanding of local environmental sensitivities?
- What was the initial strategy for response to this spill?
- Is this strategy defined in the Spill Plan?
- How did the strategy evolve and change during this spill and how were these changes implemented?
- What caused such changes?
- Are there improvements needed? More training?

Response - Resources Used

- What resources were mobilized?
- How were they mobilized?
- How did resource utilization change with time? Why?
- Were resources used effectively?
 - Contractors
 - Government agencies
 - Company resources
 - Cooperatives
 - Volunteers
 - Consultants
 - Other (e.g., bird rescue centers)
- What changes would have been useful?
- Do we have adequate knowledge of resource availability?
- Do we have adequate knowledge of waste disposal capabilities?

Response - Effectiveness

- Was containment effective and prompt?
- How could it have been improved?
- Should the location or the local cooperative have additional resources for containment?
- Was recovery effective and prompt?
- How could it have been improved?
- Should the location or the local cooperative have additional resources for recovery of spilled product?
- Was contaminated equipment disposed promptly and safely?

- Was there adequate in-house product separation, recovery, and disposal?
- How could it have been improved?
- Was there adequate outside disposal resources available?

Command Structure

- Who was initially in charge of spill response?
- What sort of organization was initially set up?
- How did this change with time? Why?
- What changes would have been useful?
- Was there adequate surveillance?
- Should there be any changes?
- Were communications adequate?
- What improvements are needed? Hardware, procedures, etc.
- Was support from financial services adequate? Prompt?
- Should there be any changes?
- Is more planning needed?
- Should financial procedures be developed to handle such incidents?

Measurement

- Was there adequate measurement or estimation of the volume of product spilled?
- Was there adequate measurement or estimation of the volume of product recovered?
- Was there adequate measurement or estimation of the volume of product disposed?
- Should better measurement procedures be developed for either phase of operations?
- If so, what would be appropriate and acceptable?

Government Relations

- What are the roles and effects of the various government agencies which were involved?
- Was there a single focal point among the government agencies for contact?
- Should there have been better focus of communications to the agencies?
- Were government agencies adequately informed at all stages?
- Were too many agencies involved?
- Are any changes needed in procedures to manage government relations?
- Examples of affected U.S. agencies (there may be others):
 - U.S. Coast Guard
 - Environmental Protection Agency
 - National Oceanic and Atmospheric Administration
 - Dept of Fish and Wildlife
 - State Parks
 - Harbors and Marinas
 - States
 - Cities
 - Counties

- Was there adequate agreement with the government agencies on disposal methods?
- Was there adequate agreement with the government agencies on criteria for cleanup?
- How was this agreement developed?
- Were we too agreeable with the agencies in accepting their requests for specific action items (e.g., degree of cleanup)?
- Should there be advance planning of criteria for cleanup, aimed at specific local environmentally sensitive areas? (Such criteria should probably also be designed for different types of product.)

Public Relations

- How were relations with the media handled?
- What problems were encountered?
- Are improvements needed?
- How could public outcry have been reduced? Was it serious?
- Would it be useful to undertake a public information effort to "educate" reporters about product and effects to it if spilled?
- These areas should be investigated shortly after the incident to assure that actions taken are fresh in peoples' minds.

APPENDIX E

DISPOSAL PLAN

E.1 [Overview](#)

E. 2 [Waste Classification](#)

E. 3 [Waste Handling](#)

E. 4 [Waste Storage](#)

E. 5 [Waste Disposal](#)

Figure E. 1 [Temporary Storage Methods](#)

Figure E. 2 [Oily Waste Separation and Disposal Methods](#)

Figure E. 3 [Comparative Evaluation of Oil Spill Transfer Systems](#)

E.1 OVERVIEW

A major oil spill response would generate significant quantities of waste materials ranging from oily debris and sorbent materials to sanitation water and used batteries. All these wastes need to be classified and separated (i.e., oily, liquid, etc.), transported from the site, and treated and/or disposed of at approved disposal sites. Each of these activities demands that certain health and safety precautions be taken, which are strictly controlled by federal and state laws and regulations. This section provides an overview of the applicable state regulations governing waste disposal, and a discussion of various waste classification, handling, transfer, storage, and disposal techniques. It is the responsibility of the Company's Disposal Specialist to manage waste disposal needs during an oil spill cleanup.

E.2 WASTE CLASSIFICATION

Oily - Liquid Wastes

Oily liquid wastes (i.e., oily water and emulsions) that would be handled, stored, and disposed of during response operations are very similar to those handled during routine storage and transfer operations. The largest volume of oily liquid wastes would be produced by recovery operations (e.g., through the use of vacuum devices or skimmers). In addition, oily water and emulsions would be generated by vehicle operations (e.g., spent motor oils, lubricants, etc.), and equipment cleaning operations.

Non-Oily - Liquid Wastes

Response operations would also produce considerable quantities of non-oily liquid wastes. Water and other non-oily liquid wastes would be generated by the storage area and stormwater collection systems, vessel and equipment cleaning (i.e., water contaminated with cleaning agents), and office and field operations (i.e., sewage, construction activities).

Oily - Solid/Semi-Solid Wastes

Oily solid/semi-solid wastes that would be generated by containment and recovery operations include damaged or worn-out booms, disposable/soiled equipment, used sorbent materials, saturated soils, contaminated beach sediments, driftwood, and other debris.

Non-Oily - Solid/Semi-Solid Wastes

Non-oily solid/semi-solid wastes would be generated by emergency construction operations (e.g., scrap, wood, pipe, and wiring) and office and field operations (i.e., refuse). Vessel, vehicle, and aircraft operations also produce solid wastes.

E.3 WASTE HANDLING

A primary concern in the handling of recovered oil and oily debris is contaminating unaffected areas or recontaminating already cleaned areas. Oily wastes generated during the response operations would need to be separated by type and transferred to temporary storage areas and/or transported to incineration or disposal sites. Proper handling of oil and oily wastes is imperative to ensure personnel health and safety.

Safety Considerations

Care should be taken to avoid or minimize direct contact with oily wastes. All personnel handling or coming into contact with oily wastes will wear protective clothing. A barrier cream can be applied prior to putting on gloves to further reduce the possibility of oily waste absorption. Safety goggles are to be worn by personnel involved in waste handling activities where splashing might occur. Any portion of the skin exposed to oily waste should be washed with soap and water as soon as possible. Decontamination zones will be set up during response operations to ensure personnel are treated for oil exposure.

Waste Transfer

During response operations, it may be necessary to transfer recovered oil and oily debris from one point to another several times before the oil and oily debris are ultimately recycled, incinerated or disposed of at an appropriate disposal site. Depending on the location of response operations, any or all of the following transfer operations may occur:

- From portable or vessel-mounted skimmers into flexible bladder tanks, storage tanks of the skimming vessel itself, or a barge.
- Directly into the storage tank of a vacuum device.
- From a skimming vessel or flexible bladder to a barge.
- From a vacuum device storage tank to a barge.
- From a barge to a tank truck.
- From a tank truck to a processing system (e.g., oil/water separator).
- From a processing system to a recovery system and/or incinerator.
- Directly into impermeable bags that, in turn, are placed in impermeable containers.
- From containers to trucks.

There are four general classes of transfer systems that may be employed to affect oily waste transfer operations:

- **Pumps:** Rotary pumps, such as centrifugal pumps, may be used when transferring large volumes of oil, but they may not be appropriate for pumping mixtures of oil and water. The extreme shearing action of centrifugal pumps tends to emulsify oil and water, thereby increasing the viscosity of the mixture and causing low, inefficient transfer rates.

The resultant emulsion would also be more difficult to separate into oil and water fractions. Lobe or "positive displacement" pumps work well on heavy, viscous oils, and do not emulsify the oil/water mixture. Double-acting piston and double acting diaphragm pumps are reciprocating pumps that may also be used to pump oily wastes.

- **Vacuum Systems:** A vacuum truck may be used to transfer viscous oils but they usually pick up a very high water/oil ratio.
- **Belt/Screw Conveyors:** Conveyors may be used to transfer oily wastes containing a large amount of debris. These systems can transfer weathered debris laden oil either horizontally or vertically for short distances (i.e., 10 feet) but are bulky and difficult to set up and operate.
- **Wheeled Vehicles:** Wheeled vehicles may be used to transfer liquid wastes or oily debris to storage or disposal sites. These vehicles have a limited transfer volume (i.e., 100 barrels) and require good site access.

Figure E-3 provides a comparative evaluation of 16 types of transfer systems that could be available for transfer operations.

E.4 WASTE STORAGE

Interim storage of recovered oil, oily and non-oily waste should be considered to be an available means of holding the wastes until a final management method is selected. In addition, the segregation of wastes according to type would facilitate the appropriate method of disposal. The storage method used would depend upon:

- The type and volume of material to be stored.
- The duration of storage.
- Access.

During an oil spill incident, the volume of oil that can be recovered and dealt with effectively depends upon the available storage capacity. Typical short-term storage options are summarized in Figure E-1. The majority of these options can be used either onshore or offshore. If storage containers such as bags or drums are used, the container must be clearly marked and/or color-coded to indicate the type of material/waste contained and/or the ultimate disposal option. Bladder or pillow tanks are acceptable, if the available space can support the weight of both the container and the product.

Fuel barges may be the best option for temporary storage of oil recovered in open waters. Depending on size, these vessels may be able to hold up to 6,000 barrels of oil and water. The barge deck can be used as a platform for operating oil spill clean-up equipment and storing containment booms.

Empty barges have drafts of between four and six feet which would increase when these barges are filled with oil or loaded with cargo. Consequently, they may not be able to enter shallow, nearshore waters.

It may be difficult to offload recovered oil stored inside barges. Due to natural forces which affect spilled oil, recovered oil may be very viscous or emulsified, rather than free-flowing. It may be necessary to use steam to heat viscous oil before pumping it from the barge.

Steel or rubber tanks can be used to store oil recovered near the shoreline. To facilitate offloading, demulsifiers may be used to break emulsions prior to placing the recovered substance into the barges or storage tanks.

Use of any site for storage is dependent on the approval of the local authorities. The following elements affect the choice of a potential storage site:

- Geology.
- Ground water.
- Soil type.
- Flooding.
- Surface water.
- Slope.
- Type of material.
- Capacity of site.
- Climatic factors.
- Land use.
- Toxic air emissions.
- Security of site.

- Access to site.
- Public accessibility.

Temporary storage sites should use the best achievable technology to protect the environment and human health. They should be set up to prevent leakage, contact, and subsequent absorption of oil by the soil. The sites should be bermed (1 to 1.5 meters high) and double lined with plastic or visqueen sheets 6-10 mils or greater in thickness, without joints, prior to receiving loose and bagged debris. The edges of the sheet should be weighted with stones or earth to prevent damage by wind, and the sheet should be placed on a sand layer or an underfelt thick enough to prevent piercing. A reinforced access area for vehicles at the edge of the site should be provided. In addition, the oily debris should be covered by secured visqueen or tarps and an adequate stormwater runoff collection system for the size and location of the site would be utilized. Additionally, the sites should be at least 3 meters above mean sea level.

Oily debris can be hauled to approved temporary storage sites in visqueen lined trucks or other vehicles. Burnable, non-burnable, treatable and re-usable materials can be placed in well defined separate areas at temporary storage sites.

When the last of the oily debris leaves a temporary storage site, the ground protection should be removed and disposed of with the rest of the oily debris. Any surrounding soil which has become contaminated with oil should also be removed for disposal or treatment. If the soils were removed for treatment, they may be replaced if testing proves acceptable levels have been achieved. Treatment and remediation is encouraged when feasible. The temporary storage should be returned to its original condition.

E.5 WASTE DISPOSAL

Techniques for Disposal of Recovered Oil

Recovery, reuse, and recycling are the best choices for remediation of a spill, thereby reducing the amount of oily debris to be bermed onsite or disposed of at a solid waste landfill. Treatment is the next best alternative, but incineration and burning for energy recovery have more options within the state. There are some limitations and considerations in incinerating for disposal. Environmental quality of incineration varies with the type and age of the pipeline. Therefore, when incineration becomes an option during an event, local air quality authorities would be contacted for advice about efficiency and emissions of facilities within their authority. Approval of the local air authorities is a requirement for any incineration option. Landfilling is the last option. Final disposal at a solid or dangerous waste landfill is the least environmentally sound method of dealing with a waste problem such as oily debris.

During an oil spill incident, the Company representative will consult with the federal and state On Scene Coordinators (OSCs) to identify the acceptable disposal methods and sites appropriately authorized to receive such wastes. The Company maintains a list of approved disposal sites that satisfy local, state, and federal regulations and company requirements. This identification of suitable waste treatment and disposal sites will be prepared by a Disposal Specialist of the Company's Response Team in the form of an Incident Disposal Plan which must then be authorized by the U.S. Coast Guard and/or the EPA. An Incident Disposal Plan should include predesignated interim storage sites, segregation strategies, methods of treatment and disposal for various types of debris, and the locations/contacts of all treatment and disposal site selections. Onsite treatment/disposal is preferred.

In order to obtain the best overall Incident Disposal Plan, a combination of methods should be used. There is no template or combination of methods that can be used in every spill situation. Each incident should be reviewed carefully to ensure an appropriate combination of disposal methods are employed.

The different types of wastes generated during response operations will require different disposal methods. To facilitate the disposal of wastes, they should be separated by type for temporary storage, transport and disposal. Figure E-2 lists some of the options that are available to segregate oily wastes. The table also depicts methods that can be employed to separate free and/or emulsified water from the oily liquid waste.

The following is a brief discussion of some disposal techniques available for recovered oil and oily debris.

Recycling

This technique entails removing water from the oil and blending the oil with uncontaminated oil. Recovered oil can be shipped to refineries provided that it is exempt from hazardous waste regulations. There it can be treated to remove water and debris, and then blended and sold as a commercial product.

The Company's Disposal Specialist is responsible for ensuring that all waste materials are disposed of at a Company internally approved disposal site.

Incineration

This technique entails the complete destruction of the recovered oil by high temperature incineration. There are licensed incineration facilities as well as portable incinerators that may be brought to a spill site. Incineration may require the approval of the local Air Pollution Control Authority. Factors to consider when selecting an appropriate site for onsite incineration include:

- Proximity to recovery locations.
- Access to recovery locations.
- Adequate fire control.
- Approval of the local air pollution control authorities.

In Situ Burning/Open Burning

Burning techniques entail igniting oil or oiled debris and allowing it to burn under ambient conditions. These disposal techniques are subject to restrictions and permit requirements established by federal, state and local laws. They cannot be used to burn PCBs, waste oil containing more than 1,000 parts per million of halogenated solvents, or other substances regulated by the EPA. Permission for in situ burning may be difficult to obtain when the burn takes place near populated areas.

As a general rule, in situ burning is appropriate only when atmospheric conditions will allow the smoke to rise several hundred feet and rapidly dissipate. Smoke from burning oil will normally rise until its temperature drops to equal the ambient temperature. Afterwards, it will travel in a horizontal direction under the influence of prevailing winds.

Landfill Disposal

This technique entails burying the recovered oil in an approved landfill in accordance with regulatory procedures. Landfill disposal of free liquids is prohibited by federal law in the United States.

With local health department approval, non-burnable debris which consists of oiled plastics, gravel and oiled seaweed, kelp, and other organic material may be transported to a licensed, lined, approved municipal or private landfill and disposed of in accordance with the landfill guidelines and regulations. Landfill designation should be planned only for those wastes that have been found to be unacceptable by each of the other disposal options (e.g., waste reduction, recycling, energy recovery). Wastes are to be disposed of only at Company-approved disposal facilities. The Company's Disposal Specialist is responsible for ensuring that all waste materials are disposed of at a Company internally approved disposal site. Disposal at a non-approved facility would require approval by the Company's Disposal Specialist prior to sending any waste to such a facility.

FIGURE E-1
TEMPORARY STORAGE METHODS

CONTAINER	ONSHORE	OFFSHORE	SOLIDS	LIQUIDS	NOTES
Barrels	x	x	x	x	May require handling devices. Covered and clearly marked.
Tank Trucks	x	x		x	Consider road access. Barge-mounted offshore.
Dump/Flat Bed Trucks-Roll-offs	x		x		May require impermeable liner and cover. Consider flammability of vapors at mufflers.
Barges		x	x	x	Liquids only in tanks. Consider venting of tanks.
Oil Storage Tanks	x	x		x	Consider problems of large volumes of water in oil.
Bladders	x	x		x	May require special hoses or pumps for oil transfer.
Frac Tanks	x			x	Consider road access.

FIGURE E-2

OILY WASTE SEPARATION AND DISPOSAL METHODS

TYPE OF MATERIAL	SEPARATION METHODS	DISPOSAL METHODS
LIQUIDS		
Non-emulsified oils	Gravity separation of free water	Incineration Use of recovered oil as refinery/production facility feedstock
Emulsified oils	Emulsion broken to release water by: <ul style="list-style-type: none"> • heat treatment • emulsion breaking chemicals • mixing with sand • centrifuge • filter/belt press 	Use of recovered oil as refinery/production facility feedstock
SOLIDS		
Oil mixed with sand and soil	Collection of liquid oil leaching from sand during temporary storage Extraction of oil from sand by washing with water or solvent Removal of solid oils by sieving	Incineration Use of recovered oil as refinery/production facility feedstock Direct disposal Stabilization with inorganic material Degradation through land farming or composting
Oil mixed with cobbles or pebbles	Screening Collection of liquid oil leaching from materials during temporary storage Extraction of oil from materials by washing with water or solvent	Incineration Direct Disposal Use of recovered oil as refinery/production facility feedstock
Oil mixed with wood and sorbents	Screening Collection of liquid oil leaching from debris during temporary storage Flushing of oil from debris with water	Incineration Direct disposal Degradation through land farming or composting for oil mixed with seaweed or natural sorbents

FIGURE E-3

COMPARATIVE EVALUATION OF OIL SPILL TRANSFER SYSTEMS

CHARACTERISTICS OF TRANSFER SYSTEM	CENTRIFUGAL PUMP	LOBE PUMP	GEAR PUMP	INTERMESHING SCREW	VALVE PUMP	FLEXIBLE IMPELLER	SCREW/AUGER PUMP	PROGRESSING CAVITY	PISTON PUMP	DIAPHRAGM PUMP	AIR CONVEYOR	VACUUM TRUCK	PORTABLE VACUUM PUMP	CONVEYOR BELT	SCREW CONVEYOR	WHEELED VEHICLES
High Viscosity Fluids	1	5	5	5	3	2	5	5	5	3	5	4	4	5	4	5
Low Viscosity Fluids	5	2	2	2	3	4	1	3	3	4	5	5	5	1	1	5
Transfer Rate	5	2	1	1	3	4	1	2	2	3	4	5	3	2	2	2
Debris Tolerance																
● Silt/Sand	5	3	1	1	1	4	5	5	3	4	5	5	5	5	5	5
● Gravel/Particulate	5	2	1	1	1	2	5	3	2	3	5	5	4	5	4	5
● Seaweed/Stringy Matter	2	3	4	3	2	2	4	4	3	3	4	4	3	5	4	5
Tendency to Emulsify Fluids	1	4	3	3	3	3	5	5	2	5	5	5	5	5	5	5
Ability to Run Dry	5	3	2	1	2	3	4	3	3	2	5	5	5	4	3	
Ability to Operate Continuously	5	3	2	2	2	3	3	3	4	4	3	3	3	3	2	4
Self Priming	1	3	2	2	2	5	1	5	4	4	5	5	5	5	5	
Suction/Head	2	3	2	2	3	4	1	5	5	2	5	4	3			
Back Pressure/Head	1	5	5	5	4	3	4	5	2	4	1	1	1	3	3	
Portability	5	3	3	2	4	4	3	2					2	1	1	
Ease of Repair	5	3	2	2	3	4	3	2	3	5	1	1	2	3	2	3
Cost	5	B	2	2	3	3	1	2	3	5	1	1	2	2	2	3
Comments	E,J	B	B	B,J		F	A	B	B,D	A,C,D	F,G,I	F,G,I	F,G			G,H,I

KEY TO RATING

5=Best; 1=Worst

KEY TO COMMENTS

- A. Normally require remote power source, thus are safe around flammable fluids.
 B. Should have a relief valve in the outlet line to prevent bursting hoses.
 C. Air powered units tend to freeze up in sub-freezing temperatures.
 D. Units with work ball valves are difficult to prime.
 E. Some remotely powered types are designed to fit in a tanker's butterworth hatch.
 F. Can also pump air at low pressure.
 G. Transfer is batch-wise rather than continuous.
 H. Waste must be in separate container for efficient transfer.
 I. Transportable with its own prime mover.
 J. High shear action tends to emulsify oil and water mixtures.

APPENDIX F

MISCELLANEOUS FORMS

Forms and Exercise Documentation File Maintenance Procedures

- Forms and exercise documentation records should be maintained in a separate file in the Facility's office filing system.
- These files must be available for presentation upon request by regulatory agency personnel.

Spill Management Team Tabletop Exercise

[Click to view the file - Spill Management Team Tabetop Exercise 3 5 2012 20 41 31.pdf](#)

Spill Management Team Tabletop Exercise

Internal Exercise Documentation

1. Date(s) performed: _____
2. Exercise or actual response? _____ Exercise _____ Actual Response
If an exercise, announced or unannounced? _____ Announced _____ Unannounced
3. Location of tabletop: _____
4. Time started: _____ Time completed: _____
5. Response plan scenario used (check one):
 Average most probable discharge
 Maximum most probable discharge
 Worst case discharge
Size of (simulated) spill _____
6. Describe how the following objectives were exercised:
 - a) Spill Management Team's knowledge of oil-spill response plan:

 - b) Proper notifications:

 - c) Communications system:

 - d) Spill Management Team's ability to access contracted oil spill removal organizations:

 - e) Spill Management Team's ability to coordinate spill response with On-Scene Coordinator, state, and applicable agencies:

Spill Management Team Tabletop Exercise

Internal Exercise Documentation (Cont'd)

- f) Spill Management Team's ability to access sensitive site and resource information in the Area Contingency Plan:

7. Identify which of the 15 core components of your response plan were exercised during this particular exercise.

Organization Design:

- _____ 1. Notification
- _____ 2. Staff Mobilization
- _____ 3. Ability to operate within management system

Operational Response:

- _____ 4. Discharge Control
- _____ 5. Assessment
- _____ 6. Containment
- _____ 7. Recovery
- _____ 8. Protection
- _____ 9. Disposal

Response Support:

- _____ 10. Communications
- _____ 11. Transportation
- _____ 12. Personnel Support
- _____ 13. Equipment Maintenance and Support
- _____ 14. Procurement
- _____ 15. Documentation

8. Attach description of lesson(s) learned and person(s) responsible for follow up of corrective measures.

Certifying Signature

Retain this form for five (5) years.

Railroad Commission of Texas Oil and Gas Division Crude Oil, Gas Well Liquids, or
Associated Products Loss Report Form H-8

[Click to view the file - Railroad Commission of Texas Oil and Gas Division Crude Oil, Gas
Well Liquids, or Associated Products Loss Report Form H-8_26_4_2012_9_40_23.pdf](#)

**RAILROAD COMMISSION OF TEXAS
OIL AND GAS DIVISION**

CRUDE OIL, GAS WELL LIQUIDS, OR ASSOCIATED PRODUCTS LOSS REPORT

1. Field Name (as per current proration schedule, including reservoir, if applicable)		2. RRC District	
3. Company		4. County	
		Check appropriate block(s): <input type="checkbox"/> Producer <input type="checkbox"/> Transporter <input type="checkbox"/> Other _____	
5. Lease Name(s) and RCC Lease Number(s) (if applicable)			
6. Location where Liquid Hydrocarbon (crude oil, gas well liquids, or associated products) Loss occurred (Section, Block, & Survey)			
7. Description of Facility from which Liquid Hydrocarbon Loss Occurred			
8. Name of Landowner where Liquid Hydrocarbon Loss Occurred		9. Type of Liquid Hydrocarbon Loss <input type="checkbox"/> Crude Oil <input type="checkbox"/> Gas Well Liquid <input type="checkbox"/> Other _____	
10. Date Liquid Hydrocarbon Loss Occurred		11. Date Liquid Hydrocarbon Loss Reported to RRC District Office by Telephone or Telegraph	
12. Total Barrels of Liquid Hydrocarbon Lost in Leak or Spill		13. Total Barrels of Liquid Hydrocarbon Recovered	14. Barrels of Liquid Hydrocarbon Unrecovered (Net Loss)
15. Did Liquid Hydrocarbon Loss Affect Inland or Coastal Water? (If yes, explain.)			
16. Cause of Liquid Hydrocarbon Loss (Explain.) (If additional space is required, attach page(s).)			
17. Remedial Measures Taken and How Successful (Explain.)			
18. Remarks			
I declare under penalties prescribed in Article 6036c, R. C. S., that I am authorized to make this report, that this report was prepared by me or under my supervision and direction, and that data and facts stated therein are true, correct, and complete, to the best of my knowledge.			
_____ Date		_____ Signature	
_____ Company		_____ Name of Person (type or Print)	
_____ Street Address or P.O. Box		_____ Title of Person	
_____ City, State		_____ Telephone	
_____ Zip Code		_____ Area Code	_____ Number

(COMPANY MUST COMPLY WITH THE INSTRUCTIONS ON THE REVERSE SIDE HEREOF.) (OVER)

Post Drill Review-Evaluation for the Facility Response Plan

[Click to view the file - Post Drill Review-Evaluation for the Facility Response Plan 26 4 2012 20 33 48.pdf](#)

POST DRILL REVIEW / EVALUATION FOR THE FACILITY RESPONSE PLAN

Date of Drill/Exercise: _____ Time: _____

Weather Conditions: _____

List Participants in the Drill/Exercise: _____

Location of Drill/Exercise: _____

Objective of the Drill/Exercise: _____

LIST HERE ALL DEFICIENCIES IDENTIFIED: _____

ACTION TAKEN TO CORRECT IDENTIFIED DEFICIENCIES: _____

DATE OF FOLLOW-UP FOR ACTIONS TAKEN: _____

COMMENTS: _____

REVIEWED BY:

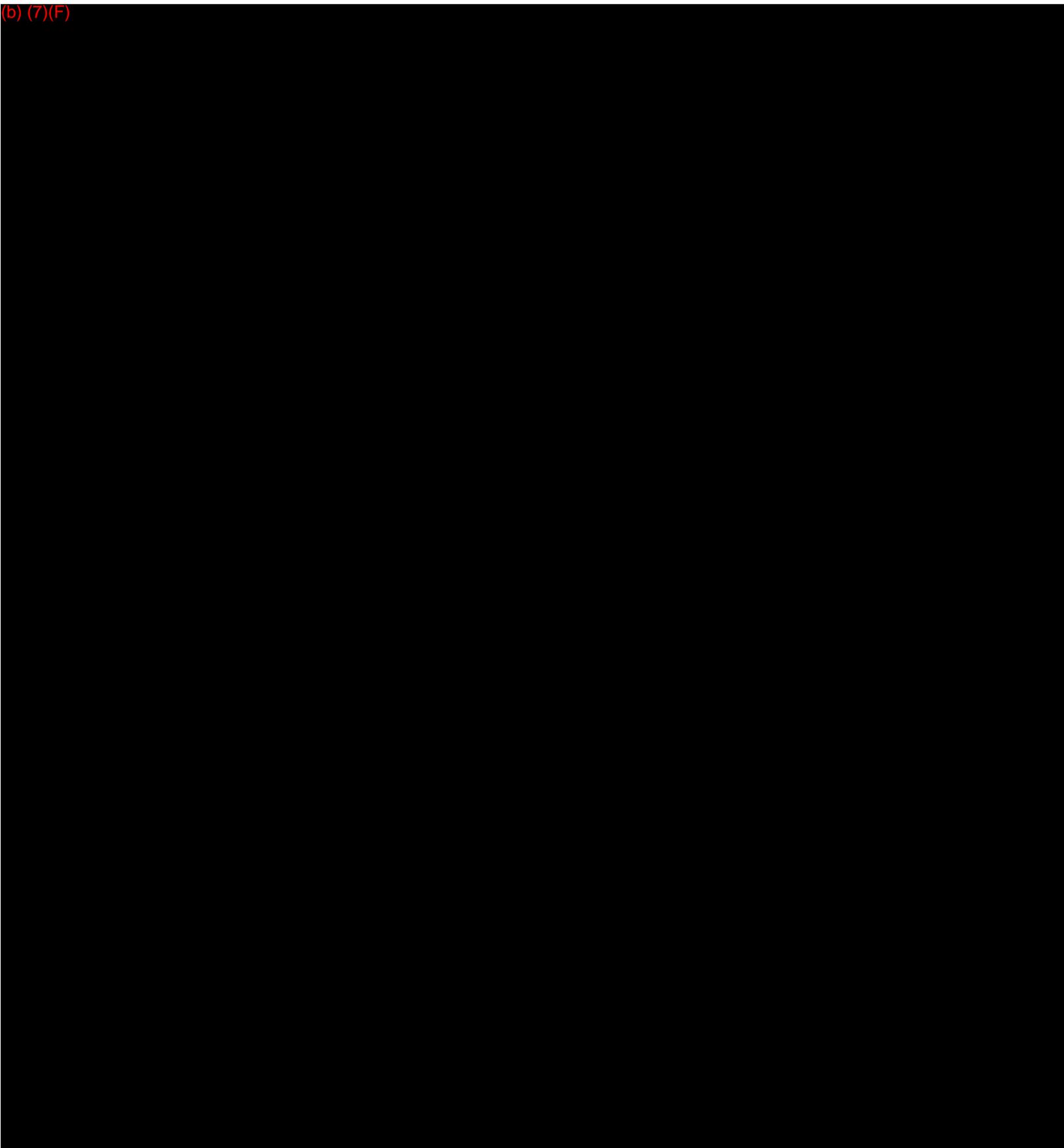
_____ TITLE: _____

DATE: _____

(b) (7)(F)



