OPA 90 OIL SPILL RESPONSE PLAN
CRUDE PIPELINE SYSTEM

Enterprise Crude Pipeline LLC
P. O. Box 4324
Houston, Texas 77210
(713) 381-3636 or (800) 877-3636

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

Enterprise Crude 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 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:

Terry L. Hurlburt, Senior V.P., Operations & EHS&T Date: 4-18-2012

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

FACILITY NAME: Enterprise Crude Pipeline LLC
FACILITY ADDRESS: 1100 Louisiana
Houston, TX 77002

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 _____

1. Has any line section experienced a release greater than 1,000 barrels within the previous five years? or

YES ✓ NO _____

2. Has any line section experienced two or more reportable releases, as defined in 49CFR 195.5, within the previous five years? or

YES ✓ NO _____

3. Does any line section contain any electric resistance welded pipe, manufactured prior to 1970 and operates at a maximum operating pressure established under 49CFR195.406 that corresponds to a stress level greater than 50 percent of the specified minimum yield strength of the pipe? or

YES ✓ NO _____

4. 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 _____

5. 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 _____

Based on the DOT-PHMSA criteria above the Enterprise Crude Pipeline system is considered "Significant and Substantial Harm".

Enterprise Crude hereby certifies to the Pipeline and Hazardous Materials Safety Administration of the 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.

Terry L. Hurlburt
Signature

Senior V.P., Operations & EHS&T
Title

Terry L. Hurlburt
Name (please type or print)

4-18-2012
Date

REVISION RECORD			
CHANGE DATE	REMOVE PAGE NUMBER(S)	INSERT PAGE NUMBER(S)	DESCRIPTION OF CHANGE(S)
March 2006	ALL	ALL	New plan distribution
June 2007	Forward Section	Forward Section	Updated to new corporate address, change titles & names
June 2007	Section 1.0	Section 1.0	1-1 – Revised Scope of Plan 1-5 – Updated addresses & contact person
June 2007	Section 2.0	Section 2.0	2-1 thru 2-7 – Updated titles, departments, personnel & phone numbers 2-9 thru 2-10 – Updated release event report form 2-12 – Updated NRC 2-34 – Updated new OSRO (National Response Corporation) and deleted Ferguson Harbour
June 2007	Section 4.0	Section 4.0	4-1 – Updated website for IMN Handbook USCG 4-3, 4-6 thru 4-7 - Updated FRRT
June 2007	Section 5.0	Section 5.0	5-1 – Updated forms table 5-3 thru 5-36 – Updated with new forms
June 2007	Appendix A	Appendix A	A-3 – Updated communications A-19 – Updated with new OSRO (National Response Corporation) and deleted Ferguson-Harbour
June 2007	Appendix D	Appendix D	D-3 – Updated Training Records Maintenance D-4 – Updated Response Team Exercise
June 2007	Appendix H	Appendix H	H-2 thru H-7 - Change Area Manager/Area Supervisor

REVISION RECORD			
CHANGE DATE	REMOVE	INSERT	DESCRIPTION OF CHANGE(S)
	PAGE NUMBER(S)		
September 2010	All	All	Forward Section, Section 1, Section 2.0, Appendix A and updated Company Name throughout plan
April 2011	Forward Section	Forward Section	Updated Revision Record
April 2011	Section 1.0	Section 1.0	Updated WCD
April 2011	Section 2.0	Section 2.0	Updated Personnel
April 2011	Appendix B	Appendix B	Updated Breakout Tank Section
March 2012	All Sections, Appendices Updated	All Sections, Appendices Updated	Updated Personnel, notification information, and maps

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

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

DISTRIBUTION LIST	
COPY NUMBER	**PLAN HOLDER (Hard Copies)**
	Enterprise Crude Pipeline LLC Attn: Environmental Department 1100 Louisiana Houston, Texas 77002
	Liquids Control Center – War Room 1100 Louisiana Houston, TX 77002
	Liquids Control Center – Shift Supervisor 2727 North Loop West Houston, TX 77008
	Liquids Control Center – Shift Supervisor 210 Park Avenue, Suite 1600 Oklahoma City, OK 73102
	Manager, DOT Compliance & Regulatory Compliance
	Managers, Field Environmental
	Field Environmental Representatives
	Safety/PSM Coordinators
	Qualified Individuals
	Manager, Field Engineering
	Environmental Planning Officer U.S. DOT Office of Pipeline Safety 1200 New Jersey Avenue, SE Washington, D.C. 20590

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Regulatory Cross-References are provided at the end of this document.

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APPENDICES

1.0 INTRODUCTION AND PLAN CONTENT

1.1 PLAN PURPOSE/OBJECTIVES

The purpose of this OPA 90 Oil Spill Response Plan ("Plan") is to assist Enterprise Crude Pipeline personnel in preparing for and responding quickly and safely to a discharge originating from the pipelines and associated facilities. The Plan provides techniques and guidelines for achieving an efficient, coordinated, and effective response to a discharge incident 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.
- Document equipment, manpower, and other resources available to assist with the response.
- Ensure compliance with the federal, state, and local oil pollution regulations.
- Ensure consistency with the National Contingency Plan and 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 and 31 TAC – TXGLO.

This Plan contains prioritized procedures for Company personnel to mitigate or prevent any discharge 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 and the appendices.

1.3 PLAN DISTRIBUTION PROCEDURES

The Corporate Plan Holder is responsible for maintenance and distribution of the Plan. Distribution will be handled in the following manner:

- The Company Portal will be used to maintain the Plan. E-mail notification will be used to notify stakeholders of changes to the Plan. The notifications will be made to the Distribution List in the Foreword section of the Plan (FWD-vi)

- Company personnel who may be called upon to provide assistance during discharge response activities will have access to the Plan via the Company Portal for their use and training. In addition, Qualified Individuals will have access to the plans via DVD, thumb drive or other media.

- The Plan is located on the Portal and can be accessed at:
  Go to Company Internet Portal Page and click on Departments Tab; then click on EHS&T tab; Go to Field Environmental and click on Facility Files icon; under Facility Files, click on OPA 90 Plans folder icon; finally under the OPA 90 Plans folder, click on Enterprise Crude. Or Click here if you are an Enterprise Employee.

- Various regulatory agencies will be distributed a 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

Annual Review/Update

The Corporate Plan Holder and Field Environmental Representative will coordinate the following plan review and update procedures:

- At least once each year, review and make appropriate revisions as required by operational or organizational changes.

- At least once each year, review and make appropriate revisions as required by changes in the names and telephone numbers detailed in Section 2.0.

- Review and make appropriate revisions as required by improved procedures or deficiencies identified during response team tabletop exercises or actual emergency responses.

- Coordinate the word processing, publication, and distribution efforts to complete the revisions and maintain the Plan.

1.4 PLAN REVIEW AND UPDATE PROCEDURES (Cont'd)

Agency Revision Requirements

The Company shall revise and resubmit changes to the 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 OSROs that provide equipment and personnel.
- A change in emergency response procedures.
- A change in the Qualified Individual.
- A change in the National Contingency Plan ("NCP") or an Area Contingency Plan ("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.

DOT/PHMSA must be provided with two copies of such 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 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.

1.5 REGULATORY COMPLIANCE

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 zone has been reviewed for consistency with the following plans:

- National Contingency Plan (NCP)
- EPA Region 6--Regional Integrated Contingency Plan
- USCG -- One Gulf Plan
  - Marine Safety Office Houston/Galveston Geographic Response Plan
  - Marine Safety Office Port Arthur Geographic Response Plan
  - Marine Safety Office Corpus Christi Geographic Response Plan

FIGURE 1.1

FACILITY INFORMATION

GENERAL INFORMATION		
Facility Name:	Enterprise Crude Pipeline System	
PHMSA Control Number(s):	1255 (South Texas / Seaway Crude Response Zone) 118 (West Texas / Red River Crude Response Zone)	
Owner Name:	Enterprise Crude Pipeline LLC	
Addresses:	***Physical Address*** 1100 Louisiana Houston, TX 77002	***Mailing Address*** P. O. Box 4324 Houston, TX 77210-4324
Mainline Number:	(713) 381-6500 or (866) 931-3726	
Contact Person:	Stephen Lee - Manager, Field Environmental	
Primary NAICS Code:	48611	
Determination of Significant and Substantial Harm (DOT/PHMSA):	Both Response Zones meet the criteria for "Significant and Substantial Harm".	
Operator Statement of "Significant and Substantial Harm":	It is Enterprise Crude goal to respond as quickly as possible to <u>all</u> uncontrolled releases of petroleum product, 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), Enterprise Crude is compelled to consider all the active line sections listed below in this Section as capable of a release potentially causing "significant and substantial harm".	
PIPELINE LOCATION		
States/Counties:	The Enterprise Crude Pipeline system covers two specific response zones covering three (3) states and 66 counties and parishes specifically detailed in this Figure 1.1.	
States Traversed:	**South Texas / Seaway Crude Response Zone 1255** Texas, Oklahoma **West Texas / Red River Crude Response Zone 118** Texas, Oklahoma, New Mexico	
Response Zone:	See Figure 1.2	

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

PHYSICAL DESCRIPTION - PIPELINE

General:

- Enterprise Crude operates and maintains an "interstate common carrier" crude pipeline system which includes transmission, breakout storage, and handling facilities located along the pipeline.

- As an interstate common carrier, Enterprise Crude operates under the rules and regulations of the Federal Energy Regulatory Commission (FERC), while conforming with the oil pipeline regulations of the Department of Transportation (49 CFR Parts 194 & 195).

- The Enterprise Crude Pipeline system is divided into two specific pipeline response zones. The response zones are as follows (Specific information to both response zones are provided later in this section):

  1) South Texas / Seaway Crude Response Zone which includes assets located in South Texas, Central Texas, and the Seaway Pipeline from the Gulf Coast area to Cushing, Oklahoma. This district includes all Texas and Oklahoma facilities located east of I-35.

  2) West Texas / Red River Crude Response Zone which includes assets located in West Texas (including facilities in New Mexico) and the Texas/ Oklahoma Red River area. This district includes all New Mexico facilities and all Texas and Oklahoma facilities located west of I-35.

- The two response zones are comprised of nine (9) operating areas. The South Texas / Seaway Crude Response Zone operating areas include Texas City, Freeport, South Texas, Central Texas, and Cushing. The West Texas / Red River Crude Response Zone operating areas include Midland, Synder, Southern Oklahoma, and North Texas.

- This Plan is written in English and understood by personnel responsible for carrying out the plan.

Pipeline Specifications:

The basic specifications of the pipelines in all two (2) Response Zones are as follows:

- **Product Types:** Crude Oil

- **Pipe Detail:** 4", 6", 8", 10" 12", 16", 20", 24", 30", 36" and 42" OD (various wall thicknesses)

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

PHYSICAL DESCRIPTION – PIPELINE (Cont'd)

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 volume (additional details in Appendix G):

Worst Case Discharge (WCD)

Response Zone	Discharge Scenario	Potential Oil Group	DOT/PHMSA Planning Volume (b) (7)(F)
South Texas / Seaway Crude District Response Zone	WCD	3	
West Texas / Red River Crude District Response Zone	WCD	3	

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

SOUTH TEXAS / SEAWAY CRUDE RESPONSE ZONE INFORMATION	
South Texas / Seaway Crude Contact Information:	
24 Hour Emergency Contact Phone Numbers:	**(800) 220-1058 Enterprise Crude Pipeline Control Emergency** **(800) 331-3381 Seaway Crude Pipeline Emergency** **(800) 877-3636 Enterprise Corporate Emergency**
Qualified Individual / Emergency Coordinator:	See Figure 2.2 for Qualified Individual/Emergency Coordinator Information
Alt. Qualified Individual / Alt. Emergency Coordinator:	See Figure 2.2 for Alt. Qualified Individual/Emergency Coordinator Information
Telephone/FAX:	Telephone references, including 24 hour numbers, for the Facility, Owner, and QI/AQI are provided in Figure 2.2.
Contracted Resources:	Agreement numbers are on-file at Corporate Headquarters in Houston, Texas, and on the Enterprise portal. Classifications are detailed in Appendix A.