(b) (7)(F)



Kinder Morgan ICS Forms Workbook

[Click to view the file - Kinder Morgan ICS Forms Workbook 15 3 2012 7 4 49.pdf](#)

KINDER MORGAN ICS FORMS WORKBOOK

ICS Form #:	Form Title:	Prepared By:
Initial Incident Response and Assessment/Incident Brief		
ICS 201	Incident Briefing	Initial Incident Commander
	KM Site Health and Safety Plan	Safety Officer
ICS 214	Activity Log	All Sections and Units
ICS 211/211p	Incident Check-In List (Equip/Pers)	Planning Section - Resource Unit
Initial Unified Command Meeting/Objectives Meeting		
ICS 230	Daily Meeting Schedule	Planning Section
ICS 202*	Incident Objectives	Planning Section
Command and General Staff Meeting		
ICS 202*	Incident Objectives	Planning Section (From previous meeting)
ICS 203/207*	Organization Assignment List/Chart	Planning Section - Resource Unit
ICS 233	Open Actions Tracker	Planning Section & Operations Section (2 nd Operational Period)
Preparing for Tactics Meeting/Tactics Meeting		
ICS 202*	Incident Objectives	Planning Section (From previous meeting)
ICS 233	Open Actions Tracker	Planning Section & Operations Section (From previous meeting)
ICS 234	Work Analysis Matrix	Planning Section & Operations Section
ICS 215	Operational Planning Worksheet	Operations Section
ICS 215a	Hazard Risk Analysis Worksheet	Safety Officer
ICS 232	Resources at Risk Summary	Planning Section – Environmental Unit
ICS 232a	ACP Site Index	Planning Section – Environmental Unit
Preparing for Planning Meeting/Planning Meeting		
ICS 233	Open Actions Tracker	Planning Section & Operations Section (From previous meeting)
ICS 215	Operational Planning Worksheet	Operations Section

KINDER MORGAN ICS FORMS WORKBOOK

ICS Form #:	Form Title:	Prepared By:
IAP Preparation and Approval		
	Incident Action Plan	Planning Section
ICS 202*	Incident Objectives	Planning Section (From previous meeting)
ICS 204*	Assignment List	Planning Section - Resource Unit & Operations Section
ICS 203/207*	Organization Assignment List/Chart	Planning Section - Resource Unit
ICS 205*/205a*	Incident Radio Communications Plan/ Communications List	Logistics Section - Communications Unit
ICS 206*	Medical Plan	Logistics Section - Medical Unit (Reviewed by Safety Officer)
ICS 208*	Site Safety Plan or KM Site Health and Safety Plan	Safety Officer
As Needed Forms		
ICS 213RR	Resource Request Message	Section submitting request
ICS 209	Incident Status Summary	Planning Section - Situation Unit
ICS 216	Radio Requirements Worksheet	Logistics Section – Communications Unit
ICS 217	Radio Frequency Assignment Worksheet	Logistics Section – Communications Unit
ICS 218	Support Vehicle Inventory	Logistics Section – Ground Support Unit
ICS 220	Air Operations Summary	Operations Section - Air Operations Branch
ICS 221	Demobilization Check-Out	Planning Section - Demobilization Unit
ICS 231	Meeting Summary	Planning Section
ICS 235	Facility Needs Assessment	Logistics Section – Support Branch – Facilities Unit
	Executive Summary	Planning Section – Situation Unit
	General Plan	Planning Section – Situation Unit

* - A component of the Incident Action Plan

1. Incident Name	2. Prepared by: (name) Date: _____ Time: _____	INCIDENT BRIEFING ICS 201-CG
3. Map/Sketch (include sketch, showing the total area of operations, the incident site/area, overflight results, trajectories, impacted shorelines, or other graphics depicting situational and response status)		
4. Current Situation: _____ _____ _____ _____ _____ _____ _____ _____ _____ _____		

1. Incident Name	2. Prepared by: (name) Date: _____ Time: _____	INCIDENT BRIEFING ICS 201-CG
-------------------------	--	---------------------------------

5. Initial Response Objectives, Current Actions, Planned Actions	

Complete Boxes 1 - 6 First



EMERGENCY RESPONSE SITE SPECIFIC HEALTH & SAFETY PLAN

Date / Time: _____ / _____

<p>1. Incident Information:</p> <p>Incident Type: _____</p> <p><input type="checkbox"/> Fire / Explosion <input type="checkbox"/> Spill / Release <input type="checkbox"/> Rescue <input type="checkbox"/> Injury</p> <p>Date: _____ Location: _____ Time of Incident: _____ Incident Name: _____</p>	<p>2. Products / Chemical Involved:</p> <p><input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Jet Fuel <input type="checkbox"/> Methanol <input type="checkbox"/> DRA <input type="checkbox"/> Fuel Additive <input type="checkbox"/> Ethanol <input type="checkbox"/> Ethane <input type="checkbox"/> Butane <input type="checkbox"/> Natural Gas <input type="checkbox"/> Isobutane <input type="checkbox"/> MCC Lubricity <input type="checkbox"/> Crude Oil <input type="checkbox"/> Propane <input type="checkbox"/> Ethyl Mercaptan <input type="checkbox"/> Other _____ <i>(see Table 1 on back for chemical & physical properties)</i></p> <p>MSDS available and reviewed: <input type="checkbox"/> Yes</p>	<p>11. ICS Organization:</p>																				
<p>3. Primary Hazards: <input type="checkbox"/> Fire <input type="checkbox"/> Vapor <input type="checkbox"/> Respiratory <input type="checkbox"/> Skin</p> <p>4. Personal Protective Equipment: Cold Zone / Staging - <input type="checkbox"/> Hardhat <input type="checkbox"/> Safety Boots <input type="checkbox"/> Traffic Vest Warm Zone / Decon - Level <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D Hot Zone - Level <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <i>(see Table 2 on back for description of PPE by Level)</i></p>	<p>Incident Priority Checklist:</p> <p><input type="checkbox"/> 1. Evacuate self and others <input type="checkbox"/> 2. Secure area/restrict access <input type="checkbox"/> 3. Notification: Internal/External <input type="checkbox"/> 4. Eliminate ignition sources <input type="checkbox"/> 5. Initiate ICS</p> <p><input type="checkbox"/> 6. Conduct Site Assessment (H&S Plan) <input type="checkbox"/> 7. Meet with arriving authorities <input type="checkbox"/> 8. Mobilize response resources</p>	<p>Wind Direction (out of the _____)</p>																				
<p>5. Hot Zone Authorized Entrants: <input type="checkbox"/> Fire Dept. <input type="checkbox"/> KM <input type="checkbox"/> Agency Reps. <input type="checkbox"/> Contractors</p> <p>7. Secondary Hazards: <input type="checkbox"/> Fire <input type="checkbox"/> Heavy Equipment <input type="checkbox"/> Excavations <input type="checkbox"/> Noise <input type="checkbox"/> Confined Spaces <input type="checkbox"/> Heat Stress <input type="checkbox"/> Cold Stress <input type="checkbox"/> Rain/Lightning <input type="checkbox"/> General (slip, trip, fall, established smoking area) <input type="checkbox"/> Other: _____ <i>(see Table 3 on back for secondary hazard precautions)</i></p>	<p>6. Site Map:</p> <p><input type="checkbox"/> Weather Conditions: _____ <input type="checkbox"/> Wind Direction <input type="checkbox"/> Hazard Zones <input type="checkbox"/> Staging <input type="checkbox"/> Command Post <input type="checkbox"/> Decon <input type="checkbox"/> Cross streets <input type="checkbox"/> Sensitive receptors (drainage, roadways, environmental sensitivity)</p>	<p>12. Enforcement / Regulatory Agencies (On Site):</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Agency (Fed/State/Local)</th> <th>Name</th> <th>Contact Number</th> <th>Time of Arrival</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	Agency (Fed/State/Local)	Name	Contact Number	Time of Arrival																
Agency (Fed/State/Local)	Name	Contact Number	Time of Arrival																			
<p>8. Evacuation Plan: Evacuation signal : _____ Primary Evac. Area: _____ Secondary Evac. Area: _____</p> <p>9. Nearest Hospital: Notified: <input type="checkbox"/> Yes <input type="checkbox"/> No Address: _____ Phone #: _____ Directions: _____</p>	<p>13. Contractors (On Site): <input type="checkbox"/> Environ. _____ <input type="checkbox"/> Clean up _____ <input type="checkbox"/> Repair _____ <input type="checkbox"/> Consultant _____</p>	<p>14. Hot Zone Entry Objectives: Objectives: <i>Why are people entering the Hot Zone? What is their objective?</i> _____ _____</p>																				
<p>10. PROP 65 Notices: (California only) <input type="checkbox"/> Incident is within Terminal or Station; notice(s) are posted at facility entrance(s). <input type="checkbox"/> Incident of outside KM property; notice(s) are posted along incident site boundaries.</p>	<p>15. Decon Checklist:</p> <p><input type="checkbox"/> Establish and communicate location <input type="checkbox"/> Container of absorbent material provided <input type="checkbox"/> Plastic tarps and trash bags provided <input type="checkbox"/> Boot brush provided <input type="checkbox"/> Supervision of decon provided <input type="checkbox"/> Folding chairs provided <input type="checkbox"/> Entrant log maintained <input type="checkbox"/> Lighting provided (if needed)</p>	<p>16. Atmospheric Monitoring: Completed by - <input type="checkbox"/> KM <input type="checkbox"/> Fire Dept. <input type="checkbox"/> Contractor <input type="checkbox"/> Other: _____ Results: %LEL _____ PPM _____ Time: _____ Location: _____ Results: %LEL _____ PPM _____ Time: _____ Location: _____</p>																				
<p>17. Authorization Signatures:</p> <p>Incident Commander: _____ Safety Officer: _____</p>																						

INCIDENT COMMANDER PRIORITIES - SAFETY of KMEP PERSONNEL SURROUNDING COMMUNITY ENVIRONMENT

Table 1. Chemical & Physical Properties

Chemical Hazards	Flammability Range		Toxicity	Chemical / Physical Properties				NFPA 704 Health/Flammable/Reactive
	LEL	UEL	PEL ^(a) /TLV ^(b)	Flash Pt.	Vapor Pressure	Vapor Density	Specific Gravity	
<input type="checkbox"/> Gasoline	1.3%	7.6%	300 ppm ^(a)	-45°F	~300 mmHg	5	0.74	1 / 3 / 0
<input type="checkbox"/> Diesel	0.9%	7.0%	NA	~150°F	~1 mmHg	>5	0.86	1 / 2 / 0
<input type="checkbox"/> Jet Fuel	~0.8%	~6.0%	500 ppm ^(a)	~110°F	5	>5	0.81	1 / 2 / 0
<input type="checkbox"/> Ethanol	3.3%	19.0%	1,000 ppm ^(b)	48°F	44 mmHg	>1	0.79	0 / 3 / 0
<input type="checkbox"/> Fuel Additive*								
<input type="checkbox"/> Drag Reducing Agent (DRA)*								2 / 2 / 0
<input type="checkbox"/> MCC Lubricity	Not Available	Not Available		>140°F	1.37 mmHg	>1	.93 - .94	2 / 2 / 0
<input type="checkbox"/> Natural Gasoline	1.4%	7.6%	--	-50°F	12-26 psi	2.7	0.66-0.75	1 / 3 / 0
<input type="checkbox"/> Butane	1.6%	8.4%	800 ppm ^(a)	-101°F	43 psi	2.05	.58	1 / 4 / 0
<input type="checkbox"/> Ethane	2.9%	13.0%	not established	-275°F	800 psi	1.1	0.36	
<input type="checkbox"/> Isobutane	1.8%	8.4%	800 ppm ^(a)	-126°F	62 psi	2.0	0.563	1 / 4 / 0
<input type="checkbox"/> Propane	2.1%	9.5%	1000 ppm ^(a)	-156°F	288 psi	1.53	0.51	1 / 4 / 0
<input type="checkbox"/> Crude Oil								
<input type="checkbox"/> Methanol	6.0%	36%	200 ppm	52°F	96 mm IIG	1.1	.792	1 / 3 / 0
<input type="checkbox"/> Ethyl Mercaptan	2.8%	18%	10 ppm ^(a) / .5 ppm ^(b)	-55°F	16.2 psi	2.1	.845	2 / 4 / 0
<input type="checkbox"/> Other*								

* Describe

1 atm = 760 mmHg = 14.7 psi

Table 2. PPE Levels

LEVEL A	LEVEL B	LEVEL C	LEVEL D
<u>Respiratory Protection</u> <input type="checkbox"/> SCBA or Air Line <input type="checkbox"/> Positive pressure full face piece supplied air w/ escape SCBA <u>Required Equipment</u> <input type="checkbox"/> Totally encapsulating, gas tight chemical resistant suit <input type="checkbox"/> Inner chemical resistant gloves <input type="checkbox"/> Chemical resistant safety boots <u>Optional Equipment</u> <input type="checkbox"/> Hearing protection <input type="checkbox"/> Hard Hat <input type="checkbox"/> Disposable glove & boot covers	<u>Respiratory Protection</u> <input type="checkbox"/> SCBA or Air Line <input type="checkbox"/> Positive pressure full face piece supplied air w/ escape SCBA <u>Required Equipment</u> <input type="checkbox"/> Non-encapsulating chemical resistant suit (Tyvek/Nomex) <input type="checkbox"/> Inner & outer chemical resistant gloves <input type="checkbox"/> Chemical resistant safety boots <input type="checkbox"/> Hard Hat <u>Optional Equipment</u> <input type="checkbox"/> Hearing protection <input type="checkbox"/> Coveralls <input type="checkbox"/> Disposable boot covers <input type="checkbox"/> Face shield/safety glasses	<u>Respiratory Protection</u> <input type="checkbox"/> Full / Half Face respirator w/ <input type="checkbox"/> cartridge (gas/vapor): _____ <input type="checkbox"/> filter (particulate): _____ <u>Required Equipment</u> <input type="checkbox"/> Non-encapsulating chemical resistant suit <input type="checkbox"/> Tyvek <input type="checkbox"/> Nomex <input type="checkbox"/> Inner & outer chemical resistant gloves <input type="checkbox"/> Chemical resistant safety boots <input type="checkbox"/> Hard Hat <u>Optional Equipment</u> <input type="checkbox"/> Hearing protection <input type="checkbox"/> Coveralls <input type="checkbox"/> Disposable boot covers <input type="checkbox"/> Face shield/safety glasses	<u>Respiratory Protection</u> <input type="checkbox"/> None <u>Required Equipment</u> <input type="checkbox"/> Coveralls <input type="checkbox"/> Safety Boots <input type="checkbox"/> Safety Glasses <input type="checkbox"/> Hard Hat <u>Optional Equipment</u> <input type="checkbox"/> Hearing protection <input type="checkbox"/> Gloves <input type="checkbox"/> Face shield/safety glasses

Table 3. Secondary Hazards

Hazards	Recommended Precaution(s)
<input type="checkbox"/> Fire (potential)	<ul style="list-style-type: none"> • Remain safe distance away • Eliminate ignition sources • Keep upwind of vapor/smoke • Provide vapor suppression (if safe) • Do not impede Fire Dept. efforts
<input type="checkbox"/> Heavy Equipment	<ul style="list-style-type: none"> • Qualified operators only • Hardhats and safety boots needed around heavy equip. • Minimum 10ft. clearance from power lines • Make "one call" if excavating • Proper machine guarding in place
<input type="checkbox"/> Excavations	<ul style="list-style-type: none"> • Trenches/excavations equal to or greater than 5ft. deep must meet OSHA requirements • No one allowed to enter excavation > 5ft. unless shored, sloped or protected • Excavations < 5ft. and judged by competent person as cave-in hazard must also follow OSHA requirements
<input type="checkbox"/> Noise	<ul style="list-style-type: none"> • Portable generators & heavy equip. can generate potentially high noise levels • Hearing protection available to workers • Hearing protection must be worn in area with noise levels above 85dBA.
<input type="checkbox"/> Confined Spaces	<ul style="list-style-type: none"> • Site Safety Officer will determine whether confined space will be entered • All confined space entries must meet OSHA requirements (permits, atmospheric monitoring, attendants, etc.)
<input type="checkbox"/> Heat Stress	<ul style="list-style-type: none"> • Potential hazard when temp >80°F • Workers should take more breaks and drink plenty of appropriate liquids • More PPE = higher risk • Be aware of heat cramps (stomach cramps), heat exhaustion (excessive sweating, flushed/clammy skin) – treat with rest and liquids. Heat stroke (dry, hot, pale skin; no sweating) can be deadly – get medical help immediately, reduce core body temp by applying cold water to body & fanning.
<input type="checkbox"/> Cold Stress	<ul style="list-style-type: none"> • Skin takes on gray-glossy look • Appendages become non-responsive • Blisters or sores may appear • Do not rub • Submerge affected areas in warm water or wrap in warm cloth.
<input type="checkbox"/> Rain / Lightning	<ul style="list-style-type: none"> • Stop excavation activities during excessive rainfall • Avoid shock hazards by stopping work during thunderstorm or lightening • Prevent & control erosion & transport of soils out of incident area.
<input type="checkbox"/> General	<ul style="list-style-type: none"> • Slip, trip & fall hazards • Keep work area clear of debris • Smoking not permitted in work areas • Use hand tools safely
<input type="checkbox"/> Other:	

UNIT LOG (ICS FORM 214-CG)

Purpose. The Unit Log records details of unit activity, including strike team activity or individual activity. These logs provide the basic reference from which to extract information for inclusion in any after-action report.

Preparation. A Unit Log is initiated and maintained by Command Staff members, Division/Group Supervisors, Air Operations Groups, Strike Team/Task Force Leaders, and Unit Leaders. Completed logs are submitted to supervisors who forward them to the Documentation Unit.

Distribution. The Documentation Unit maintains a file of all Unit Logs. All completed original forms MUST be given to the Documentation Unit.

<u>Item #</u>	<u>Item Title</u>	<u>Instructions</u>
1.	Incident Name	Enter the name assigned to the incident.
2.	Check-In Location	Enter the time interval for which the form applies. Record the start and end date and time.
3.	Unit Name/Designators	Enter the title of the organizational unit or resource designator (e.g., Facilities Unit, Safety Officer, Strike Team).
4.	Unit Leader	Enter the name and ICS Position of the individual in charge of the Unit.
5.	Personnel Assigned	List the name, position, and home base of each member assigned to the unit during the operational period.
6.	Activity Log	Enter the time and briefly describe each significant occurrence or event (e.g., task assignments, task completions, injuries, difficulties encountered, etc.)
7.	Prepared By	Enter name and title of the person completing the log. Provide log to immediate supervisor, at the end of each operational period.
	Date/Time	Enter date (month, day, year) and time prepared (24-hour clock).

CHECK-IN LIST			1. INCIDENT NAME:				2. CHECK-IN LOCATION:				3. DATE/TIME:	
CHECK-IN INFORMATION												
4. LIST PERSONNEL (OVERHEAD) BY AGENCY NAME – OR LIST EQUIPMENT BY THE FOLLOWING FORMAT: S=Supplies H=Helicopter O=Overhead VL=Vessels E=Equipment C=Crew A=Aircraft VH=Vehicle			5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
AGENCY	RESOURCE IDENTIFIER	KIND	ORDER/NUMBER	DATE/TIME CHECK-IN	LEADER'S NAME	TOTAL NO. PERSONNEL	INCIDENT CONTACT INFORMATION	INCIDENT LODGING INFO/ CONTACT INFO	HOME UNIT	METHOD OF TRAVEL	INCIDENT ASSIGNMENT	SENT TO RESTAT TIME/INT
15. ICS 211-CG PAGE ____ of ____			16. PREPARED BY (Name and Position) USE BACK FOR REMARKS OR COMMENTS									

CHECK-IN LIST Personnel (ICS FORM 211p-OS)

Special Note. This form is used for personnel check-in only.

Purpose. Personnel arriving at the incident can be checked in at various incident locations. Check-in consists of reporting specific information that is recorded on the form.

Preparation. The Check-In List is initiated at a number of incident locations including staging areas, base, camps, helibases, and ICP. Managers at these locations record the information and give it to the Resources Unit as soon as possible.

Distribution. Check-In Lists are provided to both the Resources Unit and the Finance/Administration Section. The Resources Unit maintains a master list of all equipment and personnel that have reported to the incident. All completed original forms MUST be given to the Documentation Unit.

Item #	Item Title	Instructions
1.	Incident Name	Enter the name assigned to the incident.
2.	Operational Period	Enter the time interval for which the form applies. Record the start and end date and time.
3.	Check-in Location	Check the box for the check-in location.
4.	Name	Enter the name of the person.
5.	Company/Agency	Enter the company or agency with which the individual is associated.
6.	ICS Section / Assignment / Quals.	Enter ICS Section and assignment, if known, and note any other ICS qualifications, if needed.
7.	Contact Information	Enter the contact information for the person.
8.	Initial Incident Check-in?	Check if this is the first time a person has checked in for this incident.
9.	Time In/Out	Enter the time the person checks in and/or out (24-hour clock).
10.	Prepared By Date/Time Prepared	Enter name and title of the person preparing the form. Enter date (month, day, year) and time prepared (24-hour clock).
11.	Date/Time Sent to Resources Unit	Enter date (month, day, year) and time (24-hour clock) the form is sent to the Resources Unit.

1. Incident Name		2. Operational Period (Date/Time) From: _____ To: _____		DAILY MEETING SCHEDULE ICS 230-CG	
3. Meeting Schedule (Commonly-held meetings are included)					
Date/ Time	Meeting Name	Purpose	Attendees	Location	
	Unified Command Objectives Meeting	Review/ identify objectives for the next operational period.	Unified Command members		
	Command & General Staff Meeting	IC/UC gives direction to Command & General staff including incident objectives and priorities	IC/UC, Command & General Staff		
	Tactics Meeting	Develop/Review primary and alternate Strategies to meet Incident Objectives for the next Operational Period.	PSC, OSC, LSC, RESL & SITL		
	Planning Meeting	Review status and finalize strategies and assignments to meet Incident Objectives for the next Operational Period.	Determined by the IC/UC		
	Operations Briefing	Present IAP and assignments to the Supervisors / Leaders for the next Operational Period.	IC/UC, Command & General Staff, Branch Directors, Div/Gru Sups., Task Force/Strike Team Leaders and Unit Leaders		
4. Prepared by: (Situation Unit Leader)			Date/Time		
DAILY MEETING SCHEDULE				ICS 230-CG (Rev.07/04)	

DAILY MEETING SCHEDULE (ICS 230-CG)

Purpose. The Daily Meeting Schedule records information about the daily scheduled meeting activities.

Preparation. This form is prepared by the Situation Unit Leader and coordinated through the Unified Command for each operational period or as needed. Commonly-held meetings are already included in the form. Additional meetings, as needed, can be entered onto the form in the spaces provided. Time and location for each meeting must be entered. If any of these standard meetings are not scheduled, they should be crossed out on the form.

Distribution. After coordination with the Unified Command, the Situation Unit Leader will duplicate the schedule and post a copy at the Situation Status Board and distribute to the Command Staff, Section Chiefs, and appropriate Unit Leaders. All completed original forms MUST be given to the Documentation Unit.

<u>Item #</u>	<u>Item Title</u>	<u>Instructions</u>
1.	Incident Name	Enter the name assigned to the incident.
2.	Operational Period	Enter the time interval for which the form applies.
3.	Meeting Schedule	For each scheduled meeting, enter the date/time, meeting name, purpose, attendees, and location. Note: Commonly-held meetings are included in the form. Additional meetings, as needed, can be entered onto the form in the spaces provided. Time and location for each meeting must be entered. If any of the standard meetings are not scheduled, they should be deleted from the form (normally the Situation Unit Leader).
4.	Prepared By	Enter name and title of the person preparing the form, normally the Situation Unit Leader.
	Date/Time	Enter date (month, day, year) and time prepared (24-hour clock).

INCIDENT OBJECTIVES (ICS 202-CG)

Purpose. The Incident Objectives form describes the basic incident strategy, control objectives, command emphasis/priorities, and safety considerations for use during the next operational period.

Preparation. The Incident Objectives form is completed by the Planning Section following each Command and General Staff Meeting conducted in preparing the Incident Action Plan.

Distribution. The Incident Objectives form will be reproduced with the IAP and given to all supervisory personnel at the Section, Branch, Division/Group, and Unit levels. All completed original forms MUST be given to the Documentation Unit.

<u>Item #</u>	<u>Item Title</u>	<u>Instructions</u>
1.	Incident Name	Enter the name assigned to the incident.
2.	Operational Period	Enter the time interval for which the form applies. Record the start and end date and time.
3.	Objective(s)	Enter clear, concise statements of the objectives for managing the response. These objectives are for the incident response for this operational period and for the duration of the incident. Include alternatives.
4.	Operational Period Command Emphasis	Enter clear, concise statements for safety message, priorities, and key command emphasis/decisions/directions. Enter information such as known safety hazards and specific precautions to be observed during this operational period. If available, a safety message should be referenced and attached. At the bottom of this box, enter the location where approved Site Safety Plan is available for review.
5.	Site Safety Plan Prepared By Date/Time	Note location of the approved Site Safety Plan. Enter the name of the Planning Section Chief completing the form. Enter date (month, day, year) and time prepared (24-hour clock).

NOTE: ICS 202-CG, Incident Objectives, serves as part of the Incident Action Plan (IAP)

1. Incident Name	2. Operational Period (Date/Time) From: _____ To: _____	ORGANIZATION ASSIGNMENT LIST ICS 203-CG																		
3. Incident Commander(s) and Staff Agency IC Deputy <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td style="width:30%;"></td><td style="width:35%;"></td><td style="width:35%;"></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> </table> Safety Officer: _____ Information Officer: _____ Liaison Officer: _____																			7. OPERATION SECTION Chief _____ Deputy _____ Deputy _____ Staging Area Manager _____ Staging Area Manager _____ Staging Area Manager _____ a. Branch – Division Groups Branch Director _____ Deputy _____ Division Group _____ Division Group _____ Division Group _____ Division/Group _____ Division/Group _____ b. Branch – Division/Groups Branch Director _____ Deputy _____ Division/Group _____ Division/Group _____ Division/Group _____ Division/Group _____ Division/Group _____ c. Branch – Division/Groups Branch Director _____ Deputy _____ Division/Group _____ Division/Group _____ Division/Group _____ Division/Group _____ Division/Group _____ d. Air Operations Branch Air Operations Br. Dir _____ Helicopter Coordinator _____	
4. Agency Representatives <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;">Agency</th> <th style="width:85%;">Name</th> </tr> </thead> <tbody> <tr><td> </td><td> </td></tr> </tbody> </table>	Agency	Name																		
Agency	Name																			
5. PLANNING/INTEL SECTION Chief _____ Deputy _____ Resources Unit _____ Situation Unit _____ Environmental Unit _____ Documentation Unit _____ Demobilization Unit _____ Technical Specialists _____ _____ _____ _____																				
6. LOGISTICS SECTION Chief _____ Deputy _____ a. Support Branch Director _____ Supply Unit _____ Facilities Unit _____ Vessel Support Unit _____ Ground Support Unit _____ b. Service Branch Director _____ Communications Unit _____ Medical Unit _____ Food Unit _____	8. FINANCE/ADMINISTRATION SECTION Chief _____ Deputy _____ Time Unit _____ Procurement Unit _____ Compensation/Claims Unit _____ Cost Unit _____																			
9. Prepared By: (Resources Unit)	Date/Time																			

ORGANIZATION ASSIGNMENT LIST (ICS 203-CG) Instructions for filling out the form

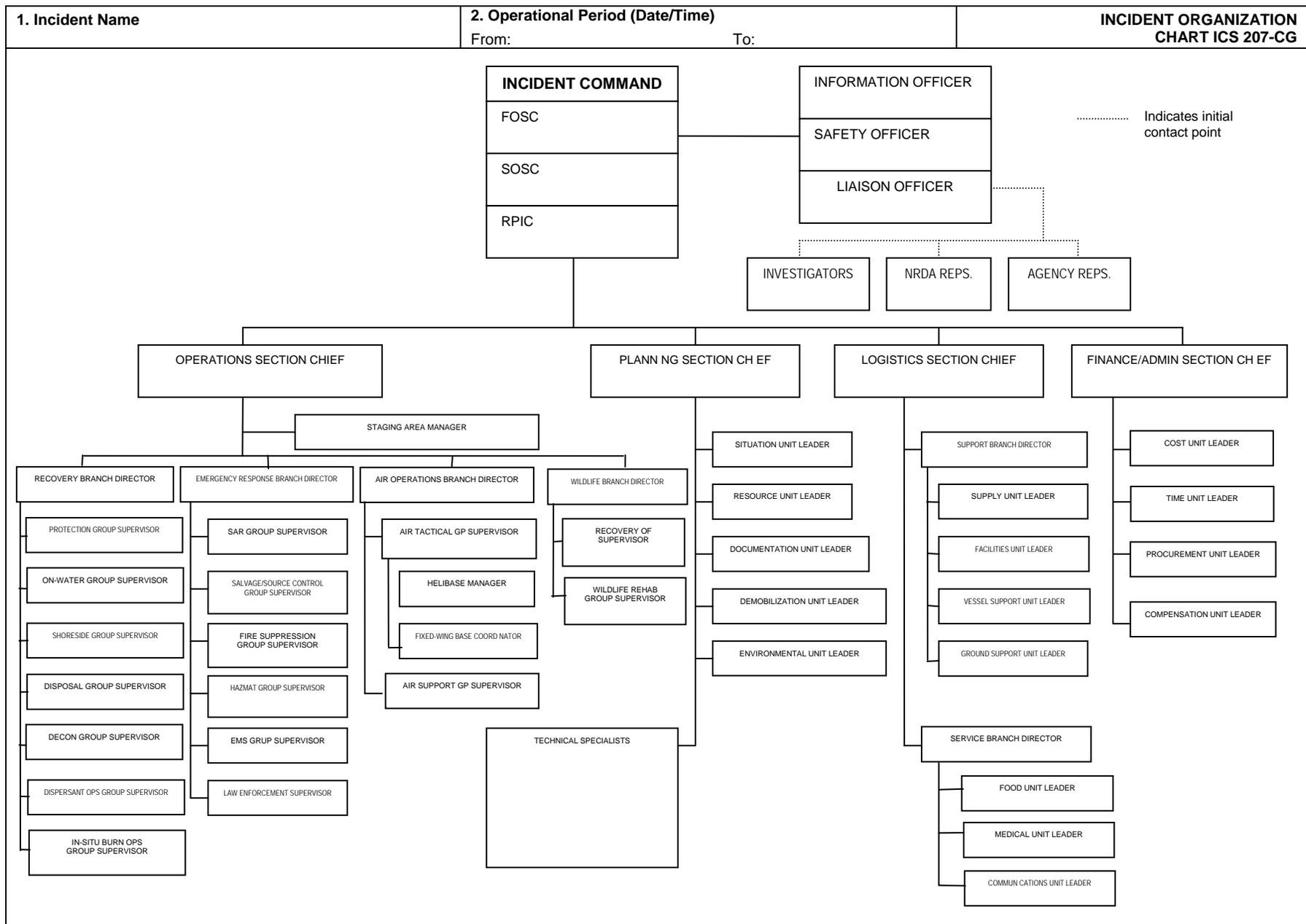
Purpose. The Organization Assignment List provides ICS personnel with information on the units that are currently activated and the names of personnel staffing each position/unit. It is used to complete the Incident Organization Chart (ICS form 207-CG) which is posted on the Incident Command Post display. An actual organization will be event-specific. **Not all positions need to be filled.** The size of the organization is dependent on the magnitude of the incident and can be expanded or contracted as necessary.

Preparation. The Resources Unit prepares and maintains this list under the direction of the Planning Section Chief.

Note: Depending on the incident, the Intelligence and Information function may be organized in several ways: 1) within the Command Staff as the Intelligence Officer; 2) As an Intelligence Unit in Planning Section; 3) As an Intelligence Branch or Group in the Operations Section; 4) as a separate General Staff Intelligence Section; and 5) as an Intelligence Technical Specialist. The incident will drive the need for the Intelligence and Information function and where it is located in the ICS organization structure. The Intelligence and information function is described in significant detail in NIMS and in the Coast Guard Incident Management Handbook (IMH).

Distribution. The Organization Assignment List is duplicated and attached to the Incident Objectives form (ICS 202-CG) and given to all recipients of the Incident Action Plan. All completed original forms MUST be given to the Documentation Unit.

<u>Item #</u>	<u>Item Title</u>	<u>Instructions</u>
1.	Incident Name	Enter the name assigned to the incident.
2.	Operational Period	Enter the time interval for which the form applies. Record the start and end date and time.
3.	Incident Commander and Staff	Enter the names of the Incident Commander and Staff. Use at least the first initial and last name.
4.	Agency Representative	Enter the agency names and the names of their representatives. Use at least the first initial and last name.
5. thru 8.	Section	Enter the name of personnel staffing each of the listed positions. Use at least the first initial and last name. For Units, indicate Unit Leader and for Divisions/Groups indicate Division/Group Supervisor. Use an additional page if more than three branches are activated. If there is a shift change during the specified operational period, list both names, separated by a slash.
9.	Prepared By Date/Time	Enter the name and position of the person completing the form Enter date (month, day, year) and time prepared (24-hour clock).



**INCIDENT OPEN ACTION TRACKER
ICS 233-CG**

1. Incident Name							
2. No.	3. Item	4. For/POC	5. POC Briefed	6. Start Date	7. Status	8. Target Date	9. Actual Date
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
37							

Open Actions Tracker (ICS 233-CG)

<u>Item #</u>	<u>Item Title</u>	<u>Instructions</u>
1.	Incident Name	Enter the name assigned to the incident.
2.	No.	Enter number of task in sequential order (1, 2, 3, ...).
3.	Item	Enter short descriptive of the task.
4.	For/POC	Enter responsible section/person.
5.	Briefed to POC	When the tasker has been briefed to the POC after initially assigned, an "X" is placed in the brief column. This was to ensure that taskers identified outside of the POC's presence (during UC Meeting for example) were assigned the to identified POC.
6.	Start Date	Enter the date the tasker was initially assigned under "Start Date."
7.	Status	Enter status of item. This includes things like: "Awaiting LE Gear", "Update needed", "Awaiting Feedback". When the item is completed, the word "completed" is entered and if working in MS Excel, the task is cut and pasted into the worksheet labeled "COMPLETED."
8.	Target Date	Target date is another way of saying deadline. When the target date is one day away, the block turns yellow. When it is overdue it turns red. When it is yellow, it serves as a reminder to the UC that the target date needs to be changed or the responsible section needs to complete the task.
9.	Actual Date	The block to the right of the Target Date (Actual Date) will always have today's date. It is merely the formula "=today()" inserted into the cell.

NOTE: In order to ensure the red and yellow reminders work for new tasks, the user simply copies a task line, inserts it into the worksheet and overtypes the new task information.

		WORK ANALYSIS MATRIX ICS 234-CG	
1. Incident Name		2. Operational Period From: _____ To: _____	
3. Operation's Objectives DESIRED OUTCOME	4. Optional Strategies HOW	5. Tactics/Work Assignments WHO, WHAT, WHERE, WHEN	
6. Prepared by: (Operations Section Chief)		7. Date/Time:	

INCIDENT ACTION PLAN SAFETY ANALYSIS (ICS FORM 215A-OS)

Purpose. This form communicates to the the Operations and Planning Section Chiefs safety and health issues identified by the Safety Officer. The Worksheet is used by the Planning section Chief to complete Operations briefings.

Preparation. This form is principally crafted by the Safety Officer. Use additional sheets, as needed.

Distribution. When the safety analysis is completed, the form is distributed to the Planning Section Chief to help prepare Operations briefing packages. All completed original forms MUST be given to the Documentation Unit.

Item #	Item Title	Instructions
1.	Incident Name	Enter the name assigned to the incident.
2.	Operational Period	Enter the time interval for which the form applies. Record the start and end date and time.
3.	Date	Enter date (MMDDYYYY) prepared.
4.	Time	Enter time prepared (24-hour clock).
	Division/Group	Enter Division/Group indentifiers.
	Blank Risk Header	Enter appropriate title for risk.
	Blank Risk Mitigation Header	Enter appropriate information for risk mitigation.
	Blank Risk Cells	Enter an X to indicate a risk type of concern in a division/group.
	Blank Risk Mitigation Cells	Enter an X to indicate mitigation for risk to division/group.
	Prepared By	Enter name and title of the person preparing the form.

ACP SITE INDEX (ICS 232a-CG)

Special Note. This optional form is designed to be a key to the site numbers or site names shown on the Situation Map. The information on priorities for environmentally-sensitive areas and archaeo-cultural and socio-economic issues from the ICS 232-CG may be transferred to ICS 232a-CG, which provides more information on the Area Contingency Plan (ACP) or Geographic Response Plan (GRP) site numbers or names shown on the Situation Map.

Purpose. If used, this form is posted next to the Situation Map, providing a key to the ACP/GRP sites shown on the map.

Preparation. The Situation Unit personnel responsible for the Situation Map prepare this form, using ICS 232-CG prepared by the Environmental Unit.

Distribution. This form is posted next to the Situation Map and copies of this form should accompany any distributed copies of the Situation Map. All completed original forms MUST be given to the Documentation Unit.

<u>Item #</u>	<u>Item Title</u>	<u>Instructions</u>
1.	Incident Name	Enter the name assigned to the incident.
2.	Operational Period	Enter the time interval for which the form applies.
3.	Index to ACP/GRP sites	Enter site information from the Area Contingency Plan (ACP) or Geographic Response Plan (GRP) or other sources specific to this incident.
	Site Number	Can come from an Area Contingency Plan (ACP) or Geographic Response Plan (GRP) or can be created during an incident.
	Priority	Priority specific to this incident.
	Site Name and/or Physical Location	Name of the site (e.g., Marsh Pt., Glacier Creek, etc.) and/or physical location (e.g., address, lat/long, landmarks, etc.).
	Action	Actions to be taken for designated protection and collection strategies or for other sites identified specifically for this incident.
	Status	Status of site action implementation (e.g., scheduled, in progress, completed).
4.	Prepared By	Enter name and title of the person preparing the form.
	Date/Time	Enter date (month, day, year) and time prepared (24-hour clock).

1. Incident Name		2. Operational Period (Date/Time) From: _____ To: _____		RESOURCES AT RISK SUMMARY ICS 232-CG
3. Environmentally-Sensitive Areas and Wildlife Issues				
Site #	Priority	Site Name and/or Physical Location	Site Issues	
Narrative				
4. Archaeo-cultural and Socio-economic Issues				
Site #	Priority	Site Name and/or Physical Location	Site Issues	
Narrative				
5. Prepared by: (Environmental Unit Leader)			Date/Time	
RESOURCES AT RISK SUMMARY			ICS 232-CG (Rev.07/04)	

RESOURCES AT RISK SUMMARY (ICS 232-CG)

Purpose. The Resources at Risk Summary provides information about sites in the incident area which are sensitive due to environmental, archaeo-cultural, or socio-economic resources at risk, and identifies incident-specific priorities and issues. The information recorded here may be transferred to ICS 232a-CG, which acts as a key to the Area Contingency Plan (ACP) or Geographic Response Plan (GRP) site numbers shown on the Situation Map.

Preparation. The Environmental Unit Leader, with input from resource trustees, will complete this form for each operational period. It should be updated prior to the Planning Meeting.

Distribution. This form must be forwarded to the Planning Section Chief for possible inclusion in the IAP. All completed original forms MUST be given to the Documentation Unit.

<u>Item #</u>	<u>Item Title</u>	<u>Instructions</u>
1.	Incident Name	Enter the name assigned to the incident.
2.	Operational Period	Enter the time interval for which the form applies.
3.	Env- Sensitive Area & Wildlife Issues	
	Site Number	Enter site number. Can come from Area Contingency Plan (ACP) or Geographic Response Plan (GRP) or can be created during an incident.
	Priority	Priority specific to this incident. Can come from an ACP/GRP or can be created during an incident.
	Site Name and/or Physical Location	Name of the site (e.g., Marsh Pt., Glacier Creek, etc.) and/or physical location (e.g., address, lat/long, landmarks, etc.).
	Site Issues	Environmental concerns associated with this site and season.
	Narrative	Use the Narrative section to clarify any issues.
4.	Archaeo-cultural and Socio-economic Issues	
	Site Number	Enter site number. Can come from an ACP/GRP or can be created during an incident.
	Priority	Priority specific to this incident. Can come from an ACP/GRP or can be created during an incident.
	Site Name and/or Physical Location	Name of the site (e.g., Marsh Pt., Glacier Creek, etc.) and/or physical location (e.g., address, lat/long, landmarks, etc.).
	Site Issues	Archaeo-cultural or socio-economic concerns associated with this site and season.
	Narrative	Use the Narrative section to clarify any issues.
5.	Prepared By	Enter name and title of the person preparing the form (normally the Environmental Unit Leader).
	Date/Time	Enter date (month, day, year) and time prepared (24-hour clock).

1. Incident Name	2. Operational Period to be covered by IAP (Date/Time) From: _____ To: _____	CG IAP COVER SHEET
-------------------------	--	-------------------------------

3. Approved by Incident Commander(s):

<u>ORG</u>	<u>NAME</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

INCIDENT ACTION PLAN

The items checked below are included in this Incident Action Plan:

- ICS 202-CG (Response Objectives)

- ICS 203-CG (Organization List) – OR – ICS 207-CG (Organization Chart)

- ICS 204-CGs (Assignment Lists)
One Copy each of any ICS 204-CG attachments:

- ICS 205-CG (Communications Plan)

- ICS 206-CG (Medical Plan)
- ICS 208-CG (Site Safety Plan) or Note SSP Location _____
- Map/Chart
- Weather forecast / Tides/Currents

Other Attachments

- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____

4. Prepared by: _____	Date/Time _____
------------------------------	------------------------

ASSIGNMENT LIST (ICS 204-CG)

Purpose. The Assignment List(s) informs Division and Group supervisors of incident assignments. Once the Unified Command and General Staff agree to the assignments, the assignment information is given to the appropriate Divisions and Groups.

Preparation. The Assignment List is normally prepared by the Resources Unit, using guidance from the Incident Objectives (ICS 202-CG), Operational Planning Worksheet (ICS 215-CG), and the Operations Section Chief. The Assignment List must be approved by the Planning Section Chief and Operations Section Chief. When approved, it is included as part of the Incident Action Plan (IAP). Specific instructions for specific resources may be entered on an ICS 204a-CG for dissemination to the field. A separate sheet is used for each Division or Group. The identification letter of the Division is entered in the form title. Also enter the number (roman numeral) assigned to the Branch.

Special Note. The Assignment List, ICS 204-CG submits assignments at the level of Divisions and Groups. The Assignment List Attachment, ICS 204a-CG shows more specific assignment information, if needed. The need for an ICS 204a-CG is determined by the Planning and Operations Section Chiefs during the Operational Planning Worksheet (ICS 215-CG) development.

Distribution. The Assignment List is duplicated and attached to the Incident Objectives and given to all recipients of the Incident Action Plan. In some cases, assignments may be communicated via radio/telephone/fax. All completed original forms MUST be given to the Documentation Unit.

<u>Item #</u>	<u>Item Title</u>	<u>Instructions</u>
1.	Incident Name	Enter the name assigned to the incident.
2.	Operational Period	Enter the time interval for which the form applies.
3.	Branch	Enter the Branch designator.
4.	Division/Group/Staging	Enter the Division/Group/Staging designator.
5.	Operations Personnel	Enter the name of the Operations Chief, applicable Branch Director, and Division Supervisor.
6.	Resources Assigned	Each line in this field may have a separate Assignment List Attachment (ICS 204a-CG). Enter the following information about the resources assigned to Division or Group for this period:
	Identifier	List identifier
	Leader	Leader name
	Contact Information	Primary means of contacting this person (e.g., radio, phone, pager, etc.). Be sure to include area code when listing a phone number.
	# Of Persons	Total number of personnel for the strike team, task force, or single resource assigned.
	Reporting Info/Notes/Remarks	Special notes or directions, specific to this strike team, task force, or single resource. Enter an "X" check if an Assignment List Attachment (ICS 204a-CG) will be prepared and attached. The Planning and Operations Section Chiefs determine the need for an ICS 204a-CG during the Operational Planning Worksheet (ICS 215-CG) development.
7.	Work Assignment	Provide a statement of the tactical objectives to be achieved within the operational period by personnel assigned to this Division or Group.
8.	Special Instructions	Enter a statement noting any safety problems, specific precautions to be exercised, or other important information.
9.	Communications	Enter specific communications information (including emergency numbers) for this division /group. If radios are being used, enter function (command, tactical, support, etc.), frequency, system, and channel from the Incident Radio Communications Plan (ICS 205-CG). Note: Phone numbers should include area code.
10.	Prepared By	Enter the name of the person completing the form, normally the Resources Unit Leader.
	Date/Time	Enter date (month, day, year) and time prepared (24-hour clock).
11.	Reviewed by (PSC)	Enter date (month, day, year) and time prepared (24-hour clock).
	Date/Time	Enter date (month, day, year) and time prepared (24-hour clock).
12.	Reviewed by (OSC)	Enter the name of the operations person reviewing the form, normally the Operations Section Chief.
	Date/Time	Enter date (month, day, year) and time prepared (24-hour clock).

1. Incident Name		2. Operational Period (Date/Time)		ASSIGNMENT LIST ATTACHMENT	
		From: _____ To: _____		ICS 204a-CG	
3. Branch			4. Division/Group		
5. Strike Team/Task Force/Resource (Identifier)		6. Leader		7. Assignment Location	
8. Work Assignment Special Instructions, Special Equipment/Supplies Needed for Assignment, Special Environmental Considerations, Special Site Specific Safety Considerations					
Approved Site Safety Plan Located at:					
9. Other Attachments (as needed)					
<input type="checkbox"/> Map/Chart		<input type="checkbox"/> Weather Forecast/Tides/Currents		<input type="checkbox"/> _____	
<input type="checkbox"/> _____		<input type="checkbox"/> _____		<input type="checkbox"/> _____	
10. Prepared by: _____		Date/Time _____		11. Reviewed by (PSC): _____	
				Date/Time _____	
				12. Reviewed by (OSC): _____	
				Date/Time _____	

1. Incident Name		2. Operational Period (Date / Time) From: _____ To: _____			INCIDENT RADIO COMMUNICATIONS PLAN ICS 205-CG	
3. BASIC RADIO CHANNEL USE						
SYSTEM / CACHE	CHANNEL	FUNCTION	FREQUENCY	ASSIGNMENT	REMARKS	
4. Prepared by: (Communications Unit)				Date / Time		
INCIDENT RADIO COMMUNICATIONS PLAN					ICS 205-CG (Rev.07/04)	

INCIDENT RADIO COMMUNICATIONS PLAN (ICS 205-CG)

Special Note. This form, ICS 205-CG, is used to provide, in one location, information on all radio frequency assignments down to the Division/Group level for each operational period; whereas, the Communications List, ICS 205a-CG is used to list methods of contact for personnel assigned to the incident (radio frequencies, phone numbers, pager numbers, etc.).

Purpose. The Incident Radio Communications Plan is a summary of information obtained from the Radio Requirements Worksheet (ICS 216) and the Radio Frequency Assignment Worksheet (ICS 217). Information from the Radio Communications Plan on frequency assignments is normally noted on the appropriate Assignment List (ICS 204-CG).

Preparation. The Incident Radio Communications Plan is prepared by the Communications Unit Leader and given to the Planning Section Chief. Detailed instructions on the preparation of this form may be found in ICS Publication 223-5, Communications Unit Position Manual.

Distribution. The Incident Radio Communications Plan is duplicated and given to all recipients of the Incident Objectives form, including the Incident Communications Center. Information from the plan is placed on Assignment Lists. All completed original forms MUST be given to the Documentation Unit.

<u>Item #</u>	<u>Item Title</u>	<u>Instructions</u>
1.	Incident Name	Enter the name assigned to the incident.
2.	Operational Period	Enter the time interval for which the form applies.
3.	Basic Radio Channel System Channel Function Frequency Assignment Remarks	Enter the following information about radio channel use: Radio cache system(s) assigned and used on the incident. Radio channel numbers assigned. Function each channel is assigned (e.g., command, support, division tactical, and ground-to-air). Radio frequency tone number assigned to each specified function (e.g., 153.400) ICS organization assigned to each of the designated frequencies (e.g., Branch I, Division A). This section should include narrative information regarding special situations.
4.	Prepared By	Enter the name of the Communications Unit Leader preparing the form.
	Date/Time	Enter date (month, day, year) and time prepared (24-hour clock).

COMMUNICATIONS LIST (ICS 205a-CG)

Special Note. This optional form is used in conjunction with the Incident Radio Communications Plan, ICS 205-CG. Whereas the ICS 205-CG is used to provide information on all radio frequencies down to the Division/Group level, the Communications List, ICS 205a-CG, lists methods of contact for personnel assigned to the incident (radio frequencies, phone numbers, pager numbers, etc.), and functions as an incident directory.

Purpose. The Communications List records methods of contact for personnel on scene.

Preparation. The Communications List can be filled out during check-in and is maintained and distributed by Communications Unit personnel.

Distribution. The Communications List is distributed within the ICS and posted, as necessary. All completed original forms MUST be given to the Documentation Unit.

<u>Item #</u>	<u>Item Title</u>	<u>Instructions</u>
1.	Incident Name	Enter the name assigned to the incident.
2.	Operational Period	Enter the time interval for which the form applies.
3.	Basic Local Comms Information	Enter the communications methods assigned and used for each assignment.
	Assignment Name	Enter the ICS Organizational assignment.
	Name	Enter the name of the contact person for the assignment.
	Method(s) of contact	Enter the radio frequency, telephone number(s), etc. for each assignment.
4.	Prepared By	Enter the name of the Communications Unit Leader preparing the form.
	Date/Time	Enter date (month, day, year) and time prepared (24-hour clock).

MEDICAL PLAN (ICS 206-CG)

Purpose. The Medical Plan provides information on incident medical aid stations, transportation services, hospitals, and medical emergency procedures.

Preparation. The Medical Plan is prepared by the Medical Unit Leader and reviewed by the Safety Officer.

Distribution. The Medical Plan may be attached to the Incident Objectives (ICS 202-CG), or information from the plan pertaining to incident medical aid stations and medical emergency procedures may be taken from the plan and noted on the Assignment List (ICS 204-CG) or on the Assignment List Attachment (ICS 204a-CG). All completed original forms MUST be given to the Documentation Unit.

<u>Item #</u>	<u>Item Title</u>	<u>Instructions</u>
1.	Incident Name	Enter the name assigned to the incident.
2.	Operational Period	Enter the time interval for which the form applies.
3.	Medical Aid Stations	Enter name, location, and telephone number of the medical aid station(s) (e.g., Cajon Staging Area, Cajon Camp Ground) and indicate if paramedics are located at the site.
4.	Transportation	List name and address of ambulance services. Provide phone number and indicate if ambulance company has paramedics.
5.	Hospitals	List hospitals that could serve this incident. Enter hospital name, address, phone number, the travel time by air and ground from the incident to the hospital, and indicate if the hospital has a burn center and/or a helipad.
6.	Medical Emergency Procedures	Note any special emergency instructions for use by incident personnel.
7.	Prepared By Date/Time	Enter the name of the Medical Unit Leader preparing the form. Enter date (month, day, year) and time prepared (24-hour clock).
8.	Reviewed By Date/Time	Enter the name of the Safety Officer who must review the plan. Enter date (month, day, year) and time reviewed (24-hour clock).

Resource Request Message							ICS-213 RR CG (05/06)	
1. Incident Name:			2. Date/Time:		3. Resource Request No:			
4. ORDER Note: Use additional forms when requesting different resource sources of supply								
Requestor	a. Qty.	b. Kind	c. Type	d. Detailed item description (Vital characteristics, brand, specs, experience, etc. & if applicable describe purpose/use, attach diagrams, & other amplifying info)	e. Requested Reporting Location:	Date/Time:	f. ETA (LSC):	g. Cost (FSC):
5. Suggested source(s) of Supply - POC phone no. if known & suitable substitutes:								
6. Requested by Name/Position/Phone:			7. Date/Time:		8. Section Chief Approval:		Date/Time:	
<input type="checkbox"/> 9. Check box if request is for tactical/personnel resources & Submit to RESL, otherwise submit directly to Logistics				10. RESL Review/Signature:				
				<input type="checkbox"/> Resources as noted are Available			<input type="checkbox"/> Resources Not Available	
Logistics	11. Logistics Order No.:				12. Supplier Name/Phone/Fax/Email:			
	13. Notes:							
	14. Approval Signature of Auth Logistics Rep:					15. Date/Time:		
16. Order placed by (check box):		<input type="checkbox"/> SPUL	<input type="checkbox"/> PROC					
Finance	17. Reply/Comments from Finance:							
	18. Finance Section Signature:					19. Date/Time:		

Full Instructions on back page. Requestor fills out # 1-9 & keeps yellow copy (bottom). If applicable, RESL reviews if resource available & signs # 10. Logistics fills in remainder of # 4 & # 10-15 & keeps pink copy. Finance, if needed fills out appropriate items & keeps green copy. Blue original is returned to RESL for tactical/personnel or requestor for non-tactical. White copy goes to DOCL.

Instructions for filling out the ICS-213RR CG Form (5/06)

REQUESTOR: The requestor must fill in Blocks 1 through 9:

Block # 1	Incident name: This is the same as the name stated on the ICS-201 Form and/or the Incident Action Plan (IAP).
Block # 2	Current date and time when submitting request
Block # 3	Resource Request Number: This is to be assigned by the Section submitting request (i.e. CMD, OPS, PLAN, LOG, FIN)
Block # 4	Fill in blocks 4a through 4e. <u>Items requested</u> : Must include Quantity, Kind and Type (if applicable) and detailed description of requirements. BE SPECIFIC AS POSSIBLE . The request should focus on capability rather than naming the brand or specific item (e.g. helicopter capable of carrying 4 personnel from location A to B rather than requesting a Coast Guard H-65 helicopter). This gives the logistics section the ability to find the best resource to meet the need. <u>4.e Requested Reporting Location/Date/Time</u> : This is self-explanatory and is required for ordering official. <u>Leave blocks 4.f. ETA (LSC) and 4.g. Cost (FSC) blank</u> . These will be filled in later by Logistics and Finance.
Block # 5	Suggested sources of supply and suitable substitutes: Enter applicable information if known.
Block # 6 & 7	Requestor: Print Name and Signature and date/time.
Block # 8	Approval: This must be approved by the Section Chief or Deputy Section Chief.
Block # 9	Check box if request is for tactical or personnel resource(s) and submit request to Resources Unit Leader (RESL) to review and approve since RESL tracks all tactical and personnel resources.

Request goes to RESOURCES UNIT if requesting Tactical/Personnel Resource(s):

Block # 10	Resources reviews request and checks to see if resource is available. If the resource is <u>available</u> , reassigns resource as appropriate and sends request back to requester with information noted as to reporting time, etc. The request form is then sent to Documentation Unit Leader (DOCL) for filing. If the resource is <u>not available</u> , RESL sends request to Logistics.
------------	--

LOGISTICS SECTION: The following blocks are to be filled out by the Supply Unit (SPUL).