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

SOUTH TEXAS / SEAWAY CRUDE RESPONSE ZONE INFORMATION (Cont'd)

- The **South Texas / Seaway Crude Response Zone** (PHMSA Control Number 1255) includes facilities and pipelines located in Texas and Oklahoma. These assets include:

PIPELINES:

Pipeline #: **S-1**
Description: 30" Line from Jones Creek Tank Farm to East Cushing Tank Farm.
Length: 502.20 miles of pipe.

Potentially Affected Parishes/Counties:

Brazoria, TX	Freestone, TX	Bryan, OK
Fort Bend, TX	Navarro, TX	Johnston, OK
Waller, TX	Henderson, TX	Pontatoc, OK
Harris, TX	Kaufman, TX	Seminole, OK
Grimes, TX	Rockwall, TX	Pottawatomie, OK
Madison, TX	Collin, TX	Lincoln, OK
Leon, TX	Grayson, TX	Payne, OK

Pipeline #: **S-2**
Description: 30" Line from Freeport Dock to Jones Creek Tank Farm.
Length: 7.10 miles of pipe.

Potentially Affected Parishes/Counties: Brazoria, TX

Pipeline #: **S-3**
Description: 30" Line from Freeport Dock to Jones Creek Tank Farm.
Length: 7.10 miles of pipe.

Potentially Affected Parishes/Counties: Brazoria, TX

Pipeline #: **S-4**
Description: 42" Line from Freeport Dock to Jones Creek Tank Farm.
Length: 7.30 miles of pipe.

Potentially Affected Parishes/Counties: Brazoria, TX

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

SOUTH TEXAS / SEAWAY CRUDE RESPONSE ZONE INFORMATION (Cont'd)

PIPELINES (Cont'd):

Pipeline #: **S-5**
Description: 42" Line from Texas City Dock to Texas City Tank Farm.
Length: 4.25 miles of pipe.

Potentially Affected Parishes/Counties: Galveston, TX

Pipeline #: **S-6**
Description: 36" Line from Texas City Dock to Texas City Tank Farm.
Length: 4.26 miles of pipe.

Potentially Affected Parishes/Counties: Galveston, TX

Pipeline #: **S-7**
Description: 36" Line from Texas City Tank Farm to Pasadena Delivery Facility.
Length: 31.28 miles of pipe.

Potentially Affected Parishes/Counties: Galveston and Harris, TX

Pipeline #: **S-7A**
Description: 36" Line from Webster Junction to Exxon Delivery.
Length: 0.05 miles of pipe.

Potentially Affected Parishes/Counties: Harris, TX

Pipeline #: **S-8**
Description: 30" Line from Pasadena Delivery Facility to Galena Park Station.
Length: 2.29 miles of pipe.

Potentially Affected Parishes/Counties: Harris, TX

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

SOUTH TEXAS / SEAWAY CRUDE RESPONSE ZONE INFORMATION (Cont'd)

PIPELINES (Cont'd):

Pipeline #: **S-9**
Description: 36" Line from Pasadena Delivery Facility to Lyondell/CITGO Refinery.
Length: 0.57 miles of pipe.

Potentially Affected Parishes/Counties: Harris, TX

Pipeline #: **S-10**
Description: 20" Line from Galena Park Station to Lyondell/CITGO Delivery Facility.
Length: 1.00 miles of pipe.

Potentially Affected Parishes/Counties: Harris, TX

Pipeline #: **S-11**
Description: 20" Line from Hess/OTI to Galena Park Station.
Length: 0.75 miles of pipe.

Potentially Affected Parishes/Counties: Harris, TX

Pipeline #: **C-1**
Description: 8" Line from Hope Station to Sealy Junction (C-5).
Length: 66.78 miles of pipe.

Potentially Affected Parishes/Counties: Lavaca, Colorado, and Austin, TX

Pipeline #: **C-2**
Description: 8" Line from Luling Station to Sealy Tank Farm.
Length: 89.74 miles of pipe.

Potentially Affected Parishes/Counties:

Caldwell, TX	Fayette, TX	Austin, TX
Gonzales, TX	Colorado, TX	

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

SOUTH TEXAS / SEAWAY CRUDE RESPONSE ZONE INFORMATION (Cont'd)

PIPELINES (Cont'd):

Pipeline #: **C-3**
Description: 8"/12" Line from Sealy Tank Farm to Aldine Station.
Length: 47.39 miles of pipe.

Potentially Affected Parishes/Counties: Austin, Waller, and Harris, TX

Pipeline #: **C-4**
Description: 8"/12" Line from Sealy Tank Farm to Aldine Station.
Length: 47.39 miles of pipe.

Potentially Affected Parishes/Counties: Austin, Waller, and Harris, TX

Pipeline #: **C-5**
Description: 8"/10" Line from Sealy Tank Farm to Sealy Junction (MP 7.60) to Cullen Junction.
Length: 63.05 miles of pipe.

Potentially Affected Parishes/Counties: Austin, Waller, Fort Bend, and Harris, TX

Pipeline #: **C-6**
Description: 8"/10" Line from Vanderbuilt Station to Sealy Tank Farm.
Length: 76.22 miles of pipe.

Potentially Affected Parishes/Counties: Jackson, Wharton, Colorado, and Austin, TX

Pipeline #: **C-7**
Description: 6"/8" Line from Rosanky Station to Luling Station.
Length: 30.11 miles of pipe.

Potentially Affected Parishes/Counties: Bastrop and Caldwell, TX

Pipeline #: **C-8**
Description: 8"/12" Line from Rosanky Station to Sealy Tank Farm.
Length: 84.90 miles of pipe.

Potentially Affected Parishes/Counties: Bastrop, Fayette, Colorado, and Austin, TX

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

SOUTH TEXAS / SEAWAY CRUDE RESPONSE ZONE INFORMATION (Cont'd)

PIPELINES (Cont'd):

Pipeline #: **C-9**
Description: 6" Line from Aquilla Station to LaGrange Station.
Length: 4.95 miles of pipe.

Potentially Affected Parishes/Counties: Fayette, TX

Pipeline #: **C-9A**
Description: 6" Line from Plains to Aquilla tie-in.
Length: 0.25 miles of pipe.

Potentially Affected Parishes/Counties: Fayette, TX

Pipeline #: **C-10**
Description: 6" Line from Centerville Station to Grapeland Station.
Length: 12.60 miles of pipe.

Potentially Affected Parishes/Counties: Leon, TX

Pipeline #: **C-39**
Description: 4"/6" Line from Anderson Station to Luling Station.
Length: 17.24 miles of pipe.

Potentially Affected Parishes/Counties: Guadalupe and Caldwell, TX

Pipeline #: **C-39A**
Description: 4" Line from Roberts Station to C-39 tie-in.
Length: 4.10 miles of pipe.

Potentially Affected Parishes/Counties: Caldwell, TX

Pipeline #: **C-39B**
Description: 4" Line from Proctor Station to C-39 tie-in.
Length: 4.05 miles of pipe.

Potentially Affected Parishes/Counties: Guadalupe, TX

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

SOUTH TEXAS / SEAWAY CRUDE RESPONSE ZONE INFORMATION (Cont'd)

PIPELINES (Cont'd):

Pipeline #: **C-54**
Description: 24" Line from Sealy Tank Farm to Genoa Junction.
Length: 58.58 miles of pipe.

Potentially Affected Parishes/Counties: Austin, Waller, Fort Bend, and Harris, TX

Pipeline #: **C-54E**
Description: 24" Line from Genoa Junction to ECHO Station.
Length: 4.25 miles of pipe.

Potentially Affected Parishes/Counties: Harris, TX

Pipeline #: **C-54X**
Description: 24" Line Genoa Junction to ECHO Station.
Length: 4.25 miles of pipe.

Potentially Affected Parishes/Counties: Harris, TX

Pipeline #: **C-54D**
Description: 24" Line from Rancho Katy Station to Fulshear Junction.
Length: 2.17 miles of pipe.

Potentially Affected Parishes/Counties: Fort Bend, TX

Pipeline #: **C-55**
Description: 8" Line from West Columbia Station to Markham Station.
Length: 31.11 miles of pipe.

Potentially Affected Parishes/Counties: Brazoria and Matagorda, TX

Pipeline #: **C-55B**
Description: 8" Line from Marathon to C-55 tie-in.
Length: 0.93 miles of pipe.

Potentially Affected Parishes/Counties: Matagorda, TX

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

SOUTH TEXAS / SEAWAY CRUDE RESPONSE ZONE INFORMATION (Cont'd)

PIPELINES (Cont'd):

Pipeline #: **C-55C**
Description: 6" Line from Apache to C-55 tie-in.
Length: 2.00 miles of pipe.

Potentially Affected Parishes/Counties: Matagorda, TX

Pipeline #: **C-56**
Description: 8" Line from Withers Station to West Columbia Station.
Length: 24.86 miles of pipe.

Potentially Affected Parishes/Counties: Wharton, Matagorda, and Brazoria, TX

Pipeline #: **C-57**
Description: 6"/8" Line from Markham Station to Ganado Junction.
Length: 25.54 miles of pipe.

Potentially Affected Parishes/Counties: Matagorda, Wharton, and Jackson, TX

Pipeline #: **C-58**
Description: Two (2) 8" Lines from Hearne Station to Bryan Station.
Length: 33.40 miles of pipe in 16.70 miles of ROW.

Potentially Affected Parishes/Counties: Robertson and Brazos, TX

Pipeline #: **C-58B**
Description: 6" Line from Bryan Truck LACT to Bryan Station.
Length: 0.88 miles of pipe.

Potentially Affected Parishes/Counties: Brazos, TX

Pipeline #: **C-58C**
Description: 8" Line from Hearne Station to Sun.
Length: 0.40 miles of pipe.

Potentially Affected Parishes/Counties: Robertson, TX

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

SOUTH TEXAS / SEAWAY CRUDE RESPONSE ZONE INFORMATION (Cont'd)

PIPELINES (Cont'd):

Pipeline #: **C-59**
Description: 8" Line from Conroe Receipt to Wright Road Junction.
Length: 25.42 miles of pipe.

Potentially Affected Parishes/Counties: Montgomery and Harris, TX

Pipeline #: **C-59A**
Description: 6"/8"/10"/12" Line from Central Treating to Conroe Receipt.
Length: 1.68 miles of pipe.

Potentially Affected Parishes/Counties: Montgomery, TX

Pipeline #: **C-59B**
Description: 8" Line from Tomball Station to Tomball Junction
Length: 4.37 Miles of pipe.

Pipeline #: **C-66**
Description: 16" Line from East Cushing Tank Farm to Osage Pipeline.
Length: 0.56 miles of pipe.

Potentially Affected Parishes/Counties: Lincoln, OK

Pipeline #: **C-67**
Description: 8"/10"/12" Line from Mexia Station to Hufsmith Station.
Length: 129.65 miles of pipe.