Block # 11	Logistics Order Number: To be assigned by Supply Unit.
Block # 12	Supplier Point of Contact, Phone Number and Fax Number: This information is needed for Credit Card purchases and/or Purchase Orders.
Block # 13	Notes: Enter applicable information as need for request.
Block # 4	ETA and Cost: SPUL or PROC fills in Estimated time of arrival (ETA) when determined and cost if known.
Block # 14 & 15	Approval: This must be approved by the Logistics Section Chief or Deputy Logistics Section Chief, printed name and signature is required with Date and Time of approval. Bottom Copy (pink) is retained.

FINANCE SECTION: The following blocks are to be filled out by the Procurement Unit (PROC), if applicable.

Block # 16	Indicates who is to place order as necessary.
Block # 17	Comments concerning request from Finance Section Chief or Deputy Finance Section Chief.
Block # 18 & 19	Approval: This must be approved by the Finance Section Chief or Deputy Section Chief, printed name and signature is required with Date and Time of approval. Bottom copy (green) is retained.
FILING	Original blue copy is returned to RESL for tactical/personnel resources ordered, and the requester for non-tactical. RESL will inform requester of status of request when form received. The white copy is sent to DOCL.

Note: Cost associated requests will not be ordered without approval from the Finance Section Chief or Deputy Finance Section Chief.

Form Filing: Blue (Original) – final disposition to RESL or originator for non-tactical resources, White (copy 1) to DOCL, Green (copy 2) to FIN, Pink (copy 3) to LOG, Yellow (copy 4) to Originator

1. Incident Name		2. Operational Period (Date / Time) From: _____ To: _____		Time of Report	INCIDENT STATUS SUMMARY ICS 209-OS																																																																																													
3. Spill Status (Estimated, in Barrels) [Ops & EUL/SSC] Source Status: Remaining Potential (bbl): _____ <input type="checkbox"/> Secured Rate of Spillage (bbl/hr): _____ <input type="checkbox"/> Unsecured <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:70%;"></th> <th style="width:15%;">Since Last Report</th> <th style="width:15%;">Total</th> </tr> <tr> <td>Volume Spilled</td> <td></td> <td></td> </tr> </table> Mass Balance / Oil Budget <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Recovered Oil</td><td></td><td></td></tr> <tr><td>Evaporation</td><td></td><td></td></tr> <tr><td>Natural Dispersion</td><td></td><td></td></tr> <tr><td>Chemical Dispersion</td><td></td><td></td></tr> <tr><td>Burned</td><td></td><td></td></tr> <tr><td>Floating, Contained</td><td></td><td></td></tr> <tr><td>Floating, Uncontained</td><td></td><td></td></tr> <tr><td>Onshore</td><td></td><td></td></tr> <tr><td colspan="3" style="text-align: right;">Total spilled oil accounted for:</td></tr> </table>					Since Last Report	Total	Volume Spilled			Recovered Oil			Evaporation			Natural Dispersion			Chemical Dispersion			Burned			Floating, Contained			Floating, Uncontained			Onshore			Total spilled oil accounted for:			8. Equipment Resources [RUL] <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:30%;">Description</th> <th style="width:10%;">Ordered</th> <th style="width:10%;">Available / Staged</th> <th style="width:10%;">Assigned</th> <th style="width:10%;">Out of Service</th> </tr> </thead> <tbody> <tr><td>Spill Resp. VsIs</td><td></td><td></td><td></td><td></td></tr> <tr><td>Fishing Vessels</td><td></td><td></td><td></td><td></td></tr> <tr><td>Tugs</td><td></td><td></td><td></td><td></td></tr> <tr><td>Barges</td><td></td><td></td><td></td><td></td></tr> <tr><td>Other Vessels</td><td></td><td></td><td></td><td></td></tr> <tr><td>Skimmers</td><td></td><td></td><td></td><td></td></tr> <tr><td>Boom (ft.)</td><td></td><td></td><td></td><td></td></tr> <tr><td>Sbnt/Snr Bm. (ft.)</td><td></td><td></td><td></td><td></td></tr> <tr><td>Vacuum Trucks</td><td></td><td></td><td></td><td></td></tr> <tr><td>Helicopters</td><td></td><td></td><td></td><td></td></tr> <tr><td>Fixed Wing</td><td></td><td></td><td></td><td></td></tr> </tbody> </table>		Description	Ordered	Available / Staged	Assigned	Out of Service	Spill Resp. VsIs					Fishing Vessels					Tugs					Barges					Other Vessels					Skimmers					Boom (ft.)					Sbnt/Snr Bm. (ft.)					Vacuum Trucks					Helicopters					Fixed Wing				
	Since Last Report	Total																																																																																																
Volume Spilled																																																																																																		
Recovered Oil																																																																																																		
Evaporation																																																																																																		
Natural Dispersion																																																																																																		
Chemical Dispersion																																																																																																		
Burned																																																																																																		
Floating, Contained																																																																																																		
Floating, Uncontained																																																																																																		
Onshore																																																																																																		
Total spilled oil accounted for:																																																																																																		
Description	Ordered	Available / Staged	Assigned	Out of Service																																																																																														
Spill Resp. VsIs																																																																																																		
Fishing Vessels																																																																																																		
Tugs																																																																																																		
Barges																																																																																																		
Other Vessels																																																																																																		
Skimmers																																																																																																		
Boom (ft.)																																																																																																		
Sbnt/Snr Bm. (ft.)																																																																																																		
Vacuum Trucks																																																																																																		
Helicopters																																																																																																		
Fixed Wing																																																																																																		
4. Waste Management (Estimated) [Ops / Disposal] <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:70%;"></th> <th style="width:10%;">Recovered</th> <th style="width:10%;">Stored</th> <th style="width:10%;">Disposed</th> </tr> </thead> <tbody> <tr><td>Oil (bbl)</td><td></td><td></td><td></td></tr> <tr><td>Oily Liquids (bbl)</td><td></td><td></td><td></td></tr> <tr><td>Liquids (bbl)</td><td></td><td></td><td></td></tr> <tr><td>Oily Solids (tons)</td><td></td><td></td><td></td></tr> <tr><td>Solids (tons)</td><td></td><td></td><td></td></tr> </tbody> </table>					Recovered	Stored	Disposed	Oil (bbl)				Oily Liquids (bbl)				Liquids (bbl)				Oily Solids (tons)				Solids (tons)				9. Personnel Resources [RUL] <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:30%;">Description</th> <th style="width:15%;">People in Cmd. Post</th> <th style="width:15%;">People in the Field</th> <th style="width:10%;">Total People On Scene</th> </tr> </thead> <tbody> <tr><td>Federal</td><td></td><td></td><td></td></tr> <tr><td>State</td><td></td><td></td><td></td></tr> <tr><td>Local</td><td></td><td></td><td></td></tr> <tr><td>RP</td><td></td><td></td><td></td></tr> <tr><td>Contract Personnel</td><td></td><td></td><td></td></tr> <tr><td>Volunteers</td><td></td><td></td><td></td></tr> <tr><td colspan="4" style="text-align: right;">Total Response Personnel from all Organizations:</td></tr> </tbody> </table>		Description	People in Cmd. Post	People in the Field	Total People On Scene	Federal				State				Local				RP				Contract Personnel				Volunteers				Total Response Personnel from all Organizations:																																								
	Recovered	Stored	Disposed																																																																																															
Oil (bbl)																																																																																																		
Oily Liquids (bbl)																																																																																																		
Liquids (bbl)																																																																																																		
Oily Solids (tons)																																																																																																		
Solids (tons)																																																																																																		
Description	People in Cmd. Post	People in the Field	Total People On Scene																																																																																															
Federal																																																																																																		
State																																																																																																		
Local																																																																																																		
RP																																																																																																		
Contract Personnel																																																																																																		
Volunteers																																																																																																		
Total Response Personnel from all Organizations:																																																																																																		
5. Shoreline Impacts (Estimated, in miles) [PSC / EUL / SSC] <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;">Degree of Oiling</th> <th style="width:15%;">Affected</th> <th style="width:15%;">Cleaned</th> <th style="width:15%;">To Be Cleaned</th> </tr> </thead> <tbody> <tr><td>Light</td><td></td><td></td><td></td></tr> <tr><td>Medium</td><td></td><td></td><td></td></tr> <tr><td>Heavy</td><td></td><td></td><td></td></tr> <tr><td>Total</td><td></td><td></td><td></td></tr> </tbody> </table>				Degree of Oiling	Affected	Cleaned	To Be Cleaned	Light				Medium				Heavy				Total				10. Special Notes 																																																																										
Degree of Oiling	Affected	Cleaned	To Be Cleaned																																																																																															
Light																																																																																																		
Medium																																																																																																		
Heavy																																																																																																		
Total																																																																																																		
6. Wildlife Impacts [Ops / Wildlife Br.] Numbers in () indicate subtotal that are threatened / endangered species. <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width:15%;"></th> <th rowspan="2" style="width:10%;">Captured</th> <th rowspan="2" style="width:10%;">Cleaned</th> <th rowspan="2" style="width:10%;">Released</th> <th rowspan="2" style="width:10%;">DOA</th> <th colspan="2" style="width:15%;">Died in Facility</th> </tr> <tr> <th style="width:5%;">Euth.</th> <th style="width:5%;">Other</th> </tr> </thead> <tbody> <tr><td>Birds</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Mammals</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Reptiles</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Fish</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Total</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>					Captured	Cleaned	Released	DOA	Died in Facility		Euth.	Other	Birds							Mammals							Reptiles							Fish							Total																																																									
	Captured	Cleaned	Released						DOA	Died in Facility																																																																																								
				Euth.	Other																																																																																													
Birds																																																																																																		
Mammals																																																																																																		
Reptiles																																																																																																		
Fish																																																																																																		
Total																																																																																																		
7. Safety Status [Safety Officer] <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:70%;"></th> <th style="width:15%;">Since Last Report</th> <th style="width:15%;">Total</th> </tr> </thead> <tbody> <tr><td>Responder Injury</td><td></td><td></td></tr> <tr><td>Public Injury</td><td></td><td></td></tr> </tbody> </table>					Since Last Report	Total	Responder Injury			Public Injury																																																																																								
	Since Last Report	Total																																																																																																
Responder Injury																																																																																																		
Public Injury																																																																																																		
11. Prepared by: (Situation Unit Leader)																																																																																																		
INCIDENT STATUS SUMMARY			June 2000		ICS 209-OS																																																																																													

INCIDENT STATUS SUMMARY (ICS FORM 209-OS)

Purpose. The Status Summary:

1. Is used by Situation Unit personnel for posting information on Status Boards.
2. Is duplicated and provided to Command Staff members, giving them basic information for planning for the next operational period.
3. Provides information to the Information Officer for preparing news media releases.
4. Summarizes incident information for local and off-site coordination centers.

Preparation. The Status Summary is prepared by the Situation Unit. Resources information should be obtained from the Resources Unit. It may be scheduled for presentation to the Planning Section Chief and other General Staff members prior to each Planning Meeting and may be required at more frequent intervals by the Unified Command or Planning Section Chief. Suggested sources of information are noted in brackets.

Note: The values on the ICS form 209-OS are the best available estimates at the Time of Report (Item # 2 on form). This form is usually in high demand and should be filled out early and often. A suggested source within the ICS organization is noted in brackets [] at the top right of each section of the form. All fields need not be completed in order to distribute the form.

Distribution. When completed, the form is duplicated and copies are distributed to the Unified Command and staff, and all Section Chiefs, Planning Section Unit Leaders, and the Joint Information Center. It is also posted on a status board located at the ICP. All completed original forms MUST be given to the Documentation Unit.

Item #	Item Title	Instructions
1.	Incident Name	Enter the name assigned to the incident.
2.	Period Covered by Report	Enter the date and time interval for which the report applies. Use 24-hour clock for all times. Enter time for which this information applies.
	Time of Report	Enter the Time (24-hour clock) the form was prepared.
3.	Spill Status [Ops & EUL/SSC]	Indicate whether the spill source is secured or unsecured and estimate the remaining potential and the rate of spillage discharge or release. Enter the estimated amounts in barrels for each category. Values entered in the column labeled Since Last Report are from the start of the Period Covered by Report (Item 2) to the time entered in the Time of Report (Item 2).
4.	Mass Balance/Oil Budget	These fields are designed to account for all spilled oil whether recovered, evaporated, dispersed, burned, floating, or on shore. The total of these estimates should approximate the total volume spilled, discharged, or released. Values for evaporation, dispersion, etc. can be obtained from the Environmental Unit and/or the Scientific Support Coordinator.
5.	Waste Management [Ops/Disposal]	Enter the estimated amounts in barrels or tons for each category. Oil (bbl) is the sum of the estimate of oil in oily liquids and oil in oily solids, and is the value to be entered under "Total Recovered Oil" in Item 3.
6.	Shoreline Impacts [PSC/EUL/SSC]	Enter the total miles in each category for each degree of oiling. Definitions for Light, Medium, and Heavy oiling can be obtained from the EUL/SSC and should be consistent throughout the incident.

Item #	Item Title	Instructions
7.	Wildlife Impacts [Ops/Wildlife Br.]	This information is only tracked after an animal is captured. Indicate the actual number of oiled wildlife in each category. Use numbers in parentheses to indicate the subtotal of threatened / endangered species included in the numbers given.
	Safety Status [Safety Officer]	Indicate the number of serious injuries. Values entered in the column labeled Since Last Report are from the start of the Period Covered by Report (Item 2) to the time entered in the Time of Report (Item 2).
8.	Equipment Resources [RUL]	Indicate the number of each type of resource in each status category. There are blank lines below each general type of resource for additional equipment.
	Ordered Available/Staged	Ordered but not yet arrived/available. Arrived on scene, stored in staging, not assigned to any task, available for use.
	Assigned Out of Service	Assigned to a specific task. Not working and not assigned to any task (e.g., skimmer being repaired, boom broken, personnel off-duty for rest).
9.	Personnel Resources [RUL]	Indicate, by agency, the numbers of personnel assigned. There are blank lines for additional personnel, as needed.
10.	Special Notes	Use this area for any special notes or other information related to this reporting period. This could include financial/cost information, specific endangered species notes, significant events that occurred, etc.
11.	Prepared By	Enter name and title of the person preparing the form, normally the Situation Unit Leader.

RADIO REQUIREMENTS WORKSHEET			1. Incident Name				2. Date		3. Time		
4. Branch			5. Agency			6. Operational Period			7. Tactical Frequency		
8. Division/Group			Division/Group			Division/Group			Division/Group		
Agency			Agency			Agency			Agency		
9. Agency	ID No.	Radio Requirements	Agency	ID No.	Radio Requirements	Agency	ID No.	Radio Requirements	Agency	ID No.	Radio Requirements
Page 1 of			10. Prepared by (Name and Position)								

1. Incident Name		2. Operational Period (Date / Time) From: _____ To: _____				AIR OPERATIONS SUMMARY ICS 220-CG			
3. Distribution <input type="checkbox"/> Fixed-Wing Bases _____ <input type="checkbox"/> Helibase _____									
4. Personnel and Communications						5. Remarks (Spec. Instructions, Safety Notes, Hazards, Priorities)			
	Air Operations Director	Air / Air Frequency	Air / Ground Frequency						
Air Operations Director	_____	_____	_____						
Air Tactical Supervisor	_____	_____	_____						
Air Support Supervisor	_____	_____	_____						
Helicopter Coordinator	_____	_____	_____						
Fixed-Wing Coordinator	_____	_____	_____						
6. Location / Function	7. Assignment	8. Fixed-Wing		9. Helicopter		10. Time		11. Aircraft Assigned	12. Operating Base
		NO.	TYPE	NO.	TYPE	Available	Commence		
13. TOTALS									
14. Air Operation Support Equipment					15. Prepared by			Date / Time	
AIR OPERATIONS SUMMARY								ICS 220-CG (Rev.07/04)	

AIR OPERATIONS SUMMARY (ICS 220-CG)

Purpose. The Air Operations Summary provides the Air Operations Branch with the number, type, location, and specific assignments of aircraft.

Preparation. The Operations Section Chief or the Air Operations Branch Director completes the summary during each Planning Meeting. General air resource assignment information is obtained from the Operational Planning Worksheet (ICS 215-CG). The Air and Fixed-Wing Support Groups provide specific designators of the air resources assigned to the incident.

Distribution. After the summary is completed by Air Operations personnel (except item 11), the form is given to the Air Support Group Supervisor, who completes the form by indicating the designators of the helicopters and fixed-wing aircraft assigned missions during the specified operational period. This information is provided to Air Operations personnel who, in turn, give the information to the Resources Unit. All completed original forms MUST be given to the Documentation Unit.

<u>Item #</u>	<u>Item Title</u>	<u>Instructions</u>
1.	Incident Name	Enter the name assigned to the incident.
2.	Operational Period	Enter the time interval for which the form applies.
3.	Distribution	Check the block and enter the time and date when ICS 220-CG and attachments were sent to all fixed-wing bases and helibases supporting the incident.
4.	Personnel and Communications	List the names of those assigned to each position, and the air-air and air-ground frequencies to be used.
5.	Remarks	Enter the special instructions or information, including safety notes, hazards, and priorities for Air Operations personnel.
6.	Location/Function	Enter the assigned location and function of the aircraft.
7.	Assignment	Enter the scope of work the aircraft is assigned to complete.
8.	Fixed Wing	Indicate the number and type of fixed-wing aircraft available for this Location / Function.
9.	Helicopters	Indicate the number and type of helicopters available for this Location / Function.
10.	Time	Indicate when aircraft will be available for use and when operations commence (use 24 hour clock).
11.	Aircraft Assigned	Enter the designators of the aircraft assigned. Gather information from Resources Unit, helibases, and fixed-wing bases.
12.	Operating Base	Enter the base (helibase, helispot, fixed-wing base) from which each air resource is expected to initiate operations.
13.	Totals	Enter the total number of fixed-wing and helicopter aircraft assigned to the incident in the Number columns. Enter the total number of each type of aircraft assigned in the Type columns.
14.	Air Operations Support Equipment	List the designators and location of other support resources assigned to Air Operations.
15.	Prepared By	Enter name and title of the person preparing the form.
	Date/Time	Enter date (month, day, year) and time prepared (24-hour clock).

1. Incident Name	2. Operational Period (Date / Time) From: _____ To: _____	DEMOB. CHECK-OUT ICS 221-CG
3. Unit / Personnel Released		4. Release Date / Time
<p>5. Unit / Personnel</p> <p>You and your resources have been released, subject to signoff from the following: (Demob. Unit Leader "X" appropriate box(es))</p> <p>Logistics Section</p> <p><input type="checkbox"/> Supply Unit _____</p> <p><input type="checkbox"/> Communications Unit _____</p> <p><input type="checkbox"/> Facilities Unit _____</p> <p><input type="checkbox"/> Ground Unit _____</p> <p>Planning Section</p> <p><input type="checkbox"/> Documentation Unit _____</p> <p>Finance / Admin. Section</p> <p><input type="checkbox"/> Time Unit _____</p> <p>Other</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p>		
<p>6. Remarks</p> <hr/> <hr/> <hr/> <hr/>		
7. Prepared by: _____		Date / Time _____
DEMOB. CHECK-OUT		ICS 221-CG (Rev.07/04)

DEMOB. CHECK-OUT (ICS 221-CG)

Purpose. This form provides the Planning Section information on resource releases from the incident.

Preparation. The Demobilization Unit Leader or the Planning Section initiates this form. The Demobilization Unit Leader completes the top portion of the form after the resource supervisor has given written notification that the resource is no longer needed.

Distribution. The individual resource will have the unit leader initial the appropriate box(es) in item 5 prior to release from the incident. After completion, the form is returned to the Demobilization Unit Leader or the Planning Section. All completed original forms MUST be given to the Documentation Unit.

<u>Item #</u>	<u>Item Title</u>	<u>Instructions</u>
1.	Incident Name	Enter the name assigned to the incident.
2.	Operational Period	Enter the time interval for which the form applies.
3.	Strike Team / Unit / Personnel Released	Enter name of Strike Team, Unit or personnel being released.
4.	Release Date/Time	Enter date (month, day, year) and time (24-hour clock) of anticipated release.
5.	Strike Team / Unit / Personnel	Demobilization Unit Leader will enter an "X" in the box to the left of those units requiring check-out. Identified Unit Leaders are to initial to the right to indicate release. NOTE: Blank boxes are provided for any additional unit requirements as needed, (e.g., Safety Officer, Agency Rep., etc.)
6.	Remarks	Enter any additional information pertaining to demobilization or release (e.g., transportation needed, destination, etc.).
7.	Prepared By	Enter name and title of the person preparing the form.
	Date/Time	Enter date (month, day, year) and time prepared (24-hour clock).

1. Incident Name	2. Meeting Date / Time	MEETING SUMMARY ICS 231-OS
3. Meeting Name		
4. Meeting Location		
5. Facilitator		
6. Attendees		
7. Notes (with summary of decisions and action items)		
8. Prepared by:		Date / Time
MEETING SUMMARY	June 2000	ICS 231-OS

MEETING SUMMARY (ICS FORM 231-OS)

Purpose. The Meeting Summary provides more detailed information concerning the attendees and notes from a particular meeting.

Preparation. This form is prepared under the direction of the facilitator of the meeting and coordinated through the Unified Command.

The following lists the usual facilitator for each meeting:

Unified Command Meeting - Facilitated by a member of the Unified Command.

Initial Incident ICS 201 Briefing - Facilitated by the initial Incident Commander.

Tactics Meeting - Facilitated by the Planning Section Chief.

Planning Meeting - Facilitated by the Planning Section Chief.

Operations Briefing - Facilitated by the Planning Section Chief.

Command Staff Meeting - Facilitated by a member of the Unified Command.

Business Management Meeting - Facilitated by a member of the Unified Command.

Agency Representative Meeting - Facilitated by the Liaison Officer.

Press Briefing - Facilitated by the Information Officer.

Distribution. After completion and approval by Unified Command, the Situation Unit Leader will distribute a copy of the Meeting Summary to the attendees and post it at the Situation Display. All completed original forms **MUST** be given to the Documentation Unit.

Item #	Item Title	Instructions
1.	Incident Name	Enter the name assigned to the incident.
2.	Meeting Date/Time	Enter date and time of meeting.
3.	Meeting Name	Enter name of meeting.
4.	Meeting Location	Enter location of meeting.
5.	Facilitator	Enter the name and position of the meeting facilitator.
6.	Attendees	List the personnel who need to attend the meeting.
7.	Notes	List a summary of decisions and action items addressed in the meeting.
8.	Prepared By Date/Time	Enter name and title of the person preparing the form. Enter date (month, day, year) and time prepared (24-hour clock).

1. Incident Name	2. Operational Period (Date / Time) From: To:	EXECUTIVE SUMMARY
3. Operations		
4. Environmental		
5. Planning		
6. Other		
7. Prepared by	Date / Time	
EXECUTIVE SUMMARY		June 2000

EXECUTIVE SUMMARY

Purpose. The Executive Summary communicates significant response issues during the current operational period, summarizing the daily activities for all sections in a brief format to Senior Managers, Administrators, Senior Agency Staff, and Civic Leaders.

Preparation. The Situation Unit Leader prepares this form with input from Section Chiefs. Final authorization is provided by the Unified Command prior to dissemination outside the ICS organization.

Distribution. After authorization by the Unified Command, the Documentation Unit Leader will duplicate and post a copy on the Situation Status Display Board in the Command Post. Single copies may then be distributed to the Unified Command, Command Staff, Joint Information Center, and Section Chiefs. All completed original forms MUST be given to the Documentation Unit.

Item #	Item Title	Instructions
1.	Incident Name	Enter the name assigned to the incident.
2.	Operational Period	Enter the time interval for which the form applies. Record the start and end date and time.
3.	Operations	Operations Section Chief will summarize the tactical accomplishments for the previous operational period.
4.	Environmental	Environmental Unit Leader will summarize any significant impacts identified or mitigated during the previous operational period.
5.	Planning	Planning Section Chief will summarize the critical actions to be carried out during the next operational period.
6.	Other	Situation Unit Leader will indicate any anomalies to previous Executive Summaries, special meetings, community impacts, or items of special interest.
7.	Prepared By	Enter name and title of the person preparing the form, normally the Situation Unit Leader.
	Date/Time	Enter date (month, day, year) and time prepared (24-hour clock).

1. Incident Name		GENERAL PLAN																				
2. Prepared By		Date / Time Prepared				3. Operational Period (Date / Time)																
						From:				To:												
4. Notification (Date and time completed)		5. Response Initiation (Date and time completed)																				
6. Plan Item	Timeframe ==> (Enter days or weeks)																					
Site Characterization, Forecasts, and Analysis																						
Site Safety																						
Site Security																						
Source Stabilization, Salvage, and Lightering																						
Surveillance																						
On Water Containment and Recovery																						
Sensitive Areas / Resources at Risk																						
Alternative Response Technology																						
Shoreline Protection and Recovery																						
Wildlife Protection and Rehabilitation																						
Logistics Support																						
Response Organization																						
Communications																						
Public Information																						
Financial Management and Cost Documentation																						
NRDA and Claims																						
Training																						
Information Management																						
Restoration / Mitigation																						
Waste Management																						
Demobilization																						
June 2000												GENERAL PLAN										

GENERAL PLAN-OS

Purpose. The General Plan form displays the progress and planned start and end dates for various incident response activities. Some standard activities have been listed on the form and blank lines are provided at the bottom of the form for planning and tracking additional incident-specific activities.

Preparation. The Planning Section completes the General Plan form when requested by the Unified Command.

Distribution. The General Plan form will be given to the Unified Command and all General Staff as part of the incident summary. All completed original forms MUST be given to the Documentation Unit.

Item #	Item Title	Instructions
1.	Incident Name	Enter the name assigned to the incident.
2.	Prepared By	Enter the name of the Planning Section Chief completing the form.
3.	Date/Time	Enter the Date (month, day, year) and Time (24-hour clock) the form was prepared.
4.	Operational Period	Enter the time interval for which the form applies. Record the start and end date and time.
5.	Notification	Enter the date and time that required notifications were completed.
6.	Response Initiation Plan Item and Timeframe	Enter the date and time that the Response Initiation is completed. Enter specific dates, or day number or week number in the top row to indicate the timeframe being covered by this form. Then enter either descriptive text or shading to the right of each activity to indicate the beginning and estimated end for that activity during this incident response.

Site Safety and Health Plan ICS-208-CG (rev 9/06)

Incident Name: _____

Date/Time Prepared: _____ Operational Period: _____

Purpose. The ICS Compatible Site Safety and Health Plan is designed for safety and health personnel that use the Incident Command System (ICS). It is compatible with ICS and is intended to meet the requirements of the Hazardous Waste Operations and Emergency Response regulation (Title 29, Code of Federal Regulations, Part 1910.120). The plan avoids the duplication found between many other site safety plans and certain ICS forms. It is also in a format familiar to users of ICS. Although primarily designed for oil and chemical spills, the plan can be used for all hazard situations.

Questions on the document should be addressed to the Coast Guard Office of Incident Management and Preparedness (G-RPP).