Potentially Affected Parishes/Counties:

Limestone, TX	Madison, TX	Montgomery, TX
Robertson, TX	Grimes, TX	Harris, TX
Brazos, TX		

Pipeline #: **C-68**
Description: 10" Line from Hufsmith Station to Andre Junction.
Length: 37.76 miles of pipe.

Potentially Affected Parishes/Counties: Harris, TX

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

SOUTH TEXAS / SEAWAY CRUDE RESPONSE ZONE INFORMATION (Cont'd)

PIPELINES (Cont'd):

Pipeline #: **C-69**
Description: 16" Line from Alvin Station to Clear Lake Station.
Length: 6.64 miles of pipe.

Potentially Affected Parishes/Counties: Brazoria, Galveston, and Harris, TX

Pipeline #: **C-71**
Description: 6" Line from East Cushing Tank Farm to Enbridge.
Length: 0.67 miles of pipe.

Potentially Affected Parishes/Counties: Lincoln, OK

Pipeline #: **C-72**
Description: 12" Line from East Cushing Tank Farm to Manifold D.
Length: 1.00 miles of pipe.

Potentially Affected Parishes/Counties: Lincoln, OK

Pipeline #: **C-73**
Description: 22" Line from East Cushing Tank Farm to Manifold D.
Length: 0.89 miles of pipe.

Potentially Affected Parishes/Counties: Lincoln, OK

Pipeline #: **C-74**
Description: 24" Line from Basin to Manifold D.
Length: 0.34 miles of pipe.

Potentially Affected Parishes/Counties: Lincoln, OK

Pipeline #: **C-75**
Description: 24" Line from Manifold D to West Cushing Tank Farm.
Length: 0.97 miles of pipe.

Potentially Affected Parishes/Counties: Lincoln and Payne, OK

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

SOUTH TEXAS / SEAWAY CRUDE RESPONSE ZONE INFORMATION (Cont'd)

PIPELINES (Cont'd):

Pipeline #: **C-76**
Description: 18" Line from Manifold D to W Cushing Tank Farm.
Length: 0.79 miles of pipe.

Potentially Affected Parishes/Counties: Lincoln and Payne, OK

Pipeline #: **C-77**
Description: 10"/12" Line from W Cushing Tank Farm to E Cushing Tank Farm.
Length: 1.71 miles of pipe.

Potentially Affected Parishes/Counties: Lincoln and Payne, OK

Pipeline #: **C-78**
Description: 6"/8" Line from W Cushing Tank Farm to E Cushing Tank Farm.
Length: 1.63 miles of pipe

Potentially Affected Parishes/Counties: Lincoln and Payne, OK

Pipeline #: **C-79**
Description: 12" Line from W Cushing Tank Farm to Manifold D.
Length: 0.83 miles of pipe.

Potentially Affected Parishes/Counties: Lincoln and Payne, OK

Pipeline #: **C-80**
Description: 16" Line from W Cushing Tank Farm to Manifold D.
Length: 0.93 miles of pipe.

Potentially Affected Parishes/Counties: Lincoln and Payne, OK

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

SOUTH TEXAS / SEAWAY CRUDE RESPONSE ZONE INFORMATION (Cont'd)

PIPELINES (Cont'd):

Pipeline #: **C-90**
Description: 16" Line from West Columbia to Shaver Junction
Length: 44 miles of pipe.

Potentially Affected Parishes/Counties: Brazoria and Harris, TX

Pipeline #: **C-93**
Description: 24" Line from Lyssy to Sealy Station.
Length: 124 miles of pipe.

Potentially Affected Parishes/Counties: Wilson, Karnes, Gonzales, DeWitt, Lavaca, Colorado, Austin, TX

Pipeline #: **C-93A**
Description: 8" Lateral Line from Blackwell to Marshall Station.
Length: 25 miles of pipe.

Potentially Affected Parishes/Counties: DeWitt and Gonzales, TX

Pipeline #: **C-93B**
Description: 6" Lateral Line from Chestnut to Milton Station.
Length: 33.3 miles of pipe.

Potentially Affected Parishes/Counties: Bee and Karnes, TX

Pipeline #: **C-93C**
Description: 10" Lateral Line from Sinor Ranch to Lyssy Station.
Length: 26.5 miles of pipe.

Potentially Affected Parishes/Counties: Atascosa, Karnes, Live Oak, and Wilson, TX

Pipeline #: **C-98**
Description: 18" Line from Webster Junction to Morgan's Point Junction
Length: 2.78 miles of pipe.

Potentially Affected Parishes/Counties: Harris, TX

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

SOUTH TEXAS / SEAWAY CRUDE RESPONSE ZONE INFORMATION (Cont'd)

SEAWAY STATIONS / TANK FARMS:

Texas City Area:	Texas City Dock Terminal* Galveston County, TX	Texas City Tank Farm Galveston County, TX
	Galena Park Station Harris County, TX	Pasadena Delivery Harris County, TX
	ECHO Station Harris County, TX	
Freeport Area:	Freeport Dock Terminal* Brazoria County, TX	Jones Creek Tank Farm Brazoria County, TX
Central Texas Area:	Richmond Pump Station Fort Bend County, TX	Waller Pump Station Waller County, TX
	Madisonville Pump Station Madison County, TX	Trinity Pump Station Navarro County, TX
	Cedar Pump Station Freestone County, TX	Terrell Pump Station Kaufman County, TX
	Blue Ridge Pump Station Collin County, TX	
Cushing Area:	Colbert Pump Station Bryan County, OK	Wapanucka Pump Station Johnston County, OK
	Oakman Pump Station Ponotoc County, OK	Little Pump Station Seminole County, OK
	East Cushing Tank Farm Lincoln County, OK	West Cushing Tank Farm Payne County, OK

* US Coast Guard regulated facilities.

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

SOUTH TEXAS / SEAWAY CRUDE RESPONSE ZONE INFORMATION (Cont'd)

STATIONS (TANK FARMS, PUMP STATIONS, etc):

Texas City Area:	Clear Lake Station Harris County, TX	
Freeport Area:	Ganado Station Jackson County, TX	Hillje Station Wharton County, TX
	Vanderbuilt Station Jackson County, TX	West Columbia Station Brazoria County, TX
	Withers Station Wharton County, TX	
Central Texas Area:	Alabama Ferry Station Leon County, TX	Aldine Station Harris County, TX
	Bryan Station Brazos County, TX	Centerville Station Trinity County, TX
	Conroe Station Montgomery County, TX	Hufsmith Station Harris County, TX
	Hearne Station Robertson County, TX	Karen Station Montgomery County, TX
	Iola Station Grimes County, TX	Roan's Prairie Station Grimes County, TX
	Langley Station Leon County, TX	Rancho Katy Station Harris County, TX
	North Zulch Station Madison County, TX	
South Texas Area:	Altair Station Colorado County, TX	Hope Station Lavaca County, TX
	LaGrange Station Fayette County, TX	Hallettsville Station Lavaca County, TX

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

SOUTH TEXAS / SEAWAY CRUDE RESPONSE ZONE INFORMATION (Cont'd)

STATIONS (TANK FARMS, PUMP STATIONS, etc):

South Texas Area: (cont'd)	Knobloch Station Guadalupe County, TX	Sealy Station Austin County, TX
	Luling Station Guadalupe County, TX	Rosanky Station Bastrop County, TX
	Lyssy Station Wilson County, TX	Marshall Station Gonzales County, TX
	Milton Station Karnes County, TX	

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

WEST TEXAS / RED RIVER CRUDE RESPONSE ZONE INFORMATION	
West Texas / Red River Crude Contact Information:	
24 Hour Emergency Contact Phone Numbers:	**(800) 220-1058 Enterprise Crude Pipeline Control Emergency** **(800) 877-3636 Enterprise Corporate Emergency**
Qualified Individual / Emergency Coordinator:	See Figure 2.2 for Qualified Individual/Emergency Coordinator Information
Alt. Qualified Individual / Alt. Emergency Coordinator:	See Figure 2.2 for Alt. Qualified Individual/Emergency Coordinator Information
Telephone/FAX:	Telephone references, including 24 hour numbers, for the Facility, Owner, and QI/AQI are provided in Figure 2.2.
Contracted Resources:	Agreement numbers are on-file at Corporate Headquarters in Houston, Texas and classifications are detailed in Appendix A.

WEST TEXAS / RED RIVER CRUDE

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

WEST TEXAS / RED RIVER CRUDE RESPONSE ZONE INFORMATION (Cont'd)

- The **West Texas / Red River Crude Response Zone** (PHMSA Control Number 118) includes facilities and pipelines located in New Mexico, Oklahoma, and Texas. These assets include:

PIPELINES:

Pipeline #: **C-13**
Description: 8" Line from Hobbs Station to Midland Tank Farm.
Length: 78.52 miles of pipe.

Potentially Affected Parishes/Counties:

Lea, NM	Andrews, TX	Midland, TX
Gaines, TX	Martin, TX	

Pipeline #: **C-14**
Description: 8" Line from Midland Tank Farm to Hobbs Station.
Length: 79.93 miles of pipe.

Potentially Affected Parishes/Counties:

Midland, TX	Andrews, TX	Lea, NM
Martin, TX	Gaines, TX	

Pipeline #: **C-14A**
Description: 6" Line from Furham Station to C-14 tie-in.
Length: 9.26 miles of pipe.

Potentially Affected Parishes/Counties: Andrews, TX.

Pipeline #: **C-15**
Description: 8" Line from Crane Station to Midland Tank Farm.
Length: 47.94 miles of pipe.

Potentially Affected Parishes/Counties: Crane, Upton, and Midland, TX

Pipeline #: **C-16**
Description: 8" Line from Wood Station to Andrews Junction.
Length: 33.98 miles of pipe.

Potentially Affected Parishes/Counties: Gaines and Andrew, TX

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

WEST TEXAS / RED RIVER CRUDE RESPONSE ZONE INFORMATION (Cont'd)

PIPELINES (Cont'd):

Pipeline #: **C-17**
Description: 6"/8" Line from Conley Station to Wasson Station.
Length: 136.10 miles of pipe.

Potentially Affected Parishes/Counties:

Hardeman, TX	Tillman, OK	Jefferson, OK
Wilbarger, TX	Cotton, OK	Carter, OK

Pipeline #: **C-18**
Description: 6"/8"/10" Line from Chico Station to Southbend Station to Conoco/Carson Station.
Length: 116.26 miles of pipe.

Potentially Affected Parishes/Counties: Wise, Jack, Young, and Archer, TX

Pipeline #: **C-19**
Description: 6"/8" Line from Electra Station to Ringgold Station.
Length: 61.60 miles of pipe.

Potentially Affected Parishes/Counties: Wichita, Clay, and Montague, TX

Pipeline #: **C-20**
Description: 6"/8" Line from Kadane Station to Devol Station.
Length: 31.65 miles of pipe.

Potentially Affected Parishes/Counties: Wichita, Tillman, and Cotton, TX

Pipeline #: **C-22**
Description: 8"/16" Line from Addington Station to Ringgold Station.
Length: 26.40 miles of pipe.

Potentially Affected Parishes/Counties: Jefferson, OK and Montague, TX

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

WEST TEXAS / RED RIVER CRUDE RESPONSE ZONE INFORMATION (Cont'd)

PIPELINES (Cont'd):

Pipeline #: **C-22A**
Description: 8" Line from Addington Station to Ryan Junction.
Length: 12.10 miles of pipe.