Table of Forms

FORM NAME	FORM #	USE	REQUIRED	OPTIONAL	ATTACHED
Emergency Safety and Response Plan	A	Emergency response phase (uncontrolled)	X		
Site Safety Plan	B	Post-emergency phase (stabilized, cleanup)	X		
Site Map	C	Post-emergency phase map of site and hazards	X		
Emergency Response Plan	D	Part of Form B, to address emergencies	X		
Exposure Monitoring Plan	E	Exposure monitoring Plan to monitor exposure	X		
Air Monitoring Log	E-1	To log air monitoring data	X*		
Personal Protective Equipment	F	To document PPE equipment and procedures	X*		
Decontamination	G	To document decon equipment and procedures	X*		
Site Safety Enforcement Log	H	To use in enforcing safety on site		X	
Worker Acknowledgement Form	I	To document workers receiving briefings		X	
Form A Compliance Checklist	J	To assist in ensuring HAZWOPER compliance		X	
Form B Compliance Checklist	K	To assist in ensuring HAZWOPER compliance		X	
Drum Compliance Checklist	L	To assist in ensuring HAZWOPER compliance		X	
Other:					

* Required only if function or equipment is used during a response

EMERGENCY SAFETY and RESPONSE PLAN	1. Incident Name	2. Date/Time Prepared	3. Operational Period	4. Attachments: Attach MSDS for each Chemical:											
5. <u>Organization</u> IC/UC:	Safety:	Entry Team:	Backup Team:	Decon Team:											
	Div/Group Supv:														
6.a. <u>Physical Hazards and Protection</u>	6.b. Confined Space <input type="checkbox"/> Noise <input type="checkbox"/> Heat Stress <input type="checkbox"/> Cold Stress <input type="checkbox"/> Electrical <input type="checkbox"/> Animal/Plant/Insect <input type="checkbox"/> Ergonomic <input type="checkbox"/> Ionizing Rad <input type="checkbox"/> Slips/Trips/Falls <input type="checkbox"/> Struck by <input type="checkbox"/> Water <input type="checkbox"/> Violence <input type="checkbox"/> Excavation <input type="checkbox"/> Biomedical waste and/or needles <input type="checkbox"/> Fatigue <input type="checkbox"/> Other (specify)														
6.c. Tasks & Controls	6d Entry Permit	6.e. Ventilate	6f. Hearing Protection	6g. Shoes (type)	6.h. Hard Hats	6i. Clothing (cold wx)	6j. Life Jacket	6l. Work/ Rest (hrs)	6.m. Fluids (amt/time)	6.n. Signs & Barricade	6.p. Fall Protect	6.q. Post Guards	6.r. Flash Protect	6.s. Work Gloves	6.t. Other
7.a. Agent	7.b. Hazards			7.c. Target Organs			7.d. Exposure Routes	7.f. PPE		7.g. Type of PPE					
	Explosive <input type="checkbox"/>	Radioactive <input type="checkbox"/>	Eyes <input type="checkbox"/>	Nose <input type="checkbox"/>	Skin <input type="checkbox"/>	Ears <input type="checkbox"/>	Inhalation <input type="checkbox"/>	Face Shield <input type="checkbox"/>							
	Flammable <input type="checkbox"/>	Carcinogen <input type="checkbox"/>	Central Nervous System <input type="checkbox"/>				Absorption <input type="checkbox"/>	Eyes <input type="checkbox"/>							
	Reactive <input type="checkbox"/>	Oxidizer <input type="checkbox"/>	Respiratory <input type="checkbox"/>	Throat <input type="checkbox"/>				Ingestion <input type="checkbox"/>	Gloves <input type="checkbox"/>						
	Biomedical <input type="checkbox"/>	Corrosive <input type="checkbox"/>	Lungs <input type="checkbox"/>	Heart <input type="checkbox"/>	Liver <input type="checkbox"/>				Inner Suit <input type="checkbox"/>						
	Toxic <input type="checkbox"/>	Specify Other: <input type="checkbox"/>	Kidney <input type="checkbox"/>	Blood <input type="checkbox"/>	Lungs <input type="checkbox"/>				Splash Suit <input type="checkbox"/>						
			Circulatory <input type="checkbox"/>	Gastrointestinal <input type="checkbox"/>				Membrane <input type="checkbox"/>	Level A Suit <input type="checkbox"/>						
			Bone <input type="checkbox"/>	Other Specify: <input type="checkbox"/>					SCBA <input type="checkbox"/>	APR <input type="checkbox"/>					
									SAR <input type="checkbox"/>						
									Cartridges <input type="checkbox"/>						
									Fire Resistance <input type="checkbox"/>						
8. Instruments:	8.a. Action Levels	8.b. Chemical Name(s):	8.c. LEL/UEL %	8.d. Odor Thresh Ppm	8.e. Ceiling/IDLH	8.f. STEL/TLV	8.g. Flash Pt/ Ignition Pt (F or C)	8.h. Vapor Pressure (mm)	8.i. Vapor Density	8.j. Specific Gravity	8.l. Boiling Pt F or C				
O2 <input type="checkbox"/>															
CGI <input type="checkbox"/>															
Radiation <input type="checkbox"/>															
Total HCs <input type="checkbox"/>															
Colorimetric <input type="checkbox"/>															
Thermal <input type="checkbox"/>															
Other <input type="checkbox"/>															

EMERGENCY SAFETY and RESPONSE PLAN (Cont)	1. Incident Name	2. Date/Time Prepared	3. Operational Period	4. Attachments: Attach MSDS for each Chemical
9. <u>Decontamination:</u> Instrument Drop Off <input type="checkbox"/> Outer Boots/Glove Removal <input type="checkbox"/> Suit/Gloves/Boot Disposal <input type="checkbox"/>	Suit Wash <input type="checkbox"/> Decon Agent: Water <input type="checkbox"/> Other <input type="checkbox"/> Specify:	Bottle Exchange <input type="checkbox"/> Outer Suit Removal <input type="checkbox"/> Inner Suit Removal <input type="checkbox"/> SCBA/Mask Removal <input type="checkbox"/>	SCBA/Mask Rinse <input type="checkbox"/> Inner Glove Removal <input type="checkbox"/> Work Clothes Removal <input type="checkbox"/> Body Shower <input type="checkbox"/>	Intervening Steps <input type="checkbox"/> Specify:
10. <u>Site Map.</u> Include: Work Zones, Locations of Hazards, Security Perimeter, Places of Refuge, Decontamination Line, Evacuation Routes, Assembly Point, Direction of North <input type="checkbox"/> Attached, <input type="checkbox"/> Drawn Below:				
11.a. <u>Potential Emergencies:</u> Fire <input type="checkbox"/> Explosion <input type="checkbox"/> Other <input type="checkbox"/>	11.b. Evacuation Alarms: Horn <input type="checkbox"/> # Blasts <input type="checkbox"/> Bells <input type="checkbox"/> #Rings <input type="checkbox"/> Radio Code <input type="checkbox"/> Other:	11.c. Emergency Prevention and Evacuation Procedures: Safe Distance:		
12. a. <u>Communications:</u> Radio <input type="checkbox"/> Phone <input type="checkbox"/> Other <input type="checkbox"/>	12.b. Command #:	12.c. Tactical #:	12.d. Entry #:	
13.a. <u>Site Security:</u> Personnel Assigned	13.b. Procedures:		13.c. Equipment:	
14.a. <u>Emergency Medical:</u> Personnel Assigned	14.b. Procedures:		14.c. Equipment:	
15. <u>Prepared by:</u>	16. <u>Date/Time Briefed:</u>		ICS-208-CG SSP-A Page 2. (rev 9/06): Page ____ of ____	

EMERGENCY SAFETY AND RESPONSE PLAN (ICS-208-CG SSP-A)

Purpose: The Emergency Safety and Response Plan provides the Safety Officer and ICS personnel a plan for safeguarding 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.* It is also intended to meet the requirements of the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulation, Title 29 Code of Federal Regulations Part 1910.120.

Preparation: The Safety Officer 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 ICS-208-CG SSP-G need not be completed if this form is used. When the operation proceeds into the post-emergency phase (site stabilized and cleanup operations begun) forms ICS-208-CG SSP-B and ICS-208-CG 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-201.

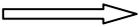
Distribution: The Emergency Safety and Response Plan completed by the Safety Officer is forwarded to the Planning Section Chief. Copies are made and attached to the Assignment List(s) (ICS Form 204). The Operations Section Chief, Directors, Supervisors or Leaders get a copy of the plan. They must ensure it is available on site for all personnel to review. The Safety Officer is responsible for ensuring that the Emergency Site Safety and Response Plan properly addresses the hazards of the operation. The Safety Officer 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 Safety Officer 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	Chemical/Agent	List the chemicals involved in the response. Chemicals may be listed numerically. Check off the hazards, potential health effects, pathway of dispersion, and exposure route of the chemical. Numbers corresponding to the chemical may be entered into the check blocks to differentiate. Check off the 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 (2). List the physical parameters of the chemicals. Use a separate form for additional chemicals monitored.

EMERGENCY SAFETY AND RESPONSE PLAN (FORM ICS-208-CG SSP-A) (Instructions Continued)

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 Map	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 or frequencies for the command, tactical and 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.

CG ICS SITE SAFETY PLAN (SSP) HAZARD ID/EVAL/CONTROL	1. Incident Name	2. Date/Time Prepared	3. Operational Period	4. Safety Officer (include method of contact)
5. Supervisor/Leader	6. Location and Size of Site	7. Site Accessibility Land <input type="checkbox"/> Water <input type="checkbox"/> Air <input type="checkbox"/> Comments:	8. For Emergencies Contact:	9. Attachments: Attach MSDS for each Chemical
10.a. Job Task/Activity	10.b. Hazards* 	10.c. Potential Injury & Health Effects	10.d. Exposure Routes	10.e. <u>Controls:</u> Engineering, Administrative, PPE
			Inhalation <input type="checkbox"/> Absorption <input type="checkbox"/> Ingestion <input type="checkbox"/> Injection <input type="checkbox"/> Membrane <input type="checkbox"/> <input type="checkbox"/>	
			Inhalation <input type="checkbox"/> Absorption <input type="checkbox"/> Ingestion <input type="checkbox"/> Injection <input type="checkbox"/> Membrane <input type="checkbox"/> <input type="checkbox"/>	
			Inhalation <input type="checkbox"/> Absorption <input type="checkbox"/> Ingestion <input type="checkbox"/> Injection <input type="checkbox"/> Membrane <input type="checkbox"/> <input type="checkbox"/>	
			Inhalation <input type="checkbox"/> Absorption <input type="checkbox"/> Ingestion <input type="checkbox"/> Injection <input type="checkbox"/> Membrane <input type="checkbox"/> <input type="checkbox"/>	
			Inhalation <input type="checkbox"/> Absorption <input type="checkbox"/> Ingestion <input type="checkbox"/> Injection <input type="checkbox"/> Membrane <input type="checkbox"/> <input type="checkbox"/>	
11. Prepared By:	12. Date/Time Briefed:	* HAZARD LIST: Physical/Safety, Toxic, Explosion/Fire, Oxygen Deficiency, Ionizing Radiation, Biological, Biomedical, Electrical, Heat Stress, Cold Stress, Ergonomic, Noise, Cancer, Dermatitis, Drowning, Fatigue, Vehicle, & Diving		ICS-208-CG SSP-B (rev 9/06): Page _____ of _____

SITE SAFETY PLAN (FORM ICS-208-CG SSP-B)

Purpose: The Site Safety Plan provides the Safety Officer 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. ICS-208-CG SSP-B is intended to meet the requirements of the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulation, Title 29 Code of Federal Regulations Part 1910.120.

Preparation: The Safety Officer 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-scene hazards with support from the Safety Officer 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 Safety Officer may choose to use the Emergency Safety and Response Plan (ICS-208-CG SSP-A) in place of the Site Safety Plan. For large incidents, ICS-208-CG SSP-B compliments the Incident Action Plan (IAP). For smaller incidents, ICS-208-CG SSP-B compliments ICS Form 201. The Safety Officer is encouraged to use the HAZWOPER Compliance Checklist (Form ICS-208-CG SSP-K) to ensure the IAP 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 Safety Officer is 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 and make on site amendments specific to their operation. They must also ensure it is available on site for all personnel to review. The Safety Officer provides personnel from his/her staff to assist in the detailed site characterization. The Safety Officer is responsible for ensuring that the Site Safety Plan for each assignment properly addresses the hazards of the assignment. The Safety Officer must ensure that the safety plans on site are consistent. The Safety Officer 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.
5	Group/Division Supv 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 Emergencies 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	Date/Time Briefed:	Enter the date/time the document was briefed to the appropriate workers and by whom.

CG ICS SSP: SITE MAP	1. Incident Name	2. Date/Time Prepared	3. Operational Period	4. Safety Officer (include method of contact)
5. Supervisor/Leader	6. Location and Size of Site	7. Site Accessibility Land <input type="checkbox"/> Water <input type="checkbox"/> Air <input type="checkbox"/> Comments:	8. For Emergencies Contact:	9. <u>Include</u> : - Work Zones - Security Perimeter - Decontamination Line - Locations of Hazards - Places of Refuge - Evacuation Routes
10. Sketch of Site: <input type="checkbox"/> Attached. <input type="checkbox"/> Drawn Here				
11. Prepared By:	12. Date/Time Briefed:	HAZARD LIST: Physical/Safety, Toxic, Explosion/Fire, Oxygen Deficiency, Ionizing Radiation, Biological, Biomedical, Electrical, Heat Stress, Cold Stress, Ergonomic, Noise, Cancer, Dermatitis, Drowning, Fatigue, Vehicle, & Diving		ICS-208-CG SSP-C (rev 9/06): Page _____ of _____

SITE MAP FOR SITE SAFETY PLAN (ICS-208-CG SSP-C)

Purpose: The Site Map for the Site Safety Plan is required by Title 29 Code of Federal Regulations Part 1910.120. It provides in 1 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 Safety Officer, his/her staff or by ICS field 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 (ICS-208-CG 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 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	Site Accessibility	Check the block(s) if the site is accessible by land, water, air, etc.
8	For Emergencies 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	Sketch of Site	Sketch of site for work. May attach map or chart.
10	Prepared by	Enter the name and position of the person completing the worksheet.
11	Date/Time Briefed:	Enter the date/time the document was briefed to the appropriate workers and by whom.

CG ICS SSP: EMERGENCY RESPONSE PLAN	1. Incident Name	2. Date/Time Prepared	3. Operational Period	4. Safety Officer (include method of contact)
5. Supervisor/Leader	6. Location and Size of Site	7. For Emergencies Contact:		8. Attachments: INCLUDE ICS FORM 206 and EMT Medical Response Procedures
9. Emergency Alarm (sound and location)	10. Backup Alarm (sound and location)	11. Emergency Hand Signals	12. Emergency Personal Protective Equipment Required:	
13. Emergency Notification Procedures		14. Places of Refuge (also see site map form 208B)	15. Emergency Decon and Evacuation Steps	16. Site Security Measures
17. Prepared By:	18. Date/Time Briefed:	HAZARD LIST: Physical/Safety, Toxic, Explosion/Fire, Oxygen Deficiency, Ionizing Radiation, Biological, Biomedical, Electrical, Heat Stress, Cold Stress, Ergonomic, Noise, Cancer, Dermatitis, Drowning, Fatigue, Vehicle, & Diving		ICS-208-CG SSP-D (rev 9/06) Page ____ of ____

EMERGENCY RESPONSE PLAN (ICS-208-CG SSP-D)

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 ICS-208-CG SSP-B). It is also required by Title 29 Code of Federal Regulations Part 1910.120.

Preparation: The Safety Officer, his/her staff member or the Site Supervisor/Leader prepares the Emergency Response Plan. A copy of the Medical Plan (ICS Form 206) must always be attached to this form.

Distribution: This form must be located with Site Safety Plan (ICS-208-CG 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 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	Attachments	Enter attachments. ICS Form 206 must be included.
9	Emergency Alarm	Enter a description of the sound of the emergency alarm and it's location.
10	Backup Alarm	Enter a description of the sound of the emergency alarm and it's location.
11	Emergency Hand Signals	Enter the emergency hand signals to be used.
12	Emergency Personal Protective Equipment Required	Enter the emergency personal protective equipment 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	Date/Time Briefed:	Enter the date/time the document was briefed to the appropriate workers and by whom.

CG ICS SSP: Exposure Monitoring Plan		1. Incident Name		2. Date/Time Prepared:	3. Operational Period:		4. Safety Officer (Method of Contact):		
5. Specific Task/Operation	6. Survey Location	7. Survey Date/Time	8. Monitoring Methodology	9. Direct-Reading Instrument	10. Air Sampling	11. Hazard(s) to Monitor	12. Monitoring Duration	13. Reasons to Monitor	14. Laboratory Support for Analysis
			<input type="checkbox"/> Personal Breathing Zone <input type="checkbox"/> Area Air Monitoring <input type="checkbox"/> Dermal Exposure Monitoring <input type="checkbox"/> Biological Monitoring: <input type="checkbox"/> Blood <input type="checkbox"/> Urine <input type="checkbox"/> Other <input type="checkbox"/> Obtain bulk samples <input type="checkbox"/> Other:	<u>Model:</u> <u>Manufacturer:</u> Last Mfr <u>Calibration Date:</u>	<u>Sampling/Analysis Method:</u> <u>Collecting Media:</u> <input type="checkbox"/> Charcoal Tube <input type="checkbox"/> Silica Gel <input type="checkbox"/> 37 mm MCE Filter <input type="checkbox"/> 37 mm PVC Filter <input type="checkbox"/> Other:_____			<input type="checkbox"/> Regulatory Compliance <input type="checkbox"/> Assess current PPE adequacy <input type="checkbox"/> Validate engineering controls <input type="checkbox"/> Monitor IDLH Conditions <input type="checkbox"/> Other_____	
			<input type="checkbox"/> Personal Breathing Zone <input type="checkbox"/> Area Air Monitoring <input type="checkbox"/> Dermal Exposure Monitoring <input type="checkbox"/> Biological Monitoring: <input type="checkbox"/> Blood <input type="checkbox"/> Urine <input type="checkbox"/> Other <input type="checkbox"/> Obtain bulk samples <input type="checkbox"/> Other:	<u>Model:</u> <u>Manufacturer:</u> Last Mfr <u>Calibration Date:</u>	<u>Sampling/Analysis Method:</u> <u>Collecting Media:</u> <input type="checkbox"/> Charcoal Tube <input type="checkbox"/> Silica Gel <input type="checkbox"/> 37 mm MCE Filter <input type="checkbox"/> 37 mm PVC Filter <input type="checkbox"/> Other:_____			<input type="checkbox"/> Regulatory Compliance <input type="checkbox"/> Assess current PPE adequacy <input type="checkbox"/> Validate engineering controls <input type="checkbox"/> Monitor IDLH Conditions <input type="checkbox"/> Other_____	
			<input type="checkbox"/> Personal Breathing Zone <input type="checkbox"/> Area Air Monitoring <input type="checkbox"/> Dermal Exposure Monitoring <input type="checkbox"/> Biological Monitoring: <input type="checkbox"/> Blood <input type="checkbox"/> Urine <input type="checkbox"/> Other <input type="checkbox"/> Obtain bulk samples <input type="checkbox"/> Other:	<u>Model:</u> <u>Manufacturer:</u> Last Mfr <u>Calibration Date:</u>	<u>Sampling/Analysis Method:</u> <u>Collecting Media:</u> <input type="checkbox"/> Charcoal Tube <input type="checkbox"/> Silica Gel <input type="checkbox"/> 37 mm MCE Filter <input type="checkbox"/> 37 mm PVC Filter <input type="checkbox"/> Other:_____			<input type="checkbox"/> Regulatory Compliance <input type="checkbox"/> Assess current PPE adequacy <input type="checkbox"/> Validate engineering controls <input type="checkbox"/> Monitor IDLH Conditions <input type="checkbox"/> Other_____	
			<input type="checkbox"/> Personal Breathing Zone <input type="checkbox"/> Area Air Monitoring <input type="checkbox"/> Dermal Exposure Monitoring <input type="checkbox"/> Biological Monitoring: <input type="checkbox"/> Blood <input type="checkbox"/> Urine <input type="checkbox"/> Other <input type="checkbox"/> Obtain bulk samples <input type="checkbox"/> Other:	<u>Model:</u> <u>Manufacturer:</u> Last Mfr <u>Calibration Date:</u>	<u>Sampling/Analysis Method:</u> <u>Collecting Media:</u> <input type="checkbox"/> Charcoal Tube <input type="checkbox"/> Silica Gel <input type="checkbox"/> 37 mm MCE Filter <input type="checkbox"/> 37 mm PVC Filter <input type="checkbox"/> Other:_____			<input type="checkbox"/> Regulatory Compliance <input type="checkbox"/> Assess current PPE adequacy <input type="checkbox"/> Validate engineering controls <input type="checkbox"/> Monitor IDLH Conditions <input type="checkbox"/> Other_____	
15. Prepared By:			16. Date/Time Briefed:		HAZARD LIST: Potential Health Effects: Bruise/Lacerations, Organ Damage, Central Nervous System Effects, Cancer, Reproductive Damage, Low Back Pain, Temporary Hearing Loss, Dermatitis, Respiratory Effects, Bone Breaks, & Eye Burning				
18. Safety Officer Review:			<u>Reporting:</u> Monitoring results shall be logged in the ICS-208-CG SSP-E-1 form (Air Monitoring Log) and attached as part of a current Site Safety Plan and Incident Action Plan. Significant Exposures shall be immediately addressed to the IC and General Staff for immediate correction.					ICS-208-CG SSP-E (rev 9/06) Page ____ of ____	

EXPOSURE MONITORING PLAN (FORM ICS-208-CG SSP-E)

Purpose: The Exposure Monitoring Plan provides plan of monitoring conducted during an incident. The plan is a supplement to the Site Safety Plan (ICS-208-CG SSP-B). It is only required when performing monitoring operations.

Preparation: The Safety Officer, his/her staff member or the Site Supervisor/Leader prepares the Exposure Monitoring Plan. If there is a decision not to monitor during a response, the reasons must be stated clearly in the Site Safety Plan (ICS-208-CG SSP-B).

Distribution: This form must be located with Site Safety Plan (ICS-208-CG 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 assignment applies.
4	Safety Officer	Enter the name of the Safety Officer and means of contact.
5	Specific Task / Operation	Enter specific task or operation.
6	Survey Location	Enter the location to be monitored.
7	Survey Date/Time	Enter the date/time for the monitoring teams to survey.
8	Monitoring Methodology	Enter/Check the monitoring method to be used.
9	Direct-Reading Instrument	Enter the instrument model, manufacturer, last calibration date.
10	Air Sampling	Enter Air Sampling analysis method
11	Hazards to Monitor	Enter the hazards to monitor
12	Monitoring Duration	Enter duration of monitoring
13	Reasons to Monitor	Enter Reasons to Monitor
14	Laboratory Support for Analysis	Enter Laboratory Support needed for analysis of samples
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.
17	Safety Officer Review	The Safety Officer must review and sign the form.

CG ICS SSP: AIR MONITORING LOG	1. Incident Name	2. Date/Time Prepared	3. Operational Period	4. Safety Officer (include method of contact)	
5. Site Location	6. Hazards of Concern	7. Action Levels (include references):		8. <u>Weather</u> : Temperature: Precipitation: Wind: Relative Humidity: Cloud Cover:	
9.a. Instrument, ID Number Calibrated? Indicate below.	9.b. Monitoring Person Name(s)	9.c. Results (units)	9.d. Location	9.f. Time	9.g. Interferences and Comments
10. Safety Officer Review:		<u>Potential Health Effects</u> : Bruise/Lacerations, Organ Damage, Central Nervous System Effects, Cancer, Reproductive Damage, Low Back Pain, Temporary Hearing Loss, Dermatitis, Respiratory Effects, Bone Breaks, & Eye Burning			ICS-208-CG SSP-E-1 (rev 9/06): Page ____ of ____

DAILY AIR MONITORING LOG (FORM ICS-208-CG SSP-E-1)

Purpose: The Exposure Monitoring Log provides documentation of air monitoring conducted during a spill. The log is a supplement to the Site Safety Plan (ICS-208-CG 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 not to monitor during a spill, the reasons must be stated clearly in the Site Safety Plan (ICS-208-CG SSP-B).

Distribution: The Daily Air Monitoring Log when completed is copied and forwarded to the Site Safety Officer who must review and sign the form. The original form 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 action levels/readings for the monitoring teams.
8	Weather	Enter weather information. Ensure units of measure are listed.
9	Air Monitoring Data	Enter the instrument type and number, persons monitoring, results with appropriate units, location of reading, time of reading and interferences and comments.
10	Safety Officer Review	The Safety Officer must review and sign the form.

CG ICS SSP: PERSONAL PROTECTIVE EQUIPMENT	1. Incident Name	2. Date/Time Prepared	3. Operational Period	4. Safety Officer (include method of contact)
	5. Supervisor/Leader	6. Location and Size of Site	7. Hazards Addressed:	8. For Emergencies Contact:
	9. Equipment:			10. References Consulted:
11. Inspection Procedures:	12. Donning Procedures:	13. Doffing Procedures:	14. Limitations and Precautions (include maximum stay time in PPE):	
15. Prepared By:	16. Date/Time Briefed:	<u>Potential Health Effects:</u> Bruise/Lacerations, Organ Damage, Central Nervous System Effects, Cancer, Reproductive Damage, Low Back Pain, Temporary Hearing Loss, Dermatitis, Respiratory Effects, Bone Breaks, Eye Burning		ICS-208-CG SSP-F: (Rev 9/06) Page _____ of _____

PERSONAL PROTECTIVE EQUIPMENT (ICS-208-CG SSP-F)

Purpose: The Personal Protective Equipment form is a list of personal protective equipment to be used in operations. The listing of personal protective equipment is required by Title 29 Code of Federal Regulations Part 1910.120.

Preparation: The Personal Protective Equipment form is completed by the Site Safety Officer, or his/her staff. Personal protective equipment common to all ICS Operations personnel is addressed first. Jobs with unique personal protective equipment requirements (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 operations, unless addressed elsewhere by Standard Operating Procedures.

Distribution: This form must be located with Site Safety Plan (ICS-208-CG 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 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	Hazard(s) Addressed:	Enter the hazards that need to be safeguarded.
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 to form.
10	References consulted	List the references used in making the selection for PPE.
11	Inspection Procedures	Enter the procedures for inspecting the Personal Protective Equipment 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. If 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 detractor and other factors.
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.

CG ICS SSP: DECONTAMINATION	1. Incident Name	2. Date/Time Prepared	3. Operational Period	4. Safety Officer (include method of contact)
5. Supervisor/Leader	6. Location and Size of Site	7. For Emergencies Contact:		8. Hazard(s) Addressed:
9. Equipment:				10. References Consulted:
11. Contamination Avoidance Practices:	12. Decon Diagram: <input type="checkbox"/> Attached, <input type="checkbox"/> Drawn below			13. Decon Steps
14. Prepared By:	15. Date/Time Briefed:	Potential Health Effects: Bruise/Lacerations, Organ Damage, Central Nervous System Effects, Cancer, Reproductive Damage, Low Back Pain, Temporary Hearing Loss, Dermatitis, Respiratory Effects, Bone Breaks, Eye Burning		ICS-208-CG SSP-G (rev 9/06): Page ____ of ____

DECONTAMINATION (ICS-208-CG SSP-G)

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 Site Safety Officer, a 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 Site Safety Plan (ICS-208-CG 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 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.
9	Equipment	Enter the decontamination equipment needed for the site. If pre-designed Safe Work Practices are used, indicate here and attach to this 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 here 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	Date/Time Briefed:	Enter the date/time the document was briefed to the appropriate workers and by whom.

CG ICS SSP: ENFORCEMENT LOG	1. Incident Name	2. Date/Time Prepared	3. Operational Period	4. Safety Officer (include method of contact)	
5. Supervisor/Leader	6. For Emergencies Contact:			7. Attachments:	
8.a. Job Task/Activity	8.b. Hazards	8.c. Deficiency	8.d. Action Taken	8.e. Safety Plan Amended?	8 f. Signature of Supervisor/Leader
9. Prepared By:	10. Date/Time Briefed:	HAZARD LIST: Physical/Safety, Toxic, Explosion/Fire, Oxygen Deficiency, Ionizing Radiation, Biological, Biomedical, Electrical, Heat Stress, Cold Stress, Ergonomic, Noise, Cancer, Dermatitis, Drowning, Fatigue, Vehicle, & Diving			ICS-208-CG SSP-H (rev 9/06): Page ____ of ____

SITE SAFETY ENFORCEMENT LOG (ICS-208-CG SSP-H)

Purpose: The Site Safety Plan Enforcement Log is used to help enforce safety during an incident.

Preparation: The Safety Officer 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 Plan enforcement log when completed is delivered to the Safety Officer. The Safety Officer can use the form to amend the Site Safety Plan (ICS-208-CG 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.
6	For Emergencies Contact	Enter the name and way to contact the individual who handles emergencies.
7	Attachments	List any attached supporting documentation.
8 a	Job/Task Activity	Enter only those Job Task/activities for which a deficiency is noted.
8 b	Hazards	Enter the hazard not being sufficiently addressed.
8 c	Deficiency	Enter the deficiency.
8 d	Action Taken	Enter the corrective action taken to address the deficiency.
8 e	Safety Plan Amended?	Enter whether the on site safety plan was amended.
8 f	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	Date/Time Briefed:	Enter the date/time the document was briefed to the appropriate workers and by whom.

WORKER ACKNOWLEDGEMENT FORM (ICS-208-CG SSP-I)

Purpose: The Worker Acknowledgement form is used to document workers who have received safety briefings.