Potentially Affected Parishes/Counties: Jefferson, OK

Pipeline #: **C-23**
Description: 12" Line from Jacksboro Station to Wichita Station.
Length: 58.20 miles of pipe.

Potentially Affected Parishes/Counties: Jack, Clay, and Wichita, TX

Pipeline #: **C-24**
Description: 12" Line from Jacksboro Station to Perrin Junction.
Length: 0.62 miles of pipe.

Potentially Affected Parishes/Counties: Jack, TX

Pipeline #: **C-25**
Description: 8" Line from Nocona Station to Ringgold Station.
Length: 18.50 miles of pipe.

Potentially Affected Parishes/Counties: Montague, TX

Pipeline #: **C-26**
Description: 8"/12"/16" Line from Ranger Station to BP Healdton.
Length: 143.99 miles of pipe.

Potentially Affected Parishes/Counties:

Stevens, TX	Jack, TX	Jefferson, TX
Palo Pinto, TX	Montague, TX	Carter, TX

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

WEST TEXAS / RED RIVER CRUDE RESPONSE ZONE INFORMATION (Cont'd)

PIPELINES (Cont'd):

Pipeline #: **C-26A**
Description: 8" Line from Jacksboro Junction to Bowie Station.
Length: 19.56 miles of pipe.

Potentially Affected Parishes/Counties: Jack and Montague, TX

Pipeline #: **C-26B**
Description: 8" Line from Grady Junction to BP Healdton.
Length: 14.49 miles of pipe.

Potentially Affected Parishes/Counties: Jefferson and Carter, OK

Pipeline #: **C-28**
Description: 6"/8" Line from Addington Station to Binger Station.
Length: 86.80 miles of pipe.

Potentially Affected Parishes/Counties:

Jefferson, OK	Cotton, OK	Grady, OK
Stephens, OK	Comanche, OK	Caddo, OK

Pipeline #: **C-29**
Description: 6"/8" Line from Addington Station to Maysville Station.
Length: 49.63 miles of pipe.

Potentially Affected Parishes/Counties: Jefferson, Stephens, and Garvin, OK

Pipeline #: **C-29A**
Description: 8" Line from Helen/Randall/Bradley to C-29 MP 101 tie-in.
Length: 16.75 miles of pipe.

Potentially Affected Parishes/Counties: Garvin, OK

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

WEST TEXAS / RED RIVER CRUDE RESPONSE ZONE INFORMATION (Cont'd)

PIPELINES (Cont'd):

Pipeline #: **C-29B**
Description: 4" Line from Springer to Purdy to C-29 MP 98 tie-in.
Length: 2.85 miles of pipe.

Potentially Affected Parishes/Counties: Garvin and Stephens, OK

Pipeline #: **C-30**
Description: 6"/8" Line from Healdton Station to Velma Junction.
Length: 44.25 miles of pipe.

Potentially Affected Parishes/Counties: Carter, Jefferson, and Stephens, OK

Pipeline #: **C-31**
Description: 6" Line from Ringling Station to C-30 MP 24.
Length: 6.09 miles of pipe.

Potentially Affected Parishes/Counties: Jefferson, OK

Pipeline #: **C-32**
Description: 8" Line from Healdton Station to Wasson Station.
Length: 11.53 miles of pipe.

Potentially Affected Parishes/Counties: Carter, OK

Pipeline #: **C-33**
Description: 4"/6" Line from Dixie Station to Nocona Station.
Length: 88.55 miles of pipe.

Potentially Affected Parishes/Counties: Grayson, Cook, and Montague, TX

Pipeline #: **C-35**
Description: 6" Line from CNG to Wasson Station.
Length: 3.00 miles of pipe.

Potentially Affected Parishes/Counties: Carter, OK

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

WEST TEXAS / RED RIVER CRUDE RESPONSE ZONE INFORMATION (Cont'd)

PIPELINES (Cont'd):

Pipeline #: **C-37**
Description: 6" Line from Pike Station to Wasson Station.
Length: 14.66 miles of pipe.

Potentially Affected Parishes/Counties: Carter, OK

Pipeline #: **C-38**
Description: 6" Line from Vorhees/Hewitt Station to Wasson Station.
Length: 5.37 miles of pipe.

Potentially Affected Parishes/Counties: Carter, OK

Pipeline #: **C-42**
Description: 8" Line from Velma Station to Healdton Station.
Length: 29.31 miles of pipe.

Potentially Affected Parishes/Counties: Stephens and Carter, OK

Pipeline #: **C-42A**
Description: 8" Line from Camp Station to Healdton Station.
Length: 10.28 miles of pipe.

Potentially Affected Parishes/Counties: Carter, OK

Pipeline #: **C-46**
Description: 3.25" Line from DCP Artesia to Centurion.
Length: 5 miles of pipe.

Potentially Affected Parishes/Counties: Eddy, NM

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

WEST TEXAS / RED RIVER CRUDE RESPONSE ZONE INFORMATION (Cont'd)

PIPELINES (Cont'd):

Pipeline #: **C-43**
Description: 4" Line from Erin Springs Station to Maysville Station.
Length: 11.00 miles of pipe.

Potentially Affected Parishes/Counties: Garvin and Carter, OK

Pipeline #: **C-44**
Description: 4" Line from Azalea Station to Midland Tank Farm.
Length: 8.20 miles of pipe.

Potentially Affected Parishes/Counties: Midland, TX

Pipeline #: **C-47**
Description: 8" Line from Holliday Junction (C-18) to Ringgold Station.
Length: 41.34 miles of pipe.

Potentially Affected Parishes/Counties: Archer, Clay, and Montague, TX

Pipeline #: **C-48**
Description: 8" Line from Hwy 148 Booster Station to Wichita Falls Station.
Length: 14.02 miles of pipe.

Potentially Affected Parishes/Counties: Clay and Wichita, TX

Pipeline #: **C-51A**
Description: 4" Line from Lario Station to Maysville Station.
Length: 8.68 miles of pipe.

Potentially Affected Parishes/Counties: Carter, TX

Pipeline #: **C-52**
Description: 6"/8" Line from Milroy Station to Graham Station.
Length: 26.03 miles of pipe.

Potentially Affected Parishes/Counties: Carter, TX

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

WEST TEXAS / RED RIVER CRUDE RESPONSE ZONE INFORMATION (Cont'd)

PIPELINES (Cont'd):

Pipeline #: **C-61**
Description: 6" Line from Mack Chandler to Wasson Station.
Length: 1.50 miles of pipe.

Potentially Affected Parishes/Counties: Carter, OK

Pipeline #: **C-63**
Description: 4" Line from Ritter Station to Healdton Station.
Length: 6.00 miles of pipe.

Potentially Affected Parishes/Counties: Carter, OK

Pipeline #: **C-64**
Description: 4" Line from Citation to Healdton Station.
Length: 6.00 miles of pipe.

Potentially Affected Parishes/Counties: Carter, OK

Pipeline #: **C-65**
Description: 4" Line from Cement to Cyril Station.
Length: 7.33 miles of pipe.

Potentially Affected Parishes/Counties: Caddo, OK

Pipeline #: **S-13**
Description: 12" Line from Jacksboro Station to Wichita Falls Station.
Length: 58.20 miles of pipe.

Potentially Affected Parishes/Counties: Jack, Clay, and Wichita, TX

Pipeline #: **G-13 (Sharon Ridge)**
Description: 6" Line from Ira Station to China Grove Station.
Length: 8.26 miles of pipe.

Potentially Affected Parishes/Counties: Scurry, TX

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

WEST TEXAS / RED RIVER CRUDE RESPONSE ZONE INFORMATION (Cont'd)

PIPELINES (Cont'd):

Pipeline #: **C-87**
Description: 6" Brillhart Lateral to Crane Station.
Length: 27.85 miles of pipe.

Potentially Affected Parishes/Counties: Crane and Ward, TX

Pipeline #: **C-15A**
Description: 6" Toro Lateral.
Length: 6.62 miles of pipe.

Potentially Affected Parishes/Counties: Midland, TX

Pipeline #: **C-88**
Description: 10" Line from Lynch Station to Hobbs.
Length: 26.24 miles of pipe.

Potentially Affected Parishes/Counties: Lea, NM

Pipeline #: **C-91**
Description: 8" Line from El Camino to Midland.
Length: 12.65 miles of pipe.

Potentially Affected Parishes/Counties: Midland, TX

Pipeline #: **C-92**
Description: 10" Line from Huntsman to El Camino.
Length: 12.65 miles of pipe.

Potentially Affected Parishes/Counties: Ector and Midland, TX

Pipeline #: **C-92.1**
Description: 8" Lawson Junction to Huntsman Junction
Length: 21.15 miles of pipe.

Potentially Affected Parishes/Counties: Ector, TX

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

WEST TEXAS / RED RIVER CRUDE RESPONSE ZONE INFORMATION (Cont'd)

PIPELINES (Cont'd):

Pipeline #: **C-92.2**
Description: 10" Line from Frankel City to Lawson Junction
Length: 46.095 miles of pipe.

Potentially Affected Parishes/Counties: Andrews and Ector, TX

Pipeline #: **C-92.3**
Description: 10" Line from Hobbs to Frankel City (previously line 512)
Length: 21.36 miles of pipe.

Potentially Affected Parishes/Counties: Lea, NM, Gaines and Andrews, TX

Pipeline #: **C-94**
Description: 8" Line from Jal to Hwy 285 Station
Length: 50.6 miles of pipe.

Potentially Affected Parishes/Counties: Lea, NM, Winkler, Loving, Ward and Reeves, TX

Potentially Affected Parishes/Counties: Lea, NM, Gaines and Andrews, TX
Pipeline #: **1057**
Description: 4" ARCO Block 31 Injection Line
Length: 9.706 miles of pipe.

Potentially Affected Parishes/Counties: Ector, TX

Pipeline #: **1060**
Description: 6" Rexene Odessa
Length: 2.19 miles of pipe.

Potentially Affected Parishes/Counties: Ector, TX

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

WEST TEXAS / RED RIVER CRUDE RESPONSE ZONE INFORMATION (Cont'd)

STATIONS (TANK FARMS, PUMP STATIONS, etc):

Midland Area:

Andrews Station Andrews County, TX	Azalea Station Midland County, TX
Brillhart Station Ward County, TX	Cowboy Station Andrews County, TX
Crane Station Crane County, TX	Dark Star Station Ector County, TX
Ector Station Ector County, TX	El Camino Station Midland County, TX
Elizabeth Station Upton County, TX	Fisher Station Andrews County, TX
Furhman (Fur 1) Station Andrews County, TX	Frank Station Midland County, TX
Hobbs Station Lea County, NM	Hwy 285 Station Reeves County, TX
Gaines/Jetta Station Gaines County, TX	Hunt Station Andrews County, TX
Lynch Station Lea County, NM	Lawson Pump Station Ector County, TX
Ranch Station Andrews County, TX	Midland Tank Farm Midland County, TX
Toro Station Upton County, TX	Shafter Lake Station Andrews County, TX
Wood Station Gaines County, TX	Wildfire II Station Midland County, TX

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

WEST TEXAS / RED RIVER CRUDE RESPONSE ZONE INFORMATION (Cont'd)

STATIONS (TANK FARMS, PUMP STATIONS, etc):

Synder Area:	China Grove Station Scurry County, TX	Ira Station Scurry County, TX
North Texas Area:	Atapco Station Wichita County, TX	Brazos Station Young, TX
	Bowie Station Montague County, TX	Burkburnett Station Wichita County, TX
	Callisburg Station Cooke County, TX	Chico Station Wise County, TX
	Conley Station Hardeman, TX	Electra Station Wichita County, TX
	Dixie Station Grayson, TX	Hwy 148 Booster Stat. Clay County, TX
	Holliday Station Archer County, TX	Kadane Station Wichita County, TX
	Jacksboro Station Jack County, TX	Muenster Station Cooke County, TX
	Noncona Station Montague County, TX	Olney Station Archer County, TX
	Ringgold Station Montague County, TX	Rochester Station Haskell County, TX
	South Bend Station Young County, TX	Upham Station Jack County, TX
	Wichita Falls Station Wichita County, TX	

FIGURE 1.1

FACILITY INFORMATION (Cont'd)

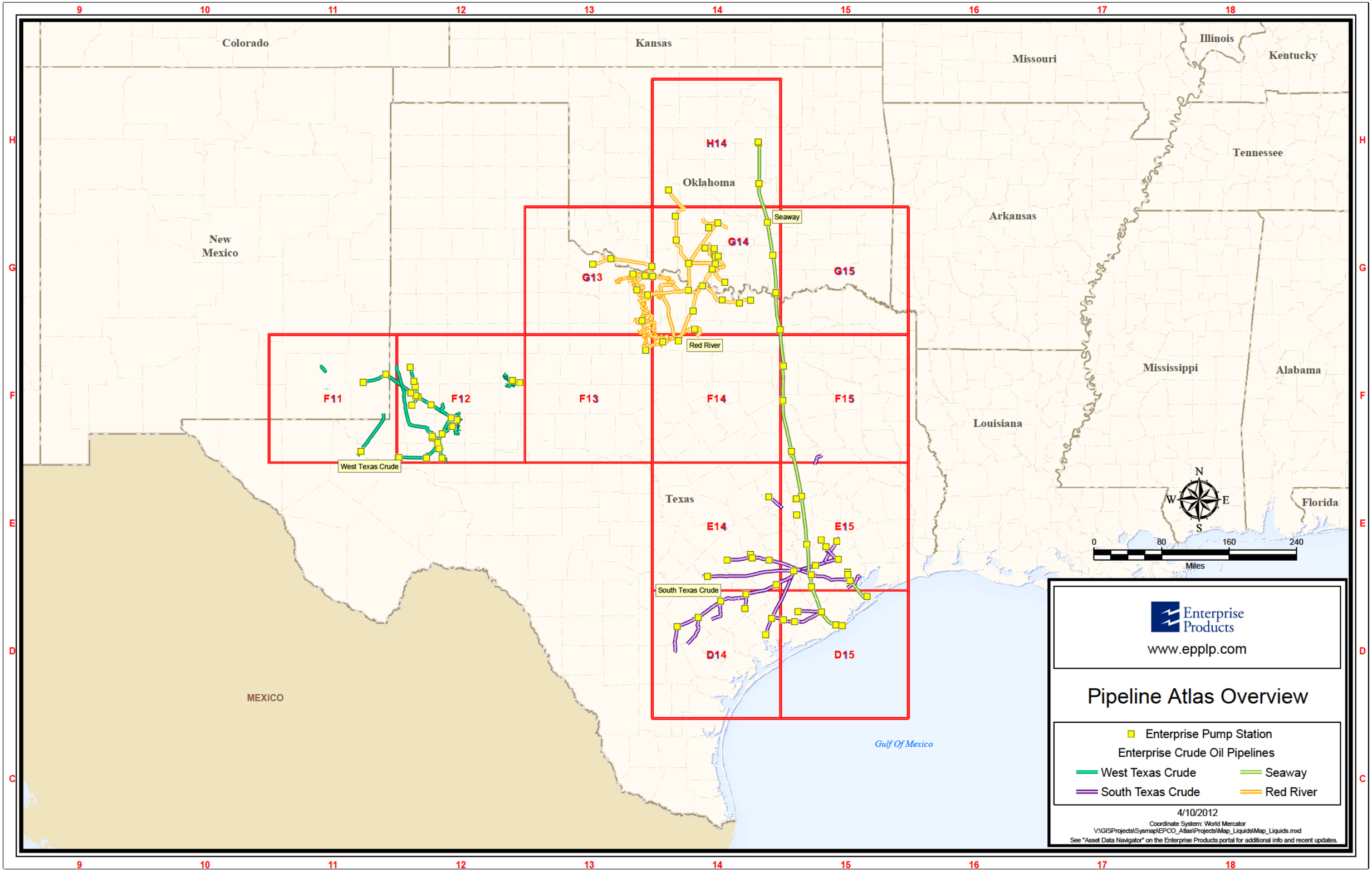
WEST TEXAS / RED RIVER CRUDE RESPONSE ZONE INFORMATION (Cont'd)

STATIONS (TANK FARMS, PUMP STATIONS, etc):

Southern Oklahoma Area:	Addington Station Jefferson County, OK	Binger Station Caddo County, OK
	Camp Station Carter County, OK	Devol Station Cotton County, OK
	Cyril Station Caddo County, OK	Erin Springs Station Carter County, OK
	Erin Springs Pump Garvin County, OK	Fox Truck LACT Carter County, OK
	Graham Station Carter County, OK	Healdton Station Carter County, OK
	Hwy 7 Booster Station Comanche County, OK	Maysville Station Carter County, OK
	Pike Station Love County, OK	Ratliff City Station Garvin, OK
	Ringling Station Carter County, OK	Velma Station Caddo County, OK
	Wasson Station Carter County, OK	Wirt Station Carter County, OK

FIGURE 1.2

PIPELINE SYSTEM OVERVIEW DIAGRAM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Florida
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South Texas Crude
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www.epplp.com
Pipeline Atlas Overview
Enterprise Pump Station
Enterprise Crude Oil Pipelines
West Texas Crude
Seaway
South Texas Crude
Red River
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Coordinate System: World Mercator
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See "Asset Data Navigator" on the Enterprise Products portal for additional info and recent updates.

This section is a guide for notification procedures that should be implemented immediately after discovering a discharge incident and if possible, securing the source. Internal and external notifications are described separately for clarification purposes only. All notifications are of extreme importance and must be completed in a timely manner.

2.1 INTERNAL NOTIFICATION

Internal notifications will be conducted in accordance with the applicable Enterprise Emergency Response Plan, Section 2.1 of the Enterprise Safety Manual and as outlined in Figure 2.1.

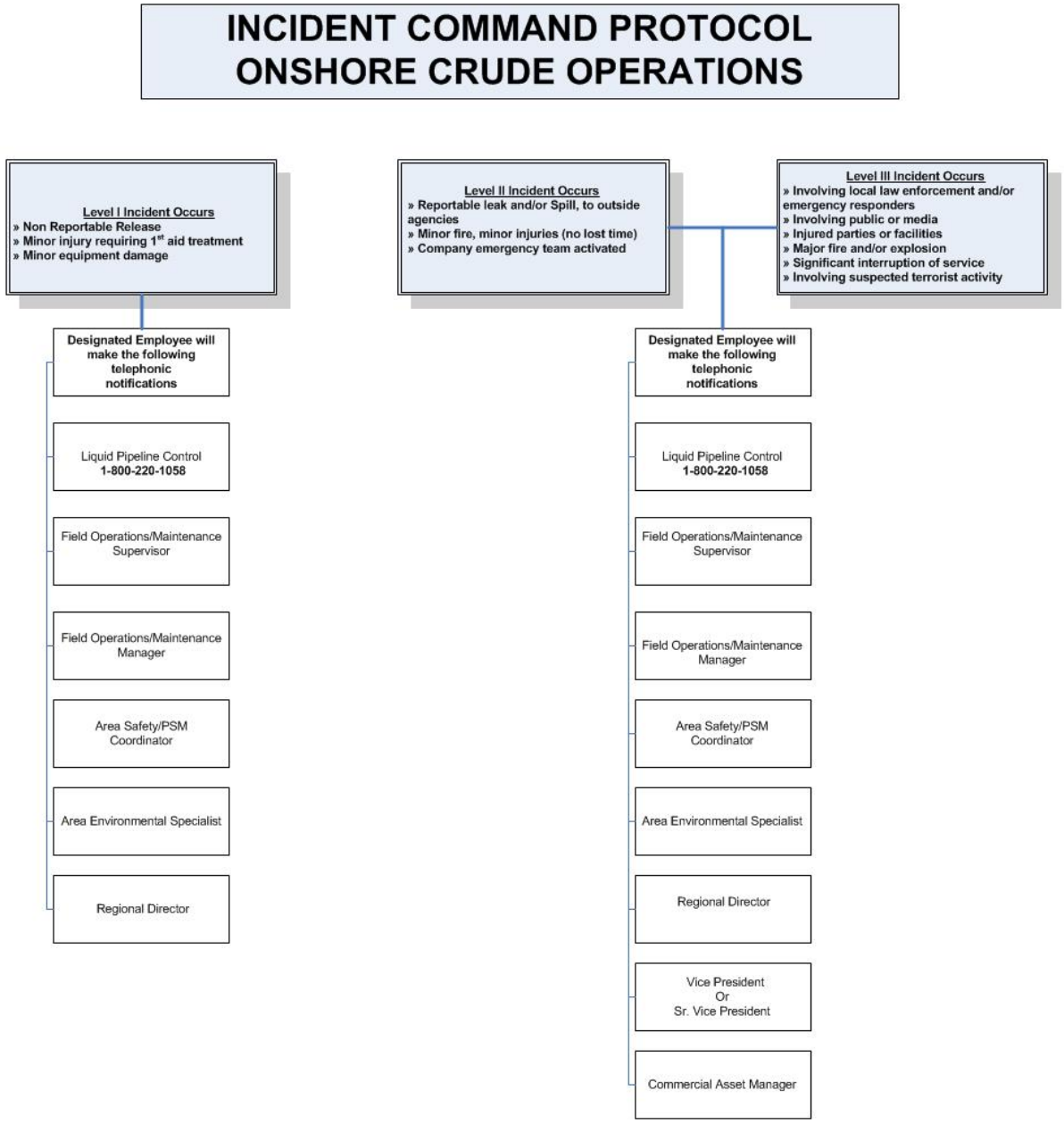
In no event shall notification be delayed because the immediate supervisor is inaccessible. Authorization is given to bypass management levels if necessary to provide timely notification to appropriate management.

Contact information for local personnel is listed in Figure 2.2.

Information to be supplied when reporting the release to Pipeline Control is listed in Figure 2.3.

SOUTH TEXAS / SEAWAY CRUDE

FIGURE 2.1
INTERNAL NOTIFICATION SEQUENCE
(Phone references are provided in Figure 2.2)



!! IMPORTANT !!

Telephonic notification to Liquid Pipeline Control will activate the next level of Incident Protocol notifications if required . This process will generate an email to a pre-determined distribution list and initiate pre-recorded telephone messages sent to Sr. Leadership.

!! IMPORTANT !!

Positive telephone contact is required. If the employee listed on the flowchart is unavailable please try an alternate Employee in the Department.