Preparation: Those personnel responsible for conducting 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 Safety Officer 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	Attachments	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 Presented	Enter the date of the briefing.
7	Time Presented	Enter the time of the briefing.
8	Worker Name, Signature, Date and Time	Workers receiving the briefing print their name, sign, date and enter the time they acknowledge the briefing.

CG ICS SSP: Emergency Safety & Response Plan 1910.120 Compliance Checklist (Form A)	1. Incident Name	2. Date/Time Prepared	3. Operational Period	4. Site Supervisor/Leader	5. Location of Site
6.a. Cite: 1910.120	6.b. Requirement(sections that duplicate or explain are omitted)		6.c. ICS Form	6.d. Check	6.e. Comments
(q)(1)	Is the plan in writing?	SSP-A	<input type="checkbox"/>		
(1)	Is the plan available for inspection by employees?	N/A	<input type="checkbox"/>	Performance based	
(q)(2)(i)	Does the plan address pre-emergency planning and coordination?	SSP-A	<input type="checkbox"/>		
(ii)	Does it address personnel roles?	SSP-A	<input type="checkbox"/>		
(ii)	Does it address lines of authority?	SSP-A	<input type="checkbox"/>		
(ii)	Does it address communications?	SSP-A	<input type="checkbox"/>		
(iii)	Does it address emergency recognition?	SSP-A	<input type="checkbox"/>		
(iii)	Does it address emergency prevention?	SSP-A	<input type="checkbox"/>		
(iv)	Does it identify safe distances?	SSP-A	<input type="checkbox"/>		
(iv)	Does it address places of refuge?	SSP-A	<input type="checkbox"/>		
(v)	Does it address site security and control?	SSP-A	<input type="checkbox"/>		
(vi)	Does it identify evacuation routes?	SSP-A	<input type="checkbox"/>		
(vi)	Does it identify evacuation procedures?	SSP-A	<input type="checkbox"/>		
(vii)	Does it address decontamination?	SSP-A	<input type="checkbox"/>		
(viii)	Does it address medical treatment and first aid?	SSP-A	<input type="checkbox"/>		
(ix)	Does it address emergency alerting procedures?	SSP-A	<input type="checkbox"/>		
(ix)	Does it address emergency response procedures	SSP-A	<input type="checkbox"/>		
(x)	Was the response critiqued?	N/A	<input type="checkbox"/>	Performance based	
(xi)	Does it identify Personal Protection Equipment?	SSP-A	<input type="checkbox"/>		
(xi)	Does it identify emergency equipment?	SSP-A	<input type="checkbox"/>		
(q)(3)(ii)	All the hazardous substances identified to the extent possible?	N/A	<input type="checkbox"/>	Performance based	
(ii)	All the hazardous conditions identified to the extent possible?	N/A	<input type="checkbox"/>	Performance based	
(ii)	Was site analysis addressed?	N/A	<input type="checkbox"/>	Performance based	
(ii)	Were engineering controls addressed?	N/A	<input type="checkbox"/>	Performance based	
(ii)	Were exposure limits addressed?	N/A	<input type="checkbox"/>	Performance based	
(ii)	Were hazardous substance handling procedures addressed?	N/A	<input type="checkbox"/>	Performance based	
(iii)	Is the PPE appropriate for the hazards identified?	N/A	<input type="checkbox"/>	Performance based	
(iv)	Is respiratory protection worn when inhalation hazards present?	N/A	<input type="checkbox"/>	Performance based	
(v)	Is the buddy system used in the hazard zone?	N/A	<input type="checkbox"/>	Performance based	
(vi)	Are backup personnel on standby?	N/A	<input type="checkbox"/>	Performance based	
(vi)	Are advanced first aid support personnel standing by?	N/A	<input type="checkbox"/>	Performance based	
(vii)	Has the ICS designated safety official been identified?	SSP-A	<input type="checkbox"/>		
(vii)	Has the Safety Official evaluated the hazards?	N/A	<input type="checkbox"/>	Performance based	
(viii)	Can the Safety Official communicate with IC immediately?	N/A	<input type="checkbox"/>	Performance based	
(ix)	Are appropriate decontamination procedures implemented?	N/A	<input type="checkbox"/>	Performance based	

Emergency Safety & Response Plan Compliance Checklist Form A (ICS-208-CG SSP-J)

Purpose: The Emergency Safety and Response Plan 1910.120 Compliance Checklist is to ensure that incident response operations are in compliance with Title 29, Code of Federal Regulations Part 1910.120, Hazardous Waste Operations and Emergency Response. It also identifies how form ICS-208-CG SSP-J can be used to satisfy the HAZWOPER requirements. This checklist is an optional form.

Preparation: The Emergency Safety and Response Plan 1910.120 Compliance Checklist is completed by the Safety Officer or his/her staff as frequently as necessary whenever the Safety Officer wants to ensure regulatory compliance. It is best used in conjunction with the Site Safety Plan Enforcement Log (ICS-208-CG SSP-H). Many of the requirements are performance based and are best evaluated on scene by the Safety Officer or his/her staff.

Distribution: The Safety Officer should maintain The Emergency Safety and Response Plan (ERP) 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.
4	Supervisor/Leader	The Supervisor/Leader who receives this form will enter their name here.
5	Location of Site	Enter the site location.
6 a	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.
6 b	Requirement	This lists the requirement in a question format. Some require documentation or some form of action.
6 c	ICS Form	Lists those requirements covered by ICS-208-CG SSP-A.
6 d	Check Block	Enter the check if the site satisfies the requirement.
6 f	Comments	This provides additional information on the requirement. The user may also enter comments.
7	Prepared by	Enter the name and position of the person completing the worksheet.

CG ICS SSP: 1910.120 COMPLIANCE CHECKLIST (Form B)	1. Incident Name	2. Date/Time Prepared	3. Operational Period	4. Site Supervisor/Leader	5. Location of Site
6.a. Cite: 1910.120	6.b. Requirement(sections that duplicate or explain are omitted)	6.c. ICS Form	6.d. Check	6.e. Comments	
1910.120 (b)(1)(ii)(A)	Organizational structure?	203	<input type="checkbox"/>		
(B)	Comprehensive workplan?	IAP	<input type="checkbox"/>	Incident Action Plan	
(C)	Site Safety Plan?	SSP-B	<input type="checkbox"/>		
(D)	Safety and health training program?	N/A	<input type="checkbox"/>	Responsibility of each employer	
(E)	Medical surveillance program?	N/A	<input type="checkbox"/>	Responsibility of each employer	
(F)	Employer SOPs?	N/A	<input type="checkbox"/>	Responsibility of each employer	
(G)	Written program related to site activities?	N/A	<input type="checkbox"/>		
(b)(1)(iii)	Site excavation meets shored or slope requirements in 1926?	N/A	<input type="checkbox"/>		
(b)(2)(i)(D)	Lines of communication?	201 203 205	<input type="checkbox"/>		
(b)3(iv)	Training addressed?	N/A	<input type="checkbox"/>	Responsibility of each employer	
(v)-(vi)	Information and medical monitoring addressed?	N/A	<input type="checkbox"/>	Responsibility of each employer	
(b)4(i)	Site Safety Plan kept on site?	N/A	<input type="checkbox"/>		
(ii)(A)	Safety and health hazard analysis conducted?	N/A	<input type="checkbox"/>		
(B)	Properly trained employees assigned to right jobs?	N/A	<input type="checkbox"/>		
(C)	Personnel Protective Equipment issues addressed?	SSP-F	<input type="checkbox"/>		
(E)	Frequency and types of air monitoring addressed?	SSP-E	<input type="checkbox"/>		
(F)	Site control measures in place?	SSP-B	<input type="checkbox"/>		
(G)	Decontamination procedures in place?	SSP-G	<input type="checkbox"/>		
(H)	Emergency Response Plan in place?	SSP-D	<input type="checkbox"/>		
(I)	Confined space entry procedures?	SSP-B	<input type="checkbox"/>		
(J)	Spill containment program	SSP-B	<input type="checkbox"/>		
(iii)	Pre-entry briefings conducted?	SSP-I	<input type="checkbox"/>		
(iv)	Site Safety Plan effectiveness evaluated?	SSP-H	<input type="checkbox"/>		
(c)(1)	Site characterization done?	N/A	<input type="checkbox"/>		
(c)(2)	Preliminary evaluation done by qualified person?	N/A	<input type="checkbox"/>		
(c)(3)	Hazard identification performed?	SSP-B	<input type="checkbox"/>		
(c)(4)(i)	Location and size of site identified?	SSP-B	<input type="checkbox"/>		
(ii)	Response activities, job tasks identified?	SSP-B	<input type="checkbox"/>		
(iii)	Duration of tasks identified?	SSP-B	<input type="checkbox"/>	Operational period	
(iv)	Site topography and accessibility addressed?	SSP-C	<input type="checkbox"/>		
(v)	Health and safety hazards addressed?	SSP-B	<input type="checkbox"/>		
(vi)	Dispersion pathways addressed?	SSP-B	<input type="checkbox"/>		
(vii)	Status and capabilities of medical emergency response teams?	206	<input type="checkbox"/>		
(c)(5)(i)(iv)	Chemical protective clothing addressed and properly selected?	SSP-F	<input type="checkbox"/>		
(ii)	Respiratory protection addressed?	SSP-B and F	<input type="checkbox"/>		
(iii)	Level B used for unknowns?	N/A	<input type="checkbox"/>		

CG ICS SSP: 1910.120 COMPLIANCE CHECKLIST Form B (cont)	1. Incident Name	2. Date/Time Prepared	3. Operational Period		
6.a. Cite: 1910.120	6.b. Requirement(sections that duplicate or explain are omitted)	6.c. ICS Form	6.d. Check	6.e. Comments	
1910.120 (c)(6)(i)	Monitoring for ionization conducted?	SSP-E	<input type="checkbox"/>		
(ii)	Monitoring conducted for IDLH conditions?	SSP-E	<input type="checkbox"/>		
(iii)	Personnel looking out for dangers of IDLH environments?	N/A	<input type="checkbox"/>		
(iv)	Ongoing air monitoring program in place?	SSP-E	<input type="checkbox"/>		
(c)(7)	Employees informed of potential hazard occurrence?	SSP-B	<input type="checkbox"/>		
(c)(8)	Properties of each chemical made aware to employees?	SSP-B	<input type="checkbox"/>		
(d)(1)	Appropriate site control procedures in place?	IAP, SSP-B	<input type="checkbox"/>		
(d)(2)	Site control program developed during planning stages?	IAP, SSP-B	<input type="checkbox"/>		
(d)(3)	Site map, work zones, alarms, communications addressed?	IAP, SSP-B	<input type="checkbox"/>		
(g)(1)(i)	Engineering, admin controls considered?	SSP-B	<input type="checkbox"/>		
(iii)	Personnel not rotated to reduce exposures?	N/A	<input type="checkbox"/>		
(g)(5)(i)	PPE selection criteria part of employer's program?	N/A	<input type="checkbox"/>	Responsibility of employer	
(ii)	PPE use and limitations identified?	SSP-F	<input type="checkbox"/>		
(iii)	Work mission duration identified?	SSP-F	<input type="checkbox"/>		
(iv)	PPE properly maintained and stored?	N/A	<input type="checkbox"/>	Responsibility of employer	
(vi)	Are employees properly trained and fitted with PPE?	N/A	<input type="checkbox"/>	Responsibility of employer	
(vii)	Are donning and doffing procedures identified?	SSP-F	<input type="checkbox"/>		
(viii)	Are inspection procedures properly identified?	SSP-F	<input type="checkbox"/>		
(ix)	Is a PPE evaluation program in place?	SSP-F	<input type="checkbox"/>		
(h) (3)	Periodic monitoring conducted?	SSP-E	<input type="checkbox"/>		
(k)(2)(i)	Have decontamination procedures been established?	SSP-G	<input type="checkbox"/>		
(ii)	Are procedures in place for contamination avoidance?	SSP-G	<input type="checkbox"/>		
(iii)	Is personal clothing properly decontaminated prior to leaving the site?	SSP-G	<input type="checkbox"/>		
(iv)	Are decontamination deficiencies identified and corrected?	SSP-H	<input type="checkbox"/>		
(k)(3)	Are decontamination lines in the proper location?	SSP-C	<input type="checkbox"/>		
(k)(4)	Are solutions/equipment used in decon properly disposed of?	N/A	<input type="checkbox"/>		
(k)(6)	Is protective clothing and equipment properly secured?	N/A	<input type="checkbox"/>		
(k)(7)	If cleaning facilities are used, are they aware of the hazards?	N/A	<input type="checkbox"/>		
(k)(8)	Have showers and change rooms provided, if necessary?	N/A	<input type="checkbox"/>		
(l)(1)(iii)	Are provisions for reporting emergencies identified?	SSP-D	<input type="checkbox"/>		
(iv)	Are safe distances and places of refuge identified?	SSP-B and C	<input type="checkbox"/>		
(v)	Site security and control addressed in emergencies?	SSP-D	<input type="checkbox"/>		
(vi)	Evacuation routes and procedures identified?	SSP-D	<input type="checkbox"/>		
(vii)	Emergency decontamination procedures developed?	SSP-D	<input type="checkbox"/>		
(ix)	Emergency alerting and response procedures identified?	SSP-D	<input type="checkbox"/>		
(x)	Response teams critiqued and followup performed?	SSP-H	<input type="checkbox"/>		
(xi)	Emergency PPE and equipment available?	SSP-D	<input type="checkbox"/>		

CG ICS SSP: 1910.120 COMPLIANCE CHECKLIST Form B (cont)	1. Incident Name	2. Date/Time Prepared	3. Operational Period		
6.a. Cite:	6.b. Requirement(sections that duplicate or explain are omitted)		6.c. ICS Form	6.d. Check	6.e. Comments
1910.120 (1)(3)(i)	Emergency notification procedures identified?		SSP-D	<input type="checkbox"/>	
(ii)	Emergency response plan separate from Site Safety Plan?		SSP-D	<input type="checkbox"/>	
(iii)	Emergency response plan compatible with other plans?		SSP-D	<input type="checkbox"/>	
(iv)	Emergency response plan rehearsed regularly?		SSP-D	<input type="checkbox"/>	
(v)	Emergency response plan maintained and kept current?		SSP-H	<input type="checkbox"/>	
1910.165 (b)(2)	Can alarms be seen/heard above ambient light and noise levels?		N/A	<input type="checkbox"/>	
(b)(3)	Are alarms distinct and recognizable?		N/A	<input type="checkbox"/>	
(b)(4)	Are employees aware of the alarms and are they accessible?		SSP-D	<input type="checkbox"/>	
(b)(5)	Are emergency phone numbers, radio frequencies clearly posted?		206	<input type="checkbox"/>	
(b)(6)	Signaling devices in place where there are 10 or more workers?		IAP	<input type="checkbox"/>	
(c)(1)	Are alarms like steam whistles, air horns being used?		IAP	<input type="checkbox"/>	
(d)(3)	Are backup alarms available?		IAP	<input type="checkbox"/>	
(m)	Are areas adequately illuminated?		IAP	<input type="checkbox"/>	
(n)(1)(i)	Is an adequate supply of potable water available?		IAP	<input type="checkbox"/>	
(ii)	Are drinking water containers equipped with a tap?		IAP	<input type="checkbox"/>	
(iii)	Are drinking water containers clearly marked?		IAP	<input type="checkbox"/>	
(iv)	Is a drinking cup receptacle available and clearly marked?		IAP	<input type="checkbox"/>	
(n)(2)(i)	Are non-potable water containers clearly marked?		IAP	<input type="checkbox"/>	
(n)(3)(i)	Are their sufficient toilets available?		IAP	<input type="checkbox"/>	
(n)(4)	Have food handling issues been addressed?		IAP	<input type="checkbox"/>	
(n)(6)	Have adequate wash facilities been provided outside hazard zone?		IAP	<input type="checkbox"/>	
(n)(7)	If response is greater than 6 months, have showers been provided?		IAP	<input type="checkbox"/>	
7. Prepared By:			ICS-208-CG SSP-K (rev 9/06): Page 3. Page ____ of ____		

HAZWOPER 1910.120 COMPLIANCE CHECKLIST FORM B (ICS-208-CG SSP-K)

Purpose: The HAZWOPER 1910.120 Compliance Checklist is to ensure that incident response operations are in compliance with Title 29, Code of Federal Regulations Part 1910.120, Hazardous Waste Operations and Emergency Response. It also identifies how other ICS forms can be used to satisfy the HAZWOPER requirements. This is an optional form.

Preparation: The HAZWOPER 1910.120 Compliance Checklist is completed by the Safety Officer or his/her staff as frequently as necessary whenever the Safety Officer wants to ensure regulatory compliance. It is best used in conjunction with the Site Safety Plan Enforcement Log (ICS-208-CG 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 Safety Officer should ensure the IAP addresses them. Other requirements are performance based and are best evaluated on scene by the Safety Officer or his/her staff.

Distribution: The HAZWOPER 1910.120 Compliance Checklist should be maintained by the Safety Officer.

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 the site location.
6.a.	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.
6.b.	Requirement	This lists the requirement in a question format. Some require documentation or some form of action.
6.c.	ICS Form	Lists those ICS Forms that cover the requirement. IAP designations means it should be covered in IAP, it does not guarantee it is covered. The Safety Officer must ensure this.
6.d.	Check Block	Enter the check if the site satisfies the requirement.
6.e.	Comments	This provides information on where else the requirement may be met. The user may also enter comments.
7	Prepared by	Enter the name and position of the person completing the worksheet.

CG ICS SSP: 1910.120 DRUM COMPLIANCE CHECKSHEET	1. Incident Name	2. Date/Time Prepared	3. Operational Period	4. Safety Officer (include method of contact)	
5. Supervisor/Leader	6. Location and Size of Site	7. For Emergencies Contact:		8. Note: <u>tanks and vaults</u> should also be treated in the same manner as described below [1910.120(j)(9)]. Many can also pose confined space hazards.	
9.a. Cite: 1910.120 (Cites that duplicate or explain requirements are omitted)	9.b. Requirement			9.c. Check	9.d. Comments
(j)(1)(ii)	Drums meet DOT, OSHA, EPA regs for waste they contain, including shipment?			<input type="checkbox"/>	
(iii)	Drums inspected and integrity ensured prior to movement?			<input type="checkbox"/>	
(iii)	Or drums moved to an accessible location (staging area) prior to movement?			<input type="checkbox"/>	
(iv)	Unlabelled drums treated as unknown until properly identified and labeled?			<input type="checkbox"/>	
(v)	Site activities organized to minimize drum handling?			<input type="checkbox"/>	
(vi)	Employers properly warned about the hazards of moving and handling drums?			<input type="checkbox"/>	
(vii)	Suitable overpack drums are available for addressing leaking and ruptured drums?			<input type="checkbox"/>	
(viii)	Leaking materials from drums properly contained?			<input type="checkbox"/>	
(ix)	Are drums that cannot be moved, emptied of contents with transfer equipment?			<input type="checkbox"/>	
(x)	Are suspect buried drums surveyed with underground detection system?			<input type="checkbox"/>	
(xi)	Are soil and covering material above buried drums removed with caution?			<input type="checkbox"/>	
(xii)	Is the proper extinguishing equipment on scene to control incipient fires?			<input type="checkbox"/>	
(j)(2)(i)	Are airlines on supplied air systems protected from leaking drums?			<input type="checkbox"/>	
(ii)	Are employees at a safe distance, using remote equipment, when handling explosive drums?			<input type="checkbox"/>	
(iii)	Are explosive shields in place to protect workers opening explosive drums?			<input type="checkbox"/>	
(iv)	Is response equipment positioned behind shields when shields are used?			<input type="checkbox"/>	
(v)	Are non-sparking tools used in flammable or potentially flammable atmospheres?			<input type="checkbox"/>	
(vi)	Are drums under extreme pressure opened slowly & workers protected by shields/distance?			<input type="checkbox"/>	
(vii)	Are workers prohibited from standing and working on drums?			<input type="checkbox"/>	
(j)(3)	Is the drum handling equipment positioned and operated to minimize sources of ignition?			<input type="checkbox"/>	
(j)(5)(i)	For shock sensitive drums, have all non-essential employees been evacuated?			<input type="checkbox"/>	
(ii)	For shock sensitive drums: is handling equipment provided with shields to protect workers?			<input type="checkbox"/>	
(iii)	Are alarms that announce start/finish of explosive drum handling actions in place?			<input type="checkbox"/>	
(iv)	Are continuous communications in place between the drum handling site & command post?			<input type="checkbox"/>	
(v)	Are drums under pressure properly controlled for prior to handling?			<input type="checkbox"/>	
(vi)	Are drums containing packaged laboratory wastes treated as shock sensitive?			<input type="checkbox"/>	
(j)(6)(i)	Are lab packs opened by trained and experienced personnel?			<input type="checkbox"/>	
(ii)	Are lab packs showing crystallization treated as shock sensitive?			<input type="checkbox"/>	
(j)(8)(ii-iii)	Are drum staging areas manageable with marked access and egress?			<input type="checkbox"/>	
(iv)	Is bulking of drums conducted only after drum contents have been properly identified?			<input type="checkbox"/>	
10. Prepared By:				Form SSP-L (rev 9/06) Page ____ of ____	

HAZWOPER 1910.120 DRUM COMPLIANCE CHECKLIST (ICS-208-CG SSP-L)

Purpose: The HAZWOPER 1910.120 Drum Compliance Checklist is to ensure that incident response operations are in compliance with Title 29, Code of Federal Regulations Part 1910.120, Hazardous Waste Operations and Emergency Response whenever drums are encountered during an incident. This is an optional form.

Preparation: The HAZWOPER 1910.120 Drum Compliance Checklist is completed by the Safety Officer or his/her staff as frequently as necessary whenever the Safety Officer wants to ensure regulatory compliance. It is best used in conjunction with the Site Safety Plan Enforcement Log (ICS-208-CG SSP-H). The 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 Safety Officer or his/her staff.

Distribution: The HAZWOPER 1910.120 Drum Compliance Checklist should be maintained by the Safety Officer.

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.
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	Note	<u>Tanks and vaults</u> should also be treated in the same manner as described in the checklist (1910.120((j)(9)).
9.a.	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.
9.b.	Requirement	This lists the requirement in a question format. Some require documentation or some form of action.
9.c.	Check Block	Enter the check if the site satisfies the requirement.
9.d.	Comments	This provides information on where else the requirement may be met. The user may also enter comments.
10	Prepared by	Enter the name and position of the person completing the worksheet.

Notification Drill Form

[Click to view the file - Notification Drill Form 15 3 2012 7 7 28.pdf](#)

KINDER-MORGAN ENERGY PARTNERS, L.P.

NOTIFICATION DRILL

Purpose:

Periodic notification drills are required by federal and state regulations for designated members of the emergency response team to demonstrate the effectiveness of notification procedures in the ICP.

Drill Details:

Location: _____

Date/Time Started: _____

Person Conducting Drill: _____

Telephone Number: _____

Individual Contacted: _____

Time: _____

Contact Method

Individual Contacted: _____

Time: _____

Contact Method

Individual Contacted: _____

Time: _____

Contact Method

Individual Contacted: _____

Time: _____

Contact Method Notes:

Distribution: Original - Originating Location

Copy - Manager - Emergency Response Programs

When complete, retain this form for five (5) years.

February 2009

APPENDIX G

STATE REQUIREMENTS

- G.1 [There are no additional requirements required by the State.](#)

G.1 There are no additional requirements required by the State.

APPENDIX H

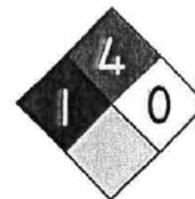
MATERIAL SAFETY DATA SHEET(S)

Material Safety Data Sheets will be attached separately and maintained for each area within the response zone.

Condensate

PlanFiles/PlanContent/KMCCOSRP/MSDS - Stabilized Natural Gas
Condensate_13_6_2012_15_22_43.pdf

[Click to view the file - MSDS - Stabilized Natural Gas Condensate 13 6 2012 15 22 43.pdf](#)



MATERIAL SAFETY DATA SHEET
Stabilized Natural Gas Condensate
1. CHEMICAL PRODUCT and COMPANY INFORMATION

Hawk Field Services
1908 Laurent, Suite 330
Victoria, Texas 77901
Phone: 361-574-3500

Information: 1-(888)-820-2607
CHEMTREC: (800) 424-9300

SYNONYMS: Natural Gasoline, Drips Gas, Raw Liquid Mix, Aliphatic and Aromatic Hydrocarbon Mixture.
PRODUCT DESCRIPTION: Amber to clear liquid with hydrocarbon odor.

2. COMPOSITION AND INFORMATION ON INGREDIENTS

Component Name	CAS Number	Exposure Limits ppm		Concentration wt %
Propane	74-98-6	OSHA PEL	1000	0-1
I-Butane	75-28-5	OSHA PEL	800	0-3
N-Butane	106-97-8	OSHA PEL	800	0-5
Isopentane	78-78-4	OSHA PEL	N/A	0-10
N-Pentane	109-66-0	OSHA PEL	1000	0-10
N-Hexane	110-54-3	OSHA PEL	500	0-5
Hexanes Plus (C6+)		OSHA PEL	N/A	60-80
Ethyl Benzene	100-41-4	OSHA PEL	100	0-1
Mixed Xylenes (M-,O-,P-)	1330-20-7	OSHA PEL	100	0-5
Benzene	71-43-2	OSHA PEL	1	0-1

3. HAZARDS IDENTIFICATION

Note: Petrohawk has not tested this product to determine its specific health hazards. The information provided in this section includes health hazard information on the product components.

INHALATION	May cause central nervous system effects, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure and death.
EYES	Contact may cause mild to moderate irritation.
SKIN	Repeated or prolonged exposure may cause irritation and/or defat skin.
INGESTION	Harmful or fatal if swallowed. Pulmonary aspiration hazard if swallowed and vomiting occurs.

4. FIRST AID MEASURES	
INHALATION	Immediately remove person to fresh air area. If not breathing, give artificial respiration and call 911 to obtain prompt medical attention.
EYE CONTACT	Flush eyes with large amounts of tepid water for at least 15 minutes. If irritation persists, seek medical attention by calling 911.
SKIN CONTACT	Wash with soap and water until no odor remains. If redness or swelling develops seek medical attention by calling 911. Remove soaked clothing. Wash clothing before reuse.
INGESTION	DO NOT INDUCE VOMITING. DO NOT GIVE LIQUIDS. Obtain immediate medical assistance. Small amounts that accidentally enter mouth should be rinsed out until the taste is gone.
5. FIRE FIGHTING MEASURES	
Flash Point	78 to 105 ^o F
Flammable limit in Air, % by Volume	LEL 5%v/v UEL 40%v/v
Autoignition Temperature	495 ^o F
Extinguishing Media	Foam, dry chemical powder, carbon dioxide.
General Hazard	Can easily ignite by heat, sparks, or flames. Will form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Vapors can cause dizziness or asphyxiation without warning. Vapors can be irritating if inhaled at high concentrations. Fire may produce irritating or toxic gases.
Fire Fighting Instructions	Shut off source. Allow to burn if there is no risk to surroundings; otherwise use extinguishing media. Cool exposed tank with water spray. Wear self-contained breathing apparatus in confined spaces. Firefighters should use self contained breathing apparatus and protective clothing.
6. ACCIDENTAL RELEASE MEASURES	
Prevent ignition, stop leaks and ventilate area. Contain liquids. Dispose of cleanup materials according to local, state and federal rules. Keep upwind of leak. Enter area only with protective equipment. See Petrohawk Incidence response reporting guidance.	
7. HANDLING AND STORAGE	
Keep away from heat, sparks, arcs, and flames. Consult NFPA and OSHA standards. Observe all protective measures to avoid excessive exposure.	
8. EXPOSURE CONTROLS AND PERSONAL PROTECTION	
Inhalation	Respiratory protection is required.
Eye Protection	If the possibility exists of encountering sprayed material, then chemical goggles or face shield should be worn
Skin Protection	Impervious insulated gloves recommended to protect against contact with product. If contact is anticipated, wear impervious insulated protective gear.
Ventilation	Work in well ventilated areas. Use non-sparking tools where liquids or vapors from the condensate may be generated at flammable concentrations.