FIGURE 2.2

INTERNAL NOTIFICATION REFERENCES

SOUTH TEXAS / SEAWAY CRUDE INTERNAL NOTIFICATIONS			
POSITION/TITLE	**NAME**	**OFFICE**	**OTHER**
Regional Director	Kent Geiman	713-381-6807	713-594-8043 MBL
Field Environmental Representatives	David Williams (Texas City & Central Texas Area)	713-803-8327	281-682-3857 MBL
	Charlie Markowitz (Freeport & South Texas Area)	281-325-3225	713-410-5021 MBL
	Randolph Stuart (Cushing Area)	405-239-5716	405-208-0503 MBL
Field Safety/PSM Coordinators	John Bollom (South/Central Texas)	979-345-3461	979-248-4485 MBL
	Alan Crockett (Cushing Area)	580-229-1616	580-465-3322 MBL
TEXAS CITY AREA			
Incident Commander / Area Manager (QI)	Terry Hutson	713-450-4516	281-924-5080 MBL
Alt. Incident Commander / Area Supervisor (Alt. QI)	Greg DeLong	409-949-3706	409-370-9107 MBL
Local Responders:	Mike Honeycutt		832-347-6426 MBL
	Derek Yarbrough		832-347-6424 MBL
	Edgar Sanders		713-598-8956 MBL
	Mark Barnett		281-468-0618 MBL
	Ray Peterson		281-851-8274 MBL
FREEPORT AREA			
Incident Commander / Area Manager (QI)	Jimmy Nealy	979-237-6751	281-793-3516 MBL
Alt. Incident Commander / Area Supervisor (Alt. QI)	John Hazley	979-237-6756	281-799-7387 MBL
	Chris Yorgensen	979-237-6768	903-388-2797 MBL
Local Responders:	Jeff Farley	979-239-1397	979-383-8826 MBL
	Roy Perez	979-239-1397	713-582-6590 MBL
	Trevor Rees	979-239-1281	979-373-7546 MBL
	Johnnie Wilson	979-237-6753	979-319-2586 MBL
	Chris Fabrygel	979-239-4276	979-236-9306 MBL

FIGURE 2.2

INTERNAL NOTIFICATION REFERENCES (Cont'd)

SOUTH TEXAS / SEAWAY CRUDE INTERNAL NOTIFICATIONS (Cont'd)				
POSITION/TITLE	**NAME**	**OFFICE**	**OTHER**	
SOUTH TEXAS AREA				
Incident Commander / Area Manager (QI)	Jimmy Nealy	979-237-6751	281-793-3516	MBL
Alt. Incident Commander / Area Supervisor (Alt. QI)	Ervin Goode		979-473-0334	MBL
	Chris Chovanetz	361-798-3555	361-798-0716	
Local Responders:	Don Watts	830-875-2555	361-258-1115	MBL
	Allan Newsom	830-875-2555	361-258-1201	MBL
	Glenn Hermes	361-798-3555	361-798-6780	MBL
	Glen Ehlers	979-627-7955	979-627-5479	MBL
	Scott Wallace	361-798-3555	979-777-2643	MBL
	Jeffery "Bo" Adams	979-627-7955	979-627-5479	MBL
	Alan Newsom		361-258-1201	MBL
	James Bauer	361-798-3555	361-798-6593	MBL
	David Lewis	361-798-3555	361-772-0843	MBL
	Tim Kaiser	361-798-3555	361-258-1113	MBL
CENTRAL TEXAS AREA				
Incident Commander / Area Manager (QI)	Terry Hutson	713-393-1105	281-924-5080	MBL
Alt. Incident Commander / Area Supervisor (Alt. QI)	Ray Fitzpatrick	281-239-3331	713-516-5581	MBL
	Paul Goolsby	254-359-4195	903-390-6639	MBL
Local Responders:	Cody Medve		832-520-8373	MBL
	Ronnie Parker		713-542-7539	MBL
	Jimmy Bonner	254-359-4196	903-388-2489	MBL
	Joe Long		936-343-8780	MBL
	Malcolm Washburn	972-563-0258	214-663-4578	MBL
	Jason Powers		361-798-6646	MBL
	Tommy Lindsey		361-258-1390	MBL
	Samuel Weichert		979-777-2562	MBL

SOUTH TEXAS / SEAWAY CRUDE

FIGURE 2.2

INTERNAL NOTIFICATION REFERENCES (Cont'd)

SOUTH TEXAS / SEAWAY CRUDE INTERNAL NOTIFICATIONS (Cont'd)				
POSITION/TITLE	**NAME**	**OFFICE**	**OTHER**	
CUSHING AREA				
Incident Commander / Area Manager (QI)	Randy Bruce	918-225-3612	918-606-9828	MBL
Alt. Incident Commander / Area Supervisor (Alt. QI)	David Beene	918-225-3612	918-306-1303	MBL
Local Responders:	Todd Elton	918-225-3612	918-399-5083	MBL
	Melvin Craig	580-296-2402	405-203-9334	MBL
	Doug Freeman	918-225-3612	405-203-0010	MBL
	Greg Ladd	918-225-3612	405-203-0164	MBL
	Val Renaue	918-225-6867	405-206-7692	MBL
	Joe Wilkes	918-225-3612	405-203-3139	MBL
	Jackie Willingham	918-225-6867	405-206-7535	MBL
	Al Moffit	918-225-3612	405-203-3183	MBL

FIGURE 2.2

INTERNAL NOTIFICATION REFERENCES (Cont'd)

WEST TEXAS / RED RIVER CRUDE INTERNAL NOTIFICATIONS			
POSITION/TITLE	**NAME**	**OFFICE**	**OTHER**
Regional Director	Kent Geiman	713-381-6807	713-594-8043 MBL
Field Environmental Representative	Randolph Stuart (Red River Area)	405-239-5716	405-208-0503 MBL
Field Safety/PSM Coordinators	Jose Baldovinos (West Texas)	432-221-7707	432-556-9362 MBL
	Alan Crockett (Red River Area)	580-229-1616	580-465-3322 MBL
MIDLAND AREA			
Incident Commander / Area Manager (QI)	Dennis Andrews	432-221-7703	575-631-6744 MBL
Alt. Incident Commander / Area Supervisor (Alt. QI)	Craig Domingue	432-221-7704	713-248-7209 MBL
Local Responders:	Curtis Brown	432-221-7721	432-556-7475 MBL
	Marshall Blythe	432-221-7709	432-557-0313 MBL
	Manuel Arrellano	432-686-7493	432-631-8607 MBL
	Larry Jobe	432-221-7725	432-631-8503 MBL
	Bruno Salazar	505-393-2441	432-634-9440 MBL
SYNDER AREA			
Incident Commander / Area Manager (QI)	Dennis Andrews	432-685-9522	575-631-9531 MBL
Alt. Incident Commander / Area Supervisor (Alt. QI)	Craig Domingue	432-685-9552	713-248-7209 MBL
Local Responders:	Keith Beck	325-573-4015	325-207-0341 MBL
	Kim Billingsley	325-573-4015	325-207-0342 MBL
	Mike Davis	325-573-4015	325-207-0340 MBL

FIGURE 2.2

INTERNAL NOTIFICATION REFERENCES (Cont'd)

WEST TEXAS / RED RIVER CRUDE INTERNAL NOTIFICATIONS (Cont'd)			
POSITION/TITLE	**NAME**	**OFFICE**	**OTHER**
SOUTHERN OKLAHOMA AREA			
Incident Commander / Area Manager (QI)	Toby Price	580-229-1616	580-465-5616 MBL
Alt. Incident Commander / Area Supervisor (Alt. QI)	Chris Stroud	580-229-1616	580-264-1233 MBL
Local Responders:	Mike Harper	580-229-1616	580-467-0327 MBL
	Robert Howard	580-229-1616	580-465-0168 MBL
	Danny Veal	580-229-1616	580-513-1191 MBL
	Tommy Reynolds	580-229-1616	580-264-0020 MBL
	Ron Kinnaird	580-439-5050	580-513-1167 MBL
	Bill Eary	580-464-2269	580-512-6451 MBL
	Bobby Foraker	580-464-2269	580-512-6450 MBL
	Keith Trogdon	580-464-2269	580-512-6450 MBL
NORTH TEXAS AREA			
Incident Commander / Area Manager (QI)	Toby Price	580-229-1616	580-465-5616 MBL
Alt. Incident Commander / Area Supervisor (Alt. QI)	David Hanks	940-495-2224	940-733-9175 MBL
Local Responders:	Wayne Cranford	940-495-2224	940-631-5450 MBL
	Bruce Dulaney	940-495-2224	940-631-3676 MBL
	Kurt Adams	940-495-2224	940-733-1529 MBL
	Danny Guinn	940-567-2703	940-368-0119 MBL
	Andy Gordon	940-934-6295	940-733-1904 MBL

FIGURE 2.2

INTERNAL NOTIFICATION REFERENCES (Cont'd)

CORPORATE SUPPORT ROSTER
INTERNAL NOTIFICATIONS

DEPARTMENT/TITLE	NAME	OFFICE	ALTERNATE
Crude Pipeline Control Center	Emergency Notification	---	(800) 220-1058 24-hr
Seaway Crude Pipeline	Emergency Notification	---	(800) 331-3381 24-hr
Sr. Vice President, Northern Operations	Terry L. Hurlburt	(713) 381-8298	(713) 504-4429 MBL
Sr. Vice President, EHS&T	Kevin Bodenhamer	(713) 381-8261	(713) 582-2789 MBL
Sr. Director, Safety	Ivan Zirbes	(713) 381-1753	(281) 620-3642 MBL
Director, Technical Services	Marlene Breitenbach	(713) 381-5439	(713) 306-0935 MBL
Sr. Director, Environmental	Matthew Marra	(713) 381-6684	(281) 605-9289 MBL
Director, Pipeline Control	Jeffrey V. Myers	(281) 887-2209	(713) 962-9076 MBL
Public Affairs	Rick Rainey	(713) 381-3635	(713) 259-9214 MBL
Engineering	Glenn Petru	(713) 381-3870	(281) 389-1817 MBL
Director, Transportation Compliance	Phu Phan	(713) 381-7906	(281) 832-6252 MBL
Finance	Chris Nelly	(713) 381-4774	(832) 332-6848 MBL
Human Resources	Gary Smith	(713) 381-6898	(281) 460-9999 MBL
Purchasing	Gayle Adair	(713) 381-2867	(713) 628-0532 MBL
Sr. Land Manager	Lori Keeter	(713) 803-2555	(713) 301-0665 MBL
Manager, Liquid Control	Brian Packman	(281) 887-2227	(713) 203-6298 MBL
Insurance Claims	Scott Toth	(713) 381-6673	(713) 503-5212 MBL

CORPORATE

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.

2.2.1 Verbal Notification Requirements

Immediate internal notification is to be made in accordance with Section 2.1 when a system operational failure or other type of incident occurs. This will allow immediate evaluation and classification of incidents and prompt immediate telephonic notification as detailed in Figure 2.4 and 2.5 to the National Response Center (NRC), state agencies, local agencies, and other federal agencies as required. The information found on the Release Event Report, Figure 2.3, should be used to disseminate incident information to the appropriate agencies.

Detailed external telephonic contact information is contained in Figure 2.5 and the appropriate Enterprise Emergency Response Plan (Appendices J through N)..

For the purpose of this procedure, **immediate reporting** means reporting the instant a person has knowledge of an actual *or suspected* leak, uncontrolled release of product, any unplanned spill or other pipeline system failure. Information that causes any employee to reasonably suspect a leak or uncontrolled release of product must be immediately reported, even when the actual existence or location of a leak or release cannot yet be confirmed.

2.2.2 Written Notification Requirements

A written report is to be filed as soon as practical, but not later than 30 days after discovery of the incident to the Information Resources Manager, Office of Pipeline Safety, Pipeline and Hazardous Materials Safety Administration, US Department of Transportation. Information concerning the event shall be reported on DOT Form 7000-1 or a facsimile (a copy is provided in Appendix G). Two (2) copies of each report shall be filed. This report is to be filed for all incidents reported telephonically and other incidents required to be reported in accordance with the criteria listed below.

The information required for completing the 30-day written report will be furnished by the **Region Offices** to the **DOT Pipeline Integrity Pipeline Compliance Department** for submission to the DOT. Any subsequent or additional information that was not reported on the initial written report must be reported to the DOT Pipeline Integrity Pipeline Department by the Region Office. This information will be utilized in filing a supplemental written report to the DOT as soon as possible, but no later than 30 days after its discovery***.***

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

FIGURE 2.3
RELEASE EVENT REPORT

What information must I provide for **Emergency Releases**?

1. Your **Name**, **Title**, and **Phone Number**
2. Release **Location**, i.e. legal description, aerial marker, address, nearest city, facility name, etc.
3. Release **Verification Time** (be very specific, e.g. 4:23 AM CST)
4. **Nature** of Release (major pipeline failure, pinhole, etc.)
5. Approximate Release **Volume** (gallons, barrels, SCF, etc.)
    - If volume is unknown and evidence indicates the release may be significant
        1. Liquid Lines: Report product volume between two nearest block valves or 10 miles of pipeline
        2. Natural Gas Lines: Obtain best estimate of released volume from Operations and Field Engineering
    - If the release can be visually sighted and is not significant (weeping seal on a pump, leaking packing on an aboveground valve, small pinhole with no indication in pipeline control, etc.) the release amount will either reported as unknown or estimated using the best available information.

NOTE: For liquid lines, if in doubt, report the volume between the nearest block, or similar, valves.

6. Are there **homes nearby** or **is the public in immediate danger?**
7. **Media impacted**, i.e. soil/water/air
    - Report name of waterway if available, i.e. Dawson's Creek, etc.

NOTE: It is imperative to note if the released product has impacted surface water or threatens to impact surface water

8. Anything of **significance**, i.e. injuries, highway/railroad closures, media interest, method of notification (local fire dept., sheriff, etc.)

Always provide as much information as possible!

Definitions:

Release – the placing, discharging, spilling, percolating, draining, pumping, leaking, mixing, leaching, migrating, seeping, emitting, disposing, by-passing, or other escaping of controlled chemicals or pipeline products to the environment

FIGURE 2.4

EXTERNAL NOTIFICATION FLOWCHART

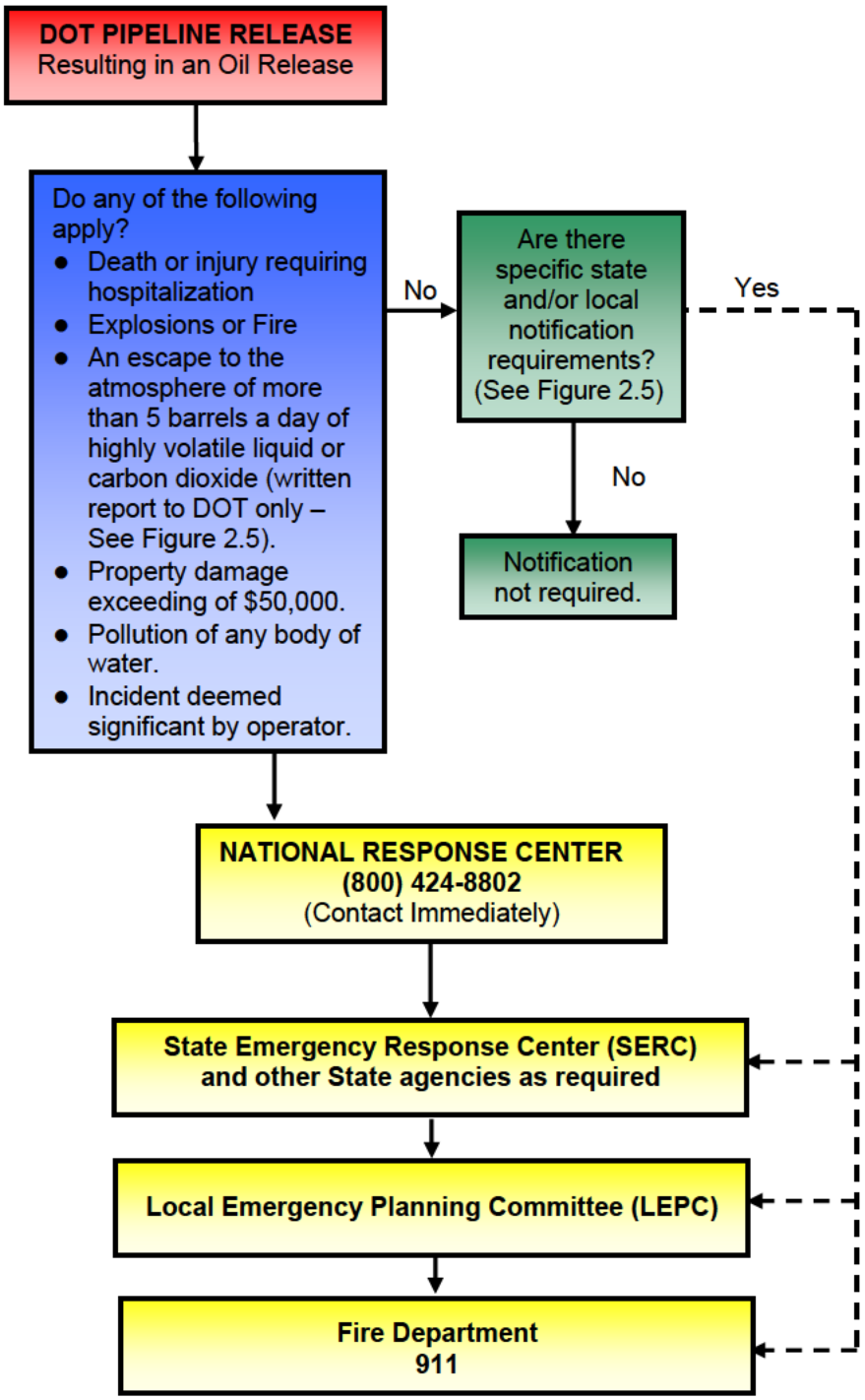


FIGURE 2.5

EXTERNAL NOTIFICATION REFERENCES

REQUIRED NOTIFICATIONS	
NATIONAL RESPONSE CENTER	
National Response Center c/o United States Coast Guard (G-RPF) 2100 2nd Street Southwest Room 2111-B Washington, D.C. 20593-0001	(800) 424-8802 (24 Hr.) (202) 267-2675 (24 Hr.) (202) 267-1322 (Fax) (202) 267-2180 (Direct)

REPORTING REQUIREMENTS

TYPE: For all spills that impact or threaten to impact navigable water or for any failure in a pipeline system that:

1. caused a death or a personal injury requiring hospitalization.
2. resulted in either a fire or explosion not intentionally set by the carrier.
3. caused estimated damage to the property of the carrier or others, or both, of a total of $50,000 or more.
4. resulted in the pollution of any stream, river, lake, reservoir, or other similar body of water that violated applicable water or adjoining shoreline, causing a discoloration or emulsion beneath the surface of the water or upon adjoining shorelines.
5. in the judgment of the carrier, was significant even though it did not meet the criteria of any other subparagraph of this paragraph **(cleared through Management).**

NOTE: A call to the NRC must also be made for spills or releases of hazardous substances that meet or exceed their RQ (Spill Release and Reporting Guide).

VERBAL: Immediate notification required.

WRITTEN: Not required

FEDERAL

FIGURE 2.5

EXTERNAL NOTIFICATION REFERENCES (Cont'd)

REQUIRED NOTIFICATIONS (FOR DOT JURISDICTIONAL FACILITIES)	
DEPARTMENT OF TRANSPORTATION	
US Dept. of Transportation Information Resources Manager Office of Pipeline Safety Pipeline and Hazardous Materials Safety Administration Room 2103, 400 Seventh Street SW Washington, DC 20590-0001 (202) 366-4566 (Fax filing)	(800) 424-8802 (24 Hr.) (202) 366-4433 (Direct) (202) 366-3666 (Fax) (713) 272-2859 (Southwest) (816) 329-3800 (Central) (202) 260-8500 (Eastern)

REPORTING REQUIREMENTS

TYPE: In addition to the reporting of accidents to the NRC, a written accident report (PHMSA Form 7000-1, provided in Appendix G) must be submitted for releases resulting in any of the following:

1. Explosion or fire not intentionally set by the operator.
2. Release of five gallons or more of hazardous liquid or carbon dioxide, except that no report is required for a release of less than five barrels resulting from a pipeline maintenance activity if the release is:
   a. not one described under the NRC's reporting conditions.
   b. confined to Enterprise property or pipeline right-of-way; and
   c. cleaned up promptly.
3. Death of any person.
4. Personal injury necessitating hospitalization.
5. Estimated property damage, including cost of cleanup and recovery, value of lost product, and damage to the property of the operator or others, or both, exceeding $50,000.

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 above criteria must be reported on PHMSA Form 7000-1. The report must be sent to DOT no later than 30 days after the release. Changes or additions to the original report (PHMSA Form 7000-1) must be filed as a supplemental report within 30 days.

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)	
Area Office	(800) 321-6742 (24 Hr.)

REPORTING REQUIREMENTS

TYPE: Fatality or personal injury (3 or more hospitalizations)

VERBAL: Immediately

WRITTEN: As requested

FEDERAL

FIGURE 2.5

EXTERNAL NOTIFICATION REFERENCES (Cont'd)

FEDERAL NOTIFICATIONS – ALL STATES		
NON-REQUIRED ASSISTANCE/ADVISORY NOTIFICATIONS (Outside Resources)		
AGENCY	**LOCATION**	**OFFICE/ALTERNATE**
CHEMTREC / Bureau of Explosives	National	(800) 424-9300
Federal Bureau of Investigation Washington Metropolitan Field Office 601 4th Street, N.W. Washington, D.C. 20535-0002	National	(202) 324-3000 (24-hour)
U.S. Environmental Protection Agency - EPA Region 6 1445 Ross Avenue, Suite 1200 Dallas, TX 75202-2733	AR, LA, NM, OK and TX	(866) 372-7745 (24-hour)
U. S. Coast Guard Sector	Houston, TX	(713) 671-5113 (24-hour Houston/Galveston)
	Port Arthur, TX	(409) 723-6500 (409) 719-5000
	Corpus Christi, TX	(361) 939-6393
	Galveston, TX	(409) 978-2708 (409) 682-1264 (409) 978-2759 (Facilities)
U.S. Coast Guard District Response Group (DRG) and District Response Advisory Team (DRAT) Commander (mep) Eighth Coast Guard District Hale Boogs Federal Bldg. 501 Magazine Street New Orleans, LA 70130-3396	NM, OK, TX	(504) 589-6901 (daytime) (504) 589-6225 (24-hour)
U.S. Department of Interior Office of Environmental Policy & Compliance	NM, OK, TX	(505) 766-3565
U.S. Fish and Wildlife Service Washington DC Director	National	(202) 208-7535 (202) 208-4717
U.S. Fish and Wildlife Service Region 2 Office	NM, OK, TX	(505) 248-6282

FEDERAL

FIGURE 2.5

EXTERNAL NOTIFICATION REFERENCES (Cont'd)