9. PHYSICAL AND CHEMICAL PROPERTIES				
Physical State:	Liquid	Freezing Point	NA	
Boiling Point	Variable	Vapor Density (Air=1)	3.0-5.0	
RVP	5-10 psia @ 100F	pH	N/A	
Solubility	Negligible	Evaporation Rate	<1	
% Volatile	50-90%	Odor	Hydrocarbon	
Specific Gravity	0.7-0.8	Appearance	Colored	
10. STABILITY AND REACTIVITY				
Stability	Stable			
Hazardous Polymerization	Will not occur			
Conditions to Avoid	Keep material away heat, sparks, flames, static charge. Avoid contact with strong oxidizers such as nitrates and perchlorates. These will increase risk of fire or explosion.			
Hazardous Decomposition Products	Carbon monoxide and asphyxiants.			
11. TOXICOLOGICAL INFORMATION				
Refer to Section 3				
12. ECOLOGICAL INFORMATION				
No data available				
13. DISPOSAL CONSIDERATIONS				
Use water spray and/or vent to atmosphere to disperse vapors. Sample and test contaminated soil for benzene, ethyl benzene, toluene, and xylenes (BTEX). Dispose of according to federal, state and local regulations.				
14. TRANSPORT INFORMATION				
Gas, liquid, DOT Number - UN 1203				
15. REGULATORY INFORMATION				
EPA SARA TITLE III				
<i>Section 302 EPCRA Extremely Hazardous Substances</i>				
Product Component	CAS Number	Wt%	RQ	
None				
<i>Section 311/312 Hazard Categorization</i>				
Acute	Chronic	Fire	Pressure	Reactive
Yes	Yes	Yes	No	No
<i>Section 313 EPCRA Toxic Substances</i>				
None				

16. OTHER INFORMATION

This information relates only to the specific material designated and may not be valid for such materials used in combination with any other materials or in any process. The information provided is to the best of the company's knowledge and believed accurate and reliable as of the time of publication. However, no representation, warranty, or guarantee is made as to the accuracy, reliability or completeness. It is the user's responsibility to satisfy themselves as to the suitability and completeness of such information for his own particular use.

GLOSSARY OF TERMS AND ACRONYMS

[Glossary](#)

[Acronyms](#)

GLOSSARY OF TERMS

This glossary contains definitions of terms that will be used frequently during the course of response operations.

Activate: The process of mobilizing personnel and/or equipment within the response organization to engage in response operations.

Activator: An individual in the response organization whose responsibilities include notifying other individuals or groups within the organization to mobilize personnel and/or equipment.

Adverse Weather: The weather conditions that will be considered when identifying response systems and equipment in a response plan for the applicable operating environment. Factors to consider include significant wave height, ice, temperature, weather - related visibility, and currents within the Captain of the Port (COTP) zone in which the systems or equipment are intended to function.

Agency Representative: Individual assigned to an incident from an agency who has been delegated full authority to make decisions on all matters affecting that agency's participation in response operations.

Area Committee: As defined by Sections 311(a)(18) and (j)(4) of CWA, as amended by OPA, means the entity appointed by the President consisting of members from Federal, State, and local agencies with responsibilities that include preparing an Area Contingency Plan for the area designated by the President. The Area Committee may include ex-officio (i.e., non-voting) members (e.g., industry and local interest groups).

Area Contingency Plan: As defined by Sections 311(a)(19) and (j)(4) of CWA, as amended by OPA, means the plan prepared by an Area Committee, that in conjunction with the NCP, shall address the removal of a discharge including a worst-case discharge and the mitigation or prevention of 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.

Average Most Probable Discharge: A discharge of the lesser of 50 barrels or 1% of the volume of the worst case discharge.

Barrel (bbl): Measure of space occupied by 42 U.S. gallons at 60 degrees Fahrenheit.

Bioremediation Agents: Means microbiological cultures, enzyme additives, or nutrient additives that are deliberately introduced into an oil discharge and that will significantly increase the rate of biodegradation to mitigate the effects of the discharge.

Boom: A piece of equipment or a strategy used to either contain free floating oil to a confined area or protect an uncontaminated area from intrusion by oil.

Booming Strategies: Strategic techniques which identify the location and quantity of boom required to protect certain areas. These techniques are generated by identifying a potential spill source and assuming certain conditions which would affect spill movement on water.

Bulk: Material that is stored or transported in a loose, unpackaged liquid, powder, or granular form capable of being conveyed by a pipe, bucket, chute, or belt system.

Chemical Agents: Means those elements, compounds, or mixtures that coagulate, disperse, dissolve, emulsify, foam, neutralize, precipitate, reduce, solubilize, oxidize, concentrate, congeal, entrap, fix, make the pollutant mass more rigid or viscous, or otherwise facilitate the mitigation of deleterious effects or the removal of the oil pollutant from the water. Chemical agents include biological additives, dispersants, sinking agents, miscellaneous oil spill control agents, and burning agents, but do not include solvents.

Clean-up Contractor: Persons contracted to undertake a response action to clean up a spill.

Cleanup: For the purposes of this document, cleanup refers to the removal and/or treatment of oil, hazardous substances, and/or the waste or contaminated materials generated by the incident. Cleanup includes restoration of the site and its natural resources.

Coastal Waters: For the purpose of classifying the size of discharges, means the waters of the coastal zone except for the Great Lakes and specified ports and harbors on inland rivers.

Coastal Zone: As defined for the purpose of the NCP, means all United States waters 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 term coastal 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.

Coast Guard District Response Group (DRG): As provided for by CWA sections 311(a)(20) and (j)(3), means the entity established by the Secretary of the department in which the USCG is operating within each USCG district and shall consist of: the combined USCG personnel and equipment, including firefighting equipment, of each port within the district; additional prepositioned response equipment; and a district response advisory team.

Command: The act of controlling manpower and equipment resources by virtue of explicit or delegated authority.

Command Post: A site located at a safe distance from the spill site where response decisions are made, equipment and manpower deployed, and communications handled. The Incident Commander and the On-Scene Coordinators may direct the on-scene response from this location.

Communications Equipment: Equipment that will be utilized during response operations to maintain communication between the Company employees, contractors, Federal/State/Local agencies. (Radio/ telephone equipment and links)

Containment Boom: A flotation/freeboard device, made with a skirt/curtain, longitudinal strength member, and ballast unit/weight designed to entrap and contain the product for recovery.

Contingency Plan: A document used by (1) federal, state, and local agencies to guide their planning and response procedures regarding spills of oil, hazardous substances, or other emergencies; (2) a document used by industry as a response plan to spills of oil, hazardous substances, or other emergencies occurring upon their vessels or at their facilities.

Contract or Other Approved Means: For OPA 90, a written contract with a response contractor; certification by the facility owner or operator that personnel and equipment are owned, operated, or under the direct control of the facility, and available within the stipulated times; active membership in a local or regional oil spill removal organization; and/or the facility's own equipment.

Critical Areas to Monitor: Areas which if impacted by spilled oil may result in threats to public safety or health.

Cultural Resources: Current, historic, prehistoric and archaeological resources which include deposits, structures, ruins, sites, buildings, graves, artifacts, fossils, or other objects of antiquity which provide information pertaining to the historical or prehistorical culture of people in the state as well as to the natural history of the state.

Damage Assessment: The process of determining and measuring damages and injury to the human environment and natural resources, including cultural resources. Damages include differences between the conditions and use of natural resources and the human environment that would have occurred without the incident, and the conditions and use that ensued following the incident. Damage assessment includes planning for restoration and determining the costs of restoration.

Decontamination: The removal of hazardous substances from personnel and their equipment necessary to prevent adverse health effects.

Discharge: Any spilling, leaking, pumping, pouring, emitting, emptying, or dumping.

Dispersants: Means those chemical agents that emulsify, disperse, or solubilize oil into the water column or promote the surface spreading of oil slicks to facilitate dispersal of the oil into the water column.

Diversions Boom: A floatation/freeboard device, made with a skirt/curtain, longitudinal strength member, and ballast unit/weight designed to deflect or divert the product towards a pick up point, or away from certain areas.

Drinking Water Supply: As defined by Section 101(7) of CERCLA, means any raw or finished water source that is or may be used by a public water system (as defined in the Safe Drinking Water Act) or as drinking water by one or more individuals.

EM: Emergency Management. Serves as the focal point for senior management support of an incident.

Economically Sensitive Areas: Those areas of explicit economic importance to the public that due to their proximity to potential spill sources may require special protection and include, but are not limited to: potable and industrial water intakes; locks and dams; and public and private marinas.

Emergency Management: The personnel identified to staff the organizational structure identified in a response plan to manage response plan implementation.

Emergency Service: Those activities provided by state and local government to prepare for and carry out any activity to prevent, minimize, respond to, or recover from an emergency.

Environmentally Sensitive Areas: Streams and water bodies, aquifer recharge zones, springs, wetlands, agricultural areas, bird rookeries, endangered or threatened species (flora and fauna) habitat, wildlife preserves or conservation areas, parks, beaches, dunes, or other areas protected or managed for its natural resource value.

Facility: Either an onshore facility or an offshore facility and includes, but is not limited to structures, equipment, and appurtenances thereto, used or capable of being used to transfer oil to or from a vessel or a public vessel. A facility includes federal, state, municipal, and private facilities.

Facility Operator: The person who owns, operates, or is responsible for the operation of the facility.

Federal Fund: The spill liability trust fund established under OPA.

Federal Regional Response Team: The federal response organization (consisting of representatives from selected federal and state agencies) which acts as a regional body responsible for planning and preparedness before an oil spill occurs and providing advice to the FOSC in the event of a major or substantial spill.

Federal Response Plan (FRP): Means the agreement signed by 25 federal departments and agencies in April 1987 and developed under the authorities of the Earthquake Hazards Reduction Act of 1977 and the Disaster Relief Act of 1974, as amended by the Stafford Disaster Relief Act of 1988.

First Responders, First Response Agency: A public health or safety agency (e.g., fire service or police department) charged with responding to a spill during the emergency phase and alleviating immediate danger to human life, health, safety, or property.

Handle: To transfer, transport, pump, treat, process, store, dispose of, drill for, or produce.

Harmful Quantity Of Oil: The presence of oil from an unauthorized discharge in a quantity sufficient either to create a visible film or sheen upon or discoloration of the surface of the water or a shoreline, tidal flat, beach, or marsh, or to cause a sludge or emulsion to be deposited beneath the surface of the water or on a shoreline, tidal flat, beach, or marsh.

Hazardous Material: Any nonradioactive solid, liquid, or gaseous substance which, when uncontrolled, may be harmful to humans, animals, or the environment. Including but not limited to substances otherwise defined as hazardous wastes, dangerous wastes, extremely hazardous wastes, oil, or pollutants.

Hazardous Substance: Any substance designed as such by the Administrator of the EPA pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act; regulated pursuant to Section 311 of the Federal Water Pollution Control Act, or discharged by the SERC.

Hazardous Waste: Any solid waste identified or listed as a hazardous waste by the Administrator of the EPA pursuant to the federal Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA), 42 U.S.C., Section 6901, et seq as amended. The EPA Administrator has identified the characteristics of hazardous wastes and listed certain wastes as hazardous in Title 40 of the Code of Federal Regulations, Part 261, Subparts C and D respectively.

HAZMAT: Hazardous materials or hazardous substances, exposure to which may result in adverse effects on health or safety of employees.

HAZWOPER: Hazardous Waste Operations and Emergency Response Regulations published by OSHA to cover worker safety and health aspects of response operations.

Heat Stress: Dangerous physical condition caused by over exposure to extremely high temperatures.

Hypothermia: Dangerous physical condition caused by over exposure to freezing temperatures.

Incident: Any event that results in a spill or release of oil or hazardous materials. Action by emergency service personnel may be required to prevent or minimize loss of life or damage to property and/or natural resources.

Incident Briefing Meeting: Held to develop a comprehensive, accurate, and up-to-date understanding of the incident, nature of status of control operations, and nature and status of response operations; ensure the adequacy of control and response operations; begin to organize control and response operations; and prepare for interactions with outside world.

Incident Command Post (ICP): That location at which all primary command functions are executed.

Incident Command System (ICS): The combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure, with responsibility for the management of assigned resources at an incident.

Incident Commander (IC): The one individual in charge at any given time of an incident. The Incident Commander will be responsible for establishing a unified command with all on-scene coordinators.

Indian Tribe: As defined in OPA section 1001, means any Indian tribe, band, nation, or other organized group or community, but not including any Alaska Native regional or village corporation, which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians and has governmental authority over lands belonging to or controlled by the Tribe.

Initial Cleanup: Remedial action at a site to eliminate acute hazards associated with a spill. An initial clean-up action is implemented at a site when a spill of material is an actual or potentially imminent threat to public health or the environment, or difficulty of cleanup increases significantly without timely remedial action. All sites must be evaluated to determine whether initial cleanup is total cleanup, however, this will not be possible in all cases due to site conditions (i.e., a site where overland transport or flooding may occur).

Initial Notification: The process of notifying necessary the Company personnel and Federal/ State/Local agencies that a spill has occurred, including all pertinent available information surrounding the incident.

Initial Response Actions: The immediate actions that are to be taken by the spill observer after detection of a spill.

Inland Area: The area shoreward of the boundary lines defined in 46 CFR part 7, except that in the Gulf of Mexico, it means the area shoreward of the lines of demarcation (COLREG lines) as defined in §80.740 through 80.850 of this chapter. The inland area does not include the Great Lakes.

Inland Waters: State waters not considered coastal waters; lakes, rivers, ponds, streams, underground water, et. al.

Inland Zone: 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.

Interim Storage Site: A site used to temporarily store recovered oil or oily waste until the recovered oil or oily waste is disposed of at a permanent disposal site. Interim storage sites include trucks, barges, and other vehicles, used to store waste until the transport begins.

Lead Agency: The government agency that assumes the lead for directing response activities.

Lead Federal Agency: The agency which coordinates the federal response to incident on navigable waters. The lead federal agencies are:

- **U.S. Coast Guard:** Oil and chemically hazardous materials incidents on navigable waters.
- **Environmental Protection Agency:** Oil and chemically hazardous materials incidents on inland waters.

Lead State Agency: The agency which coordinates state support to federal and/or local governments or assumes the lead in the absence of federal response.

Loading: Transfer from Facility to vehicle.

Local Emergency Planning Committee (LEPC): A group of local representatives appointed by the State Emergency Response Commission (SERC) to prepare a comprehensive emergency plan for the local emergency planning district, as required by the Emergency Planning and Community Right-to-know Act (EPCRA).

Local Response Team: Designated Facility individuals who will fulfill the roles determined in the oil spill response plan in the event of an oil or hazardous substance spill. They will supervise and control all response and clean-up operations.

Lower Explosive Limit: Air measurement utilized to determine the lowest concentration of vapors that support combustion. This measurement must be made prior to entry into a spill area.

Marinas: Small harbors with docks, services, etc. for pleasure craft.

Medium Discharge: Means a discharge greater than 2,100 gallons (50 Bbls) and less than or equal to 36,000 gallons (85+ Bbls) or 10% of the capacity of the largest tank, whichever is less and not to exceed the WCD.

National Contingency Plan: The plan prepared under the Federal Water Pollution Control Act (33 United State Code §1321 et seq) and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 United State Code § 9601 et seq), as revised from time to time.

National Pollution Funds Center (NPFC): Means the entity established by the Secretary of Transportation whose function is the administration of the Oil Spill Liability Trust Fund (OSLTF). Among the NPFC's duties are: providing appropriate access to the OSLTF for federal agencies and states for removal actions and for federal trustees to initiate the assessment of natural resource damages; providing appropriate access to the OSLTF for claims; and coordinating cost recovery efforts.

National Response System (NRS): Is the mechanism for coordinating response actions by all levels of government in support of the OSC. The NRS is composed of the NRT, RRTs, OSC, Area Committees, and Special Teams and related support entities.

National Strike Force (NSF): Is a special team established by the USCG, including the three USCG Strike Teams, the Public Information Assist Team (PIAT), and the National Strike Force Coordination Center. The NSF is available to assist OSCs in their preparedness and response duties.

National Strike Force Coordination Center (NSFCC): Authorized as the National Response Unit by CWA section 311(a)(23) and (j)(2), means the entity established by the Secretary of the department in which the USCG is operating at Elizabeth City, North Carolina, with responsibilities that include administration of the USCG Strike Teams, maintenance of response equipment inventories and logistic networks, and conducting a national exercise program.

Natural Resource: Land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to or otherwise controlled by the state, federal government, private parties, or a municipality.

Navigable Waters: As defined by 40 CFR 110.1 means the waters of the United States, including the territorial seas. The term includes:

All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide;

Interstate waters, including interstate wetlands;

All other waters such as interstate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, and wetlands, the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

- that are or could be used by interstate or foreign travelers for recreational or other purposes;
- from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; and
- that are used or could be used for industrial purposes by industries in interstate commerce.

All impoundments of waters otherwise defined as navigable waters under this section;

Tributaries of waters identified in paragraphs (a) through (d) of this definition, including adjacent wetlands; and

Wetlands adjacent to waters identified in paragraphs (a) through (e) of this definition: Provided, that waste treatment systems (other than cooling ponds meeting the criteria of this paragraph) are not waters of the United States.

Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act jurisdiction remains with EPA.

Nearshore Area: For OPA 90, the area extending seaward 12 miles from the boundary lines defined in 46 CFR Part 7, except in the Gulf of Mexico. In the Gulf of Mexico, it means the area extending seaward 12 miles from the line of demarcation defined in §80.740 - 80.850 of title 33 of the CFR.

Non-persistent or Group I Oil: A petroleum-based oil that, at the time of shipment, consists of hydrocarbon fractions:

1. At least 50% of which by volume, distill at a temperature of 340 degrees C (645 degrees F);
2. At least 95% of which volume, distill at a temperature of 370 degrees C (700 degrees F).

Ocean: The open ocean, offshore area, and nearshore area as defined in this subpart.

Offshore area: The area up to 38 nautical miles seaward of the outer boundary of the nearshore area.

Oil or Oils: Naturally occurring liquid hydrocarbons at atmospheric temperature and pressure coming from the earth, including condensate and natural gasoline, and any fractionation thereof, including, but not limited to, crude oil, petroleum gasoline, fuel oil, diesel oil, oil sludge, oil refuse, and oil mixed with wastes other than dredged spoil. Oil does not include any substance listed in Table 302.4 of 40 CFR Part 302 adopted August 14, 1989, under Section 101(14) of the federal comprehensive environmental response, compensation, and liability act of 1980, as amended by P. L. 99-499.

Oil Spill Liability Trust Fund: Means the fund established under section 9509 of the Internal Revenue Code of 1986 (26 U.S.C. 9509).

Oily Waste: Product contaminated waste resulting from a spill or spill response operations.

On-Scene Coordinator (OSC): Means the federal official predesignated by the EPA or the USCG to coordinate and direct response under subpart D.

On-site: Means the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of a response action.

Open Ocean: Means the area from 38 nautical miles seaward of the outer boundary of the nearshore area, to the seaward boundary of the exclusive economic zone.

Owner or Operator: Any person, individual, partnership, corporation, association, governmental unit, or public or private organization of any character.

Persistent Oil: A petroleum-based oil that does not meet the distillation criteria for a non-persistent oil. For the purposes of this Appendix, persistent oils are further classified based on specific gravity as follows:

1. Group II specific gravity less than .85
2. Group III specific gravity between .85 and less than .95
3. Group IV specific gravity .95 and including 1.0
4. Group V specific gravity greater than 1.0

Plan Holder: The plan holder is the industry transportation related facility for which a response plan is required by federal regulation to be submitted by a vessel or facility's owner or operator.

Post Emergency Response: The portion of a response performed after the immediate threat of a release has been stabilized or eliminated and cleanup of the sites has begun.

Post Emergency: The phase of response operations conducted after the immediate threat of the release has been stabilized, and cleanup operations have begun.

Primary Response Contractors or Contractors: An individual, company, or cooperative that has contracted directly with the plan holder to provide equipment and/or personnel for the containment or cleanup of spilled oil.

Qualified Individual (QI): That person or entity who has authority to activate a spill cleanup contractors, act as liaison with the "On-Scene Coordinator" and obligate funds required to effectuate response activities.

Recreation Areas: Publicly accessible locations where social/sporting events take place.

Regional Response Team (RRT): The Federal response organization (consisting of representatives from selected Federal and State agencies) which acts as a regional body responsible for overall planning and preparedness for oil and hazardous materials releases and for providing advice to the OSC in the event of a major or substantial spill.

Remove or Removal: As defined by section 311(a)(8) of the CWA, refers to containment and removal of oil or hazardous substances from the water and shorelines or the taking of such other actions as may be necessary to minimize or mitigate damage to the public health or welfare (including, but not limited to, fish, shellfish, wildlife, public and private property, and shorelines and beaches) or to the environment. For the purpose of the NCP, the term also includes monitoring of action to remove discharge.

Response Activities: The containment and removal of oil from the water and shorelines, the temporary storage and disposal of recovered oil, or the taking of other actions as necessary to minimize or mitigate damage to public health or welfare, or the environment.

Response Contractors: Persons/companies contracted to undertake a response action to contain and/or clean up a spill.

Response Guidelines: Guidelines for initial response that are based on the type of product involved in the spill, these guidelines are utilized to determine clean-up methods and equipment.

Response Plan: A practical manual used by industry for responding to a spill. Its features include: (1) identifying the notifications sequence, responsibilities, response techniques, etc. in an easy to use format; (2) using decision trees, flowcharts, and checklists to insure the proper response for spills with varying characteristics; and (3) segregating information needed during the response from data required by regulatory agencies to prevent confusion during a spill incident.

Response Priorities: Mechanism used to maximize the effective use of manpower and equipment resources based upon their availability during an operational period.

Response Resources: All personnel and major items of equipment available, or potentially available, for assignment to incident tasks on which status is maintained.

Responsible Party: Any person, owner/operator, or facility that has control over an oil or hazardous substance immediately before entry of the oil or hazardous substance into the atmosphere or in or upon the water, surface, or subsurface land of the state.

Restoration: The actions involved in returning a site to its former condition.

Rivers and Canals: A body of water confined within the inland area that has a project depth of 12 feet or less, including the Intracoastal Waterway and other waterways artificially created for navigation.

Securing the Source: Steps that must be taken to stop discharge of oil at the source of the spill.

Sinking Agents: Means those additives applied to oil discharges to sink floating pollutants below the water surface.

Site Characterization: An evaluation of a cleanup site to determine the appropriate safety and health procedures needed to protect employees from identified hazards.

Site Conditions: Details of the area surrounding the facility, including shoreline descriptions, typical weather conditions, socioeconomic breakdowns, etc.

Site Safety and Health Plan: A site specific plan developed at the time of an incident that addresses:

- Safety and health hazard analysis for each operation.
- Personal protective equipment to be used.
- Training requirements for site workers.
- Medical surveillance requirements.
- Air monitoring requirements.
- Site control measures.
- Decontamination procedures.
- Emergency response procedures.
- Confined space entry procedures.

Site Security and Control: Steps that must be taken to provide safeguards needed to protect personnel and property, as well as the general public, to ensure an efficient clean-up operation.

Skimmers: Mechanical devices used to skim the surface of the water and recover floating oil. Skimmers fall into four basic categories (suction heads, floating weirs, oleophilic surface units, and hydrodynamic devices) which vary in efficiency depending on the type of oil and size of spill.

Snare Boom: Oil will adhere to the material of which this boom is made of and thus collect it.

Sorbents: Materials ranging from natural products to synthetic polymeric foams placed in confined areas to soak up small quantities of oil. Sorbents are very effective in protecting walkways, boat decks, working areas, and previously uncontaminated or cleaned areas.

Spill: An unauthorized discharge of oil or hazardous substance into the waters of the state.

Spill Observer: The first Facility individual who discovers a spill. This individual must function as the first responder and person-in-charge until relieved by an authorized supervisor.

Spill of National Significance (SONS): Means a spill which due to its severity, size, location, actual or potential impact on the public health and welfare or the environment, or the necessary response effort, is so complex that it requires extraordinary coordination of federal, state, local, and responsible party resources to contain and cleanup the discharge.

Spill Management Team: The personnel identified to staff the organizational structure identified in a response plan to manage response plan implementation.

Spill Response: All actions taken in responding to spills of oil and hazardous materials, e.g.: receiving and making notifications; information gathering and technical advisory phone calls; preparation for and travel to and from spill sites; direction of clean-up activities; damage assessments; report writing, enforcement investigations and actions; cost recovery; and program development.

Spill Response Personnel: Federal, state, local agency, and industry personnel responsible for participating in or otherwise involved in spill response. All spill response personnel will be pre-approved on a list maintained in each region.

Staging Areas: Designated areas near the spill site accessible for gathering and deploying equipment and/or personnel.

State Emergency Response Commission(SERC): A group of officials appointed by the Governor to implement the provisions of Title III of the Federal Superfund Amendments and Re-authorization Act of 1986 (SARA). The SERC approves the State Oil and Hazardous Substance Discharge Prevention and Contingency Plan and Local Emergency Response Plans.

Surface Collecting Agents: Means those chemical agents that form a surface film to control the layer thickness of oil.

Surface Washing Agent: Is any product that removes oil from solid surfaces, such as beaches and rocks, through a detergency mechanism and does not involve dispersing or solubilizing the oil into the water column.

Tanker: A self-propelled tank vessel constructed or adapted primarily to carry or hazardous material in bulk in the cargo spaces.

Tidal Current Tables: Tables which contain the predicted times and heights of the high and low waters for each day of the year for designated areas.

Trajectory Analysis: Estimates made concerning spill size, location, and movement through aerial surveillance or computer models.

Transfer: Any movement of oil to, from, or within a vessel by means of pumping, gravitation, or displacement.

Trustee: Means an official of a federal natural resources management agency designated in subpart G of the NCP or a designated state official or Indian tribe or, in the case of discharges covered by the OPA, a foreign government official, who may pursue claims for damages under section 1006 of the OPA.

Underwriter: An insurer, a surety company, a guarantor, or any other person, other than an owner or operator of a vessel or facility, that undertakes to pay all or part of the liability of an owner or operator.

Unified Command: The method by which local, state, and federal agencies and the responsible party will work with the Incident Commander to:

- Determine their roles and responsibilities for a given incident.
- Determine their overall objectives for management of an incident.
- Select a strategy to achieve agreed-upon objectives.
- Deploy resources to achieve agreed-upon objectives.

Unified or Coordinated Command Meeting: Held to obtain agreement on strategic objectives and response priorities; review tactical strategies; engage in joint planning, integrate response operations; maximize use of resources; and minimize resolve conflicts.

Volunteers: An individual who donates their services or time without receiving monetary compensation.

Waste: Oil or contaminated soil, debris, and other substances removed from coastal waters and adjacent waters, shorelines, estuaries, tidal flats, beaches, or marshes in response to an unauthorized discharge. Waste means any solid, liquid, or other material intended to be disposed of or discarded and generated as a result of an unauthorized discharge of oil. Waste does not include substances intended to be recycled if they are in fact recycled within 90 days of their generation or if they are brought to a recycling facility within that time.

Waters of the United States: See **Navigable Waters** in this Glossary.

Wetlands: Those areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include playa lakes, swamps, marshes, bogs, and similar areas such as sloughs, prairie potholes, wet meadows, prairie river overflows, mudflats, and natural ponds (40 CFR 112.2(y)).

Wildlife Rescue: Efforts made in conjunction with Federal and State agencies to retrieve, clean, and rehabilitate birds and wildlife affected by an oil spill.

Worst Case Discharge: The largest foreseeable discharge under adverse weather conditions. For facilities located above the high water line of coastal waters, a worst case discharge includes those weather conditions most likely to cause oil discharged from the facility to enter coastal waters.

ACRONYMS

AMIO	- Alien Migration Interdiction Operation
AQI	- Alternate Qualified Individual
AM	- Ante Meridiem
ACP	- Area Contingency Plan
ACP	- Area Contingency Plans
Avg.	- Average
bbl/hr	- Barrel per Hour
Br	- Branch
BLM	- Bureau of Land Management
COTP	- Captain of the Port
Ctr.	- Center
CAS Number	- Chemical Abstracts Service
CST	- Civil Support Team
CG	- Coast Guard
CFR	- Code of Federal Regulations
Cont'd	- Continued
CMT	- Crisis Management Team
DOA	- Dead on Arrival
Dept.	- Department
DOD	- Department of Defense
DENR	- Department of Environment and Natural Resources
DHS	- Department of Homeland Security
DOI	- Department of Interior
DNR	- Department of Natural Resources
DOT	- Department of Transportation
Div.	- Division
DOCL	- Documentation Unit Leader
EMS	- Emergency Management System
EM	- Emergency Manager
EOC	- Emergency Operations Center
ESA	- Endangered Species Act
EET	- Environmental Emergency Team
EDRC	- Estimated Daily Recovery Capability
EPA	- Environmental Protection Agency
ETA	- Estimated Time of Arrival
etc.	- Et Cetera
exempli gratia e.g.	- For Example
FAA	- Federal Aviation Administration
FBI	- Federal Bureau of Investigation
FOSC	- Federal On-Scene Coordinator
Ft./Sec.	- Feet/Second
FIR	- Field Investigation Report
FR	- Fire Retardant
FWD	- Forward
Freq.	- Frequency
GRP	- Group
Gru Sups.	- Group Supervisors
HAZMAT	- Hazardous Material
HAZWOPER	- Hazardous Waste Operations and Emergency Response Standard
HVAC	- Heating, Ventilating, and Air Conditioning
HEPA	- High Efficiency Particle Air Device
HF ERW	- High Frequency Electric-Resistance Weld
HLS	- Homeland Security
Hrs.	- Hours
ID NO.	- Identification Number
IAW	- In Accordance With

IAP	- Incident Action Plan
ICS	- Incident Command System
ICS	- Incident Command System
IC	- Incident Commander
IMH	- Incident Management Handbook
IMS	- Incident Management System
Info.	- Information
KM	- Kilometer
KP	- Kilometer Point
LE	- Law Enforcement
LO	- Liaison Officer
LPG	- Liquefied Petroleum Gas
LEPC	- Local Emergency Planning Committee
LRT	- Local Response Team
LSC	- Logistics Section Chief
LF ERW	- Low Frequency Electric-Resistance Weld
LEL	- Lower Explosive Limit
MSDS	- Material Safety Data Sheets
MEDEVAC'D	- Medical Evacuation
NCP	- National Contingency Plan
NEECP (CA)	- National Environmental Emergencies Contingency Plan
NFPA	- National Fire Protection Association
NIMS	- National Incident Management System
NOAA	- National Oceanographic Atmospheric Administration
NCP (U.S.)	- National Oil and Hazardous Substances Contingency Plan
NRC	- National Response Center
NRDAR	- Natural Resource Damage Assessment and Restoration
N	- No
NW	- North West
N/A	- Not Available
OSHA	- Occupational Safety & Health Administration
OSRO	- Oil Spill Removal Organization
OSRP	- Oil Spill Response Plan
OSRV	- Oil Spill Response Vessel
OSC	- On-Scene Coordinate
OSC	- Operation Section Chief
OP	- Operational Period
Op.	- Operations
OPS	- Operations
O&M	- Operations and Maintenance
OCC	- Operations Coordination Center
OV	- Organic Vapor
PPM	- Parts Per Million
PFD	- Personal Floatation Device
PPE	- Personal Protective Equipment
PHMSA	- Pipeline and Hazardous Materials Safety Administration
PSC	- Planning Section Chief
PSC	- Planning Section Chief
POC	- Point of Contact
PVC	- Polyvinyl Chloride
P.M.	- Post Meridien
PREP	- Preparedness for Response Exercise Program
Prot.	- Protection
PWSD	- Public Water Supply District
QI	- Qualified Individual
RPT	- Regional Preparedness Team
Req.	- Required
RCRA	- Resource Conservation and Recovery Act

RESL	- Resource Leader
RP	- Responsible Party
RPIC	- Responsible Party Incident Commander
Rev.	- Revision
R/W	- Right-of-Way
RWD	- Rural Water District
SAR	- Search and Rescue
SART	- Search and Rescue Transporter
SI	- Security Incident
SO	- Security Officer
SCBA	- Self Contained Breathing Apparatus
SSPs	- Site Safety Plans
SITL	- Situation Unit Leader
Spec.	- Special
SPCC	- Spill Prevention, Control, and Countermeasure
SORS	- Spilled oil Recovery System
Sq. Ft.	- Square Foot
STAM	- Staging Area Manager
SERC	- State Emergency Response Center
SERC	- State Emergency Response Commission
SOSC	- State On-Scene Coordinator
SOR	- Statutory Orders and Regulations
SCADA	- Supervisory Control and Data Acquisition
TOC	- Table of Contents
TSD	- Temporary Storage and Disposal
TSC	- Temporary Storage Capacity
id est, I.E.	- That is
TBA	- To be Assigned
TSB	- Transportation Safety Board
TWIC	- Transportation Worker Identification Credential
UC	- Unified Command
UN Number	- United Nations
US	- United States
USCG	- United States Coast Guard
USN	- US Navy Supervisor Salvage
Vsl.	- Vessel
VOSS	- Vessel of Opportunity Skimmer System
VOC	- Volatile Organic Compound
Vol.	- Volume
W	- West
WCD	- Worst Case Discharge
Y	- Yes

FACILITY SPECIFIC ACRONYMS

ERL	Emergency Response Line
TCEQ	Texas Commission on Environmental Quality
TGLO	Texas General Land Office
TRRC	Texas Railroad Commission

REGULATORY CROSS REFERENCE

[DOT/PHMSA 49 CFR Part 194 Cross Reference](#)

DOT/PHMSA 49 CFR PART 194		
§ 194.105	BRIEF DESCRIPTION	LOCATION IN PLAN
(a)	... determine the worst case discharge ... provide methodology, including calculations, used to arrive at the volume.	App B
(b)	The worst case discharge is the largest volume, in barrels, of the following:	----
(b)(1)	... maximum release time in hours, plus the maximum shutdown response time in hours, multiplied by the maximum flow rate expressed in barrels per hour, plus the largest line drainage volume after shutdown of the line section(s) ...; or	App B
(b)(2)	The largest foreseeable discharge for the line section(s) within a response zone, expressed in barrels, based on the maximum historic discharge, if one exists, adjusted for any subsequent corrective or preventative action taken; or	App B
(b)(3)	If the response zone contains one or more breakout tanks, the capacity of the single largest tank or battery of tanks within a single secondary containment system, adjusted for the capacity or size of the secondary containment system, expressed in barrels.	App B
(b)(4)	Operators may claim prevention credits for breakout tank secondary containment and other specific spill prevention measures as follows:...	App B
§ 194.107	BRIEF DESCRIPTION	LOCATION IN PLAN
(a)	Each response plan must plan for resources for responding, to the maximum extent practicable, to a worst case discharge, and to a substantial threat of such a discharge.	App A
(b)	An operator must certify in the plan ... reviewed NCP and each applicable ACP...	Foreword
(b)(1)	As a minimum to be consistent with the NCP as a facility response plan must:	----
(b)(1)(i)	Demonstrate an operator's clear understanding of the function of the Federal response structure...	§ 4.0
(b)(1)(ii)	Establish provisions to ensure the protection of safety at the response site; and	§ 4.0 (Command), § 5.0
(b)(1)(iii)	Identify the procedures to obtain any required Federal and State permissions for using alternative response strategies such as in-situ burning and dispersants...	§ 6.7, App. E
(b)(2)	As a minimum, to be consistent with the applicable ACP the plan must:	----
(b)(2)(i)	Address the removal of a worst case discharge and the mitigation or prevention of a substantial threat of a worst case discharge;	§ 3, App B
(b)(2)(ii)	Identify environmentally and economically sensitive areas;	§ 6.0
(b)(2)(iii)	Describe the responsibilities of the operator and of Federal, State and local agencies in removing a discharge and in mitigating or preventing a substantial threat of a discharge; and	§4.0
(b)(2)(iv)	Establish the procedures for obtaining an expedited decision on use of dispersants or other chemicals.	§ 6.7
(c)	Each response plan must include:	----
(c)(1)	A core plan consisting of ...	----
(c)(1)(i)	An information summary as required in § 194.113,	Fig 1.1
(c)(1)(ii)	Immediate notification procedures,	§ 2.0
(c)(1)(iii)	Spill detection and mitigation procedures,	§ 3.0
(c)(1)(iv)	The name, address, and telephone number of the oil spill response organization, if appropriate,	Fig 2.5, App A
(c)(1)(v)	Response activities and response resources,	§ 3.0, App A

DOT/PHMSA 49 CFR PART 194		
§ 194.107	BRIEF DESCRIPTION	LOCATION IN PLAN
(c)(1)(vi)	Names and telephone numbers of Federal, State, and local agencies which the operator expects to have pollution control responsibilities or support,	Fig 2.5
(c)(1)(viii)	Equipment testing,	App D.2
(c)(1)(ix)	Drill program - an operator will satisfy the requirement for a drill program by following the National Preparedness for Response Exercise Program (PREP) guidelines. An operator choosing not to follow PREP guidelines must have a drill program that is equivalent to PREP. The operator must describe the drill program in the response plan and PHMSA will determine if the program is equivalent to PREP.	App D.2
(c)(1)(x)	Plan review and update procedures;	§ 1.4
(c)(2)	An appendix for each response zone that includes the information required in paragraph (c)(1)(i)-(ix) of this section and the worst case discharge calculations that are specific to that response zone. An operator submitting a response plan for a single response zone does not need to have a core plan and a response zone appendix. The operator of a single response zone onshore pipeline shall have a single summary in the plan that contains the required information in § 194.113.7; and.	Annexes
(c)(3)	A description of the operator's response management system including the functional areas of finance, logistics, operations, planning, and command. The plan must demonstrate that the operator's response management system uses common terminology and has a manageable span of control, a clearly defined chain of command, and sufficient trained personnel to fill each position.	§ 4.0
§ 194.111	BRIEF DESCRIPTION	LOCATION IN PLAN
(a)	Each operator shall maintain relevant portions of its response plan at the operator's headquarters and at other locations from which response activities may be conducted, for example, in field offices, supervisor's vehicles, or spill response trailers.	Foreword Distribution List
(b)	Each operator shall provide a copy of its response plan to each qualified individual	Foreword Distribution List
§ 194.113	BRIEF DESCRIPTION	LOCATION IN PLAN
(a)	The information summary for the core plan, required by § 194.107, must include:	----
(a)(1)	The name and address of the operator.	Fig 1.1
(a)(2)	For each response zone which contains one or more line sections that meet the criteria for determining significant and substantial harm as described in § 194.103, a listing and description of the response zones, including county(s) and state(s).	Fig 1.1, Response Zone Annexes
(b)	The information summary for the response zone appendix, required in § 194.107, must include:	----
(b)(1)	The information summary for the core plan.	Fig 1.1
(b)(2)	The names or titles and 24-hour telephone numbers of the qualified individual(s) and at least one alternate qualified individual(s);	Fig 1.1, Fig 2.2
(b)(3)	The description of the response zone, including county(s) and state(s), for those zones in which a worst case discharge could cause substantial harm to the environment.	Fig 1.1, Response Zone Annexes
(b)(4)	A list of line sections for each pipeline contained in the response zone, identified by milepost or survey station number, or other operator designation.	Fig 1.1
(b)(5)	The basis for the operator's determination of significant and substantial harm.	Foreword
(b)(6)	The type of oil and volume of the worst case discharge.	App B

DOT/PHMSA 49 CFR PART 194		
§ 194.115	BRIEF DESCRIPTION	LOCATION IN PLAN
(a)	Each operator shall identify and ensure, by contract or other approved means, the resources necessary to remove, to the maximum extent practicable, a worst case discharge and to mitigate or prevent a substantial threat of a worst case discharge.	App A
(b)	An operator shall identify in the response plan the response resources which are available to respond within the time specified, after discovery of a worst case discharge, or to mitigate the substantial threat of such a discharge.	App A
§ 194.117	BRIEF DESCRIPTION	LOCATION IN PLAN
(a)	Each operator shall conduct training to ensure that:	----
(a)(1)	All personnel know --	----
(a)(1)(i)	Their responsibilities under the response plan	
(a)(1)(ii)	The name and address of, and the procedure for contacting, the operator on a 24-hour basis	§ 4.0
(a)(1)(iii)	The name of, and procedures for contacting, the qualified individual on a 24-hour basis	§ 2.0, Fig 2.2
(a)(2)	Reporting personnel know --	----
(a)(2)(i)	The content of the information summary of the response plan.	Fig 1.1
(a)(2)(ii)	The toll-free telephone number of the National Response Center	Fig 2.5
(a)(2)(iii)	The notification process	§ 2.0, Fig 2.5
(a)(3)	Personnel engaged in response activities know --	----
(a)(3)(i)	The characteristics and hazards of the oil discharged	Fig 3.2
(a)(3)(ii)	The conditions that are likely to worsen emergencies, including the consequences of facility malfunctions or failures, and the appropriate corrective actions.	§ 3.0
(a)(3)(iii)	The steps necessary to control any accidental discharge of oil and to minimize the potential for fire, explosion, toxicity, or environmental damage	§ 3.0
(a)(3)(iv)	The proper firefighting procedures and use of equipment, fire suits, and breathing apparatus	§ 3.0
(b)	Each operator shall maintain a training record for each individual that has been trained as required by this section. These records must be maintained in the following manner as long as the individual is assigned duties under the response plan	App D.1
(b)(1)	Records for operator personnel must be maintained at the operator's headquarters	App D.1
(b)(2)	Records for personnel engaged in response, other than operator personnel, shall be maintained as determined by the operator.	App D.1
(b)(3)	Nothing in this section relieves an operator from the responsibility to ensure that all response personnel are trained to meet the OSHA standards for emergency response operations in 29 CFR 1910.120 ...	App D.1
§ 194.119	BRIEF DESCRIPTION	LOCATION IN PLAN
(a)	Each owner shall submit two copies...	Distribution
(b)	...PHMSA will notify the operator of any alleged deficiencies...	----
(c)	The operator...may petition PHMSA for reconsideration within 30 days...	----
(d)	...PHMSA will approve the Response Plan...	----
(e)	...The operator may submit a certification to PHMSA...that the operator has obtained, through contract or other approved means, the necessary private personnel and equipment to record, to the maximum extent practicable, to a worst case discharge...	Foreword (Operator's Statement)
(f)	...PHMSA may require an operator to provide a copy of the response plan to the OSC...	----

DOT/PHMSA 49 CFR PART 194		
§ 194.121	BRIEF DESCRIPTION	LOCATION IN PLAN
(a)	Each operator shall update its response plan to address new or different operating conditions or information. In addition, each operator shall review its response plan in full at least every 5 years from the date of the last submission or the last approval as follows:	§ 1.5
(a)(1)	For substantial harm plans, an operator shall resubmit every 5 years from the last approval date.	§ 1.5
(a)(2)	For significant and substantial harm plans, an operator shall resubmit every 5 years from the last approval date.	§ 1.5
(b)	If a new or different operating condition or information would substantially affect the implementation of a response plan, the operator must immediately modify its response plan to address such a change...	§ 1.4
(b)(1)	An extension of the existing pipeline or construction of a new pipeline in a response zone not covered by the previously approved plan;	§ 1.4
(b)(2)	Relocation or replacement of the pipeline in a way that substantially affects the information included in the response plan, such as a change to the worst case discharge volume;	§ 1.4
(b)(3)	The type of oil transported, if the type affects the required response resources, such as a change from crude oil to gasoline;	§ 1.4
(b)(4)	The name of the spill removal organization;	§ 1.4
(b)(5)	Emergency response procedures;	§ 1.4
(b)(6)	The qualified individual;	§ 1.4
(b)(7)	A change in the NCP or an ACP that has significant impact on the equipment appropriate for response activities; and	§ 1.4
(b)(8)	Any other information relating to circumstances that may affect full implementation of the plan.	§ 1.4
(c)	If PHMSA determines that a change to a response plan does not meet the requirements of this part, PHMSA will notify the operator of any alleged deficiencies, and provide operator...opportunity to correct deficiencies.	----
(d)	An operator who disagrees with a determination that proposed revisions to a plan are deficient may petition PHMSA for reconsideration, within 30 days from the date of receipt of PHMSA's notice...	----

RESPONSE ZONE INFORMATION

East Texas Response Zone

RESPONSE ZONE CONTACT INFORMATION

Owner Name: Kinder Morgan Energy Partners, L.P.

Addresses: Physical Address
500 Dallas Street, Suite 1000
Houston, Texas 77002

24 Hour Emergency Contact Phone Numbers: (800) 265-6000 (24 Hours)

Telephone/Fax: Telephone references, including 24 hour numbers, for the Facility, Owner, and Qualified Individual/Alternate Qualified Individual are provided in Figure 2.2.

States Traversed: Texas

Areas/Counties Traversed: Wharton, Fort Bend, Victoria, Harris

INFORMATION SUMMARY

Determination of Significant and Substantial Harm (United States Department of Transportation/Pipeline and Hazardous Materials Safety Administration):

This Response Zone has been determined to meet the significant and substantial harm classification because at least one (1) line section within the response zone has met at least one of the criteria listed in 49CFR194.103(c)(1).

Worst Case Discharge(Refer to Appendix B for calculations):

Potential Oil Group: 2

(b) (7)(F)



Area: Wharton District Response Area

Qualified Individuals			
------------------------------	--	--	--

NAME	OFFICE	HOME	CELL
Dennis Wamsley	(281) 689-4510		(713) 206-7889

Alternate Qualified Individuals			
--	--	--	--

NAME	OFFICE	HOME	CELL
James Hay	(281) 689-4520 Alternate (713) 689-3205 ext 44520		(713) 818-9119
Jonathan Thonsgaard	(979) 532-2359 ext 225		(979) 533-2886

Response Zone Company Contacts				
---------------------------------------	--	--	--	--

POSITION/TITLE	NAME	OFFICE	HOME	CELL
Director-Operations	Dennis Wamsley	(281) 689-4510		(713) 206-7889
Operations Manager	James Hay	(281) 689-4520 Alternate (713) 689-3205 ext 44520		(713) 818-9119
Operations Manager	Jonathan Thonsgaard	(979) 532-2359 ext 225		(979) 533-2886
Line Patroller	Josh Haynie	(979) 532-2359		(979) 943-8351
Local Responder - Wharton	Gary Ryman	(979) 532-2359 ext 335		(979) 533-1179
Local Responder - Wharton	Jock Powers	(979) 532-2359 ext 227		(361) 443-0031
Local Responder - Wharton	Arthur Zahn Jr.	(979) 532-2359 ext 339		(979) 533-0509
Local Responder - Wharton	Dale Staff	(979) 532-2359 ext 331		(979) 531-9207
Local Responder - Wharton	Louis Srubar	(979) 532-2359 ext 336		(979) 533-3767
Local Responder - Wharton	Johnny Kunkel	(979) 532-2359 ext 222		(979) 533-0401

Pipeline Specifications			
Location	Type of Oil	State	County
Mile Posts 56-101.96	Condensate	Texas	Wharton

Company Owned Response Equipment		
NAME	LOCATION	DESCRIPTION
	NONE	

Breakout Tanks			
FACILITY NAME	TANK NUMBER	CAPACITY (Bbls)	TYPE OF OIL
NONE			

EXTERNAL NOTIFICATION REFERENCES**Texas**

LOCAL EMERGENCY SERVICES NOTIFICATIONS			
COUNTY	AGENCY	LOCATION	OFFICE/ ALTERNATE
<i>* Additional reporting information may be contained in the Document Library under Other Documents.</i>			

Area: Missouri City District Response Area

Qualified Individuals

NAME	OFFICE	HOME	CELL
Dennis Wamsley	(281) 689-4510		(713) 206-7889

Alternate Qualified Individuals

NAME	OFFICE	HOME	CELL
Mike Mugnier	(281) 689-4504		(281) 638-1895
James Hay	(281) 689-4520 Alternate (713) 689-3205 ext 44520		(713) 818-9119
Jonathan Thonsgaard	(979) 532-2359 ext 225		(979) 533-2886

Response Zone Company Contacts

POSITION/TITLE	NAME	OFFICE	HOME	CELL
Operations Manager	Mike Mugnier	(281) 689-4504		(281) 638-1895
Director-Operations	Dennis Wamsley	(281) 689-4510		(713) 206-7889
Operations Manager	James Hay	(281) 689-4520 Alternate (713) 689-3205 ext 44520		(713) 818-9119
Operations Manager	Jonathan Thonsgaard	(979) 532-2359 ext 225		(979) 533-2886
Line Patroller	Frank Herrera	(281) 886-1802		(713) 598-1493
Line Patroller	Mike Menchaca	(713) 369-9553		(713) 204-0192
Line Patroller	Mike Luna	(281) 886-1802		(713) 539-9646
Line Patroller	LB Young	(281) 886-1802		(281) 467-6762
Line Patroller	Rick Contorno	(281) 886-1801		(713) 962-6638
Line Patroller	John Renken	(281) 886-1817		(281) 433-8157
Line Patroller	Leonard Kluth	(281) 886-1816		(713) 560-0429
Local Responder - Missouri City	Randy Moreland	(281) 886-1803		(713) 582-6117
Local Responder - Missouri City	Antonio Salinas	(713) 369-9508		(713) 201-6579
Local Responder - Missouri City	Jimmy Rivas Sr.	(713) 369-9508		(281) 605-9618
Local Responder - Missouri City	Doug Hinson II	(713) 369-9508		(713) 205-2306
Local Responder - Missouri City	Andrew Adams	(281) 886-1800		(979) 533-3768

Pipeline Specifications			
Location	Type of Oil	State	County
Mile Posts 101.96-153.55	Condensate	Texas	Fort Bend

Company Owned Response Equipment		
NAME	LOCATION	DESCRIPTION
	NONE	

Breakout Tanks			
FACILITY NAME	TANK NUMBER	CAPACITY (Bbls)	TYPE OF OIL
NONE			

EXTERNAL NOTIFICATION REFERENCES**Texas**

LOCAL EMERGENCY SERVICES NOTIFICATIONS			
COUNTY	AGENCY	LOCATION	OFFICE/ ALTERNATE
<i>* Additional reporting information may be contained in the Document Library under Other Documents.</i>			

Area: Victoria District Response Area
--

Qualified Individuals			
NAME	OFFICE	HOME	CELL
Dennis Wamsley	(281) 689-4510		(713) 206-7889

NAME	OFFICE	HOME	CELL
Dennis Wamsley	(281) 689-4510		(713) 206-7889

Alternate Qualified Individuals			
NAME	OFFICE	HOME	CELL
Tony Palacios	(361) 998-3022		(361) 438-3411
James Hay	(281) 689-4520 Alternate (713) 689-3205 ext 44520		(713) 818-9119
Jonathan Thonsgaard	(979) 532-2359 ext 225		(979) 533-2886

NAME	OFFICE	HOME	CELL
Tony Palacios	(361) 998-3022		(361) 438-3411
James Hay	(281) 689-4520 Alternate (713) 689-3205 ext 44520		(713) 818-9119
Jonathan Thonsgaard	(979) 532-2359 ext 225		(979) 533-2886

Response Zone Company Contacts				
POSITION/TITLE	NAME	OFFICE	HOME	CELL
Director-Operations	Dennis Wamsley	(281) 689-4510		(713) 206-7889
Operations Manager	James Hay	(281) 689-4520 Alternate (713) 689-3205 ext 44520		(713) 818-9119
Operations Manager	Jonathan Thonsgaard	(979) 532-2359 ext 225		(979) 533-2886
E & C Tech	Mario Araiza Jr.	(281) 689-4560		(713) 806-7436
E & C Tech	Nathan Hanselka	(316) 576-4404 Ext. 226		(361) 894-2059
Operations Manager	Tony Palacios	(361) 998-3022		(361) 438-3411
Local Responder - Victoria	Kyle Neuvar	(361) 576-4404 ext 336		(361) 935-2377
Local Responder - Victoria	Bill Thibodeaux	(361) 526-4954		(361) 676-4516
Ops Supervisor - Victoria	Daniel Chumchal	(361) 576-4404 ext 222		(361) 935-1190

POSITION/TITLE	NAME	OFFICE	HOME	CELL
Director-Operations	Dennis Wamsley	(281) 689-4510		(713) 206-7889
Operations Manager	James Hay	(281) 689-4520 Alternate (713) 689-3205 ext 44520		(713) 818-9119
Operations Manager	Jonathan Thonsgaard	(979) 532-2359 ext 225		(979) 533-2886
E & C Tech	Mario Araiza Jr.	(281) 689-4560		(713) 806-7436
E & C Tech	Nathan Hanselka	(316) 576-4404 Ext. 226		(361) 894-2059
Operations Manager	Tony Palacios	(361) 998-3022		(361) 438-3411
Local Responder - Victoria	Kyle Neuvar	(361) 576-4404 ext 336		(361) 935-2377
Local Responder - Victoria	Bill Thibodeaux	(361) 526-4954		(361) 676-4516
Ops Supervisor - Victoria	Daniel Chumchal	(361) 576-4404 ext 222		(361) 935-1190

Pipeline Specifications			
Location	Type of Oil	State	County
Mile Posts 0-5 (Blackhawk Receipt), 0-56	Condensate	Texas	Victoria

Company Owned Response Equipment		
NAME	LOCATION	DESCRIPTION
	NONE	

Breakout Tanks			
FACILITY NAME	TANK NUMBER	CAPACITY (Bbls)	TYPE OF OIL
NONE			

EXTERNAL NOTIFICATION REFERENCES**Texas**

LOCAL EMERGENCY SERVICES NOTIFICATIONS			
COUNTY	AGENCY	LOCATION	OFFICE/ ALTERNATE
<i>* Additional reporting information may be contained in the Document Library under Other Documents.</i>			

Area: Deer Park District Response Area

Qualified Individuals

NAME	OFFICE	HOME	CELL
Dennis Wamsley	(281) 689-4510		(713) 206-7889

Alternate Qualified Individuals

NAME	OFFICE	HOME	CELL
Mike Mugnier	(281) 689-4504		(281) 638-1895
James Hay	(281) 689-4520 Alternate (713) 689-3205 ext 44520		(713) 818-9119
Jonathan Thonsgaard	(979) 532-2359 ext 225		(979) 533-2886

Response Zone Company Contacts

POSITION/TITLE	NAME	OFFICE	HOME	CELL
Line Patroller	Erik Eagleton	(281) 479-1234 Ext. 32937	(b) (6)	
Line Patroller	Frank Gibson	(281) 478-2938		(713) 204-8138
Line Patroller	Edward Wilkerson	(281) 478-2945		(713) 816-4852
Line Patroller	Pete Hartley	(281) 478-2939		(281) 253-8741
Line Patroller	Carl Coleman	(281) 478-2947		(281) 229-5908
Local Responder - Deer Park	Tyler Woerner	(281) 478-2942 Ext. 32910		(713) 898-3202
Local Responder - Deer Park	Jonathan Varela	(281) 478-2943		(713) 253-6377
Operations Specialist	Mark Palumbo	(281) 478-2908		(281) 620-9678
Local Responder - Deer Park	Joe Moore	(281) 478-2933		(713) 248-4733
Local Responder - Deer Park	Johnny Lowe	(281) 478-2906		(713) 254-8896
Local Responder - Deer Park	Mark Garcia	(281) 478-2934		(713) 705-7846
Local Responder - Deer Park	Lawrence Babineaux	(281) 478-2937		(713) 249-4842
Local Responder - Deer Park	Craig Zeringue	(281) 478-2916		(713) 248-4739
Line Patroller	Damascus Porter	(281) 478-2940		(281) 910-7112
DP Supervisor	Freddie Fitzgerald	(281) 478-2902		(713) 248-3917
Operations Manager	Mike Mugnier	(281) 689-4504		(281) 638-1895

Director-Operations	Dennis Wamsley	(281) 689-4510	(713) 206-7889
Operations Manager	James Hay	(281) 689-4520 Alternate (713) 689-3205 ext 44520	(713) 818-9119
Local Responder - Deer Park	Robert Riley	(281) 478-2946	(281) 726-6180
Operations Manager	Jonathan Thonsgaard	(979) 532-2359 ext 225	(979) 533-2886

Pipeline Specifications			
Location	Type of Oil	State	County
Mile Posts 153.55-166.70	Condensate	Texas	Harris

Company Owned Response Equipment		
NAME	LOCATION	DESCRIPTION
	NONE	

Breakout Tanks			
FACILITY NAME	TANK NUMBER	CAPACITY (Bbls)	TYPE OF OIL
NONE			

EXTERNAL NOTIFICATION REFERENCES
Texas

LOCAL EMERGENCY SERVICES NOTIFICATIONS			
COUNTY	AGENCY	LOCATION	OFFICE/ ALTERNATE
<i>* Additional reporting information may be contained in the Document Library under Other Documents.</i>			