FEDERAL NOTIFICATIONS – ALL STATES (Cont'd)		
NON-REQUIRED ASSISTANCE/ADVISORY NOTIFICATIONS (Outside Resources) (Cont'd)		
AGENCY	**LOCATION**	**OFFICE/ALTERNATE**
U.S. Fish and Wildlife Service Dr. Brian Cain, Contaminant Specialist	Houston, TX	(281) 286-8282
Federal Aviation Administration Approach Supervisor On Duty	Dallas, TX – DFW	(972) 615-2500
	Dallas, TX – Dallas Love	(214) 353-1500
	Houston, TX – IAH	(281) 209-8660
U.S. Department of Commerce NOAA SSC	National	(206) 526-6317
National Oceanic and Atmospheric Administration Damage Assessment Center	National	(301) 713-3038 x110
National Oceanic and Atmospheric Administration Coastal References	National	(214) 665-8365
National Oceanic and Atmospheric Administration National Marine Fisheries Service	National	(206) 526-4911 (206) 526-4563
National Audubon Society National Office	New York, NY	(212) 979-3000
Sierra Club National Office	San Francisco, CA	(415) 977-5500
National Wildlife Federation National Office	Vienna, VA	(703) 438-6000
Ducks Unlimited (Conserves, Restore & Manages Wetlands Only) National Office	Memphis, TN	(901) 758-3825

FEDERAL

FIGURE 2.5

EXTERNAL NOTIFICATION REFERENCES (Cont'd)

NEW MEXICO

REQUIRED NOTIFICATIONS	
EMERGENCY NOTIFICATIONS	
NEW MEXICO STATE EMERGENCY RESPONSE COMMISION (SERC)	
Department of Public Safety P.O. Box 1628 Santa Fe, NM 87504 13 Bataan Blvd. Santa Fe, NM 87508 (Hotline will notify applicable State agencies pertaining to the spill source; follow-up calls to the NMED and NMEMNRD is advisable.)	(505) 827-9329 (24-hour) (505) 476-9622
REPORTING REQUIREMENTS TYPE: Any amount of any material in such quantity as may with reasonable probability injure or be detrimental to human health, animal or plant life, or property, or may unreasonably interfere with the public welfare or the use of property. New Mexico has not established reportable quantities. VERBAL: As soon as possible but no more than 24 hours after discovery. WRITTEN: As required by the Agency.	
NON-EMERGENCY NOTIFICATIONS	
NEW MEXICO ENVIRONMENT DEPARTMENT – HAZARDOUS WASTE BUREAU	
2905 Rodeo Park Dr. East, Building 1 Santa Fe, NM 87505	(505) 428-2500 (Business Hours) (866) 428-6535 (24 Hr Voice Mail)
REPORTING REQUIREMENTS TYPE: Any release as New Mexico has not established reportable quantities. VERBAL: Within twenty-four (24) hours of discovery. WRITTEN: As required by the Agency.	

NEW MEXICO

FIGURE 2.5

EXTERNAL NOTIFICATION REFERENCES (Cont'd)

NEW MEXICO

NON-EMERGENCY NOTIFICATIONS (Cont'd)	
NEW MEXICO ENERGY, MINERALS, AND NATURAL RESOURCE DEPARTMENT	
Oil Conservation Division 1220 South St. Francis Drive Santa Fe, NM 87505	(505) 476-3440 (Business Hours) (505) 393-6161 (District 1-Hobbs)

REPORTING REQUIREMENTS

MAJOR RELEASE

TYPE: Any unauthorized release of volume, excluding natural gases, in excess of 25 barrels. Any unauthorized release of any volume which results in a fire; will reach the water course; may with reasonable probability endanger public health; or results in substantial damage to property or the environment; an unauthorized release of natural gases in excess of 500 mcf; or a release of any volume which may with reasonable probability be detrimental to water or cause an exceedence of the standards in 19 NMAC 15.A.19.B(1), B(2) or B(3). [3/15/97]

VERBAL: As soon as possible, but within twenty-four (24) hours of discovery.

WRITTEN: Submit Form C-141 to NMEMNRD.

MINOR RELEASE

TYPE: Any unauthorized release of volume greater than 5 barrels but not greater than 25 barrels; or greater than 50 mcf but less than 500 mcf of natural gases. [3/15/97]

VERBAL: Written notification only.

WRITTEN: Submit Form C-141 to NMEMNRD within 15 days.

NEW MEXICO

FIGURE 2.5

EXTERNAL NOTIFICATION REFERENCES (Cont'd)

NEW MEXICO

See the appropriate Enterprise Emergency Response Plan for local emergency responder contact information.

FIGURE 2.5

EXTERNAL NOTIFICATION REFERENCES (Cont'd)

OKLAHOMA

OTHER POTENTIAL REQUIRED NOTIFICATIONS	
OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY	
Oklahoma Department of Environmental Quality Environmental Complaints and Local Services P.O. Box 1677 Oklahoma City, OK 73101-1677	(405) 702-6203 (24-hour) (800) 522-0206 (24-hour)

REPORTING REQUIREMENTS

TYPE: Any oil discharge that has impacted waters of the state or release of a hazardous substance in an amount equal to or greater than the reportable quantity.

VERBAL: Immediately.

WRITTEN: A follow-up report shall be made to the Department within 10 days after the discharge is first reported. A copy of Form PHMSA F 7000-1 (included in this section) submitted to DOT/PHMSA will suffice. Written reports should contain the following:

1. Location (legal description if available).
2. Material spilled or discharged and the amount.
3. Environment affected or endangered (land, air, stream, etc.).
4. Probable cause of spill or discharge.
5. Steps taken for removal.
6. Measures taken to insure the discharge cannot reasonably reoccur.

OKLAHOMA DEPT. OF WILDLIFE CONSERVATION – NATURAL RESOURCES SECTION	
1801 N. Lincoln Oklahoma City, OK 73105	(405) 521-4616 (Office Hours) (405) 990-5048 (After Hours)

REPORTING REQUIREMENTS

TYPE: Spill damaging wildlife.

VERBAL: Immediately. The verbal report should contain the following:

1. Date, time, and location of release.
2. Industry Contact: Name and phone number, name of responsible party if different from industry contact.
3. Type of material released and circumstances surrounding the release.
4. Any remedial measures.
5. If drinking water supply is potentially involved, contact name and phone number, if known.
6. Any additional information requested.

WRITTEN: As requested by the agency.

OKLAHOMA

FIGURE 2.5

EXTERNAL NOTIFICATION REFERENCES (Cont'd)

OKLAHOMA

OTHER POTENTIAL REQUIRED NOTIFICATIONS (Cont'd)	
OKLAHOMA CORPORATION COMMISSION	
Oil and Gas Conservation Division District Field Office	
District I - Bristow Office (Northeastern Oklahoma) 115 W 6th Street Bristow, OK 74010-0779	(918) 367-3396
District II - Kingfisher Office (Northwestern Oklahoma) 101 South 6th Street Kingfisher, OK 73750-1107	(405) 375-5570
District III - Duncan Office (Southwestern Oklahoma) 1020 Willow St. Duncan, OK 73533	(580) 255-0103
District IV - Ada Office (Southeastern Oklahoma) 703 N. Broadway Ada, OK 74820-3437	(580) 332-3441
Oklahoma City Office (State Office) 2101 N. Lincoln Blvd. Oklahoma City, OK 73105	(405) 521-2302

REPORTING REQUIREMENTS

TYPE: Any nonpermitted discharge of deleterious substances of 10 barrels or more (single event) or any discharge of petroleum, or petroleum based products, including crude oil, regardless of quantity, to the waters of the state.

VERBAL: Within 24 hours of discovery to the appropriate District Office.

WRITTEN: Within 10 working days, file a written report with the appropriate district office and include the following:

1. Name of party reporting, firm name, and telephone number.
2. Legal location.
3. Lease name.
4. Operator.
5. Circumstances surrounding discharge and whether discharge was to water or soil.
6. Date of occurrence.
7. Volumes discharged.
8. Types of materials discharged.
9. Method of cleanup (if any) undertaken and completed.
10. Volumes recovered.

OKLAHOMA

FIGURE 2.5

EXTERNAL NOTIFICATION REFERENCES (Cont'd)

OKLAHOMA

See the appropriate Enterprise Emergency Response Plan for local emergency responder contact information.

FIGURE 2.5

EXTERNAL NOTIFICATION REFERENCES (Cont'd)

TEXAS

OTHER POTENTIAL REQUIRED NOTIFICATIONS (Cont'd)	
TEXAS EMERGENCY RESPONSE CENTER (TERC)	
Texas Commission on Environmental Quality (Hotline will notify TCEQ, TGLO, TRRC as applicable; follow-up calls to all applicable agencies is advisable.)	(800) 832-8224 (24 Hr.)
REPORTING REQUIREMENTS TYPE: All spills of petroleum products into waters of the state and discharges onto land that meet or exceed 210 gallons (25 gallons for Non-PST exempt facilities) or exceed a RQ. VERBAL: Immediately WRITTEN: As the agency may request depending on circumstances	
TEXAS RAILROAD COMMISSION (TRRC)	
Oil and Gas Division 1701 N. Congress P.O. Box 12967 Austin, TX 78711-2967	(512) 463-6788 (24 Hr.) (emergency)
TRRC District Offices:	
District 1 San Antonio	(210) 227-1313
District 2 San Antonio	(210) 227-1313
District 3 Houston	(713) 869-5001
District 4 Corpus Christi	(361) 242-3113
District 5 Kilgore	(903) 984-3026
District 6 Kilgore	(903) 984-3026
District 7B Abilene	(915) 677-3545
District 7C San Angelo	(325) 657-7450
District 8 Midland	(432) 684-5581
District 8A Midland	(432) 684-5581
District 9 Wichita Falls	(940) 723-2153
District 10 Pampa	(806) 665-4217

TEXAS

FIGURE 2.5

EXTERNAL NOTIFICATION REFERENCES (Cont'd)

TEXAS

OTHER POTENTIAL REQUIRED NOTIFICATIONS (Cont'd)	
TEXAS RAILROAD COMMISSION (TRRC) – Cont'd	
REPORTING REQUIREMENTS TYPE: In the case of a fire, leak, spill, or break causing loss of over 210 gallons. For pipeline incidents reportable to the NRC, notify the TRRC Pipeline Safety Section, District Office by telephone. VERBAL: Immediate notification to the District Office WRITTEN: File Form H-8 (located in Appendix G) in duplicate when appropriate measures have been taken, within 30 days following the date of the incident.	
TEXAS GENERAL LAND OFFICE	
Oil Spill Program 1700 N. Congress Ave. Austin, TX 78701	(512) 475-1575 (800) 832-8224 (alternate)
REPORTING REQUIREMENTS TYPE: Any unauthorized discharge or threat of discharge into the coastal environment. VERBAL: Within one (1) hour of discovery. WRITTEN: Within sixty (60) days after the response actions have been declared complete.	
US BUREAU OF RECLAMATION	
US Department of the Interior, Bureau of Reclamation – Great Plains Region Oklahoma – Texas Area Office 5316 Hwy 290 W, Suite 510 Austin, TX 78735-8931	(512) 899-4150 (512) 899-4179 (Fax)
REPORTING REQUIREMENTS TYPE: Notification must be made to the Bureau of Reclamation for releases impacting reservoirs. VERBAL: Immediate WRITTEN: As requested by agency.	

FIGURE 2.5

EXTERNAL NOTIFICATION REFERENCES (Cont'd)

TEXAS

See the appropriate Enterprise Emergency Response Plan for local emergency responder contact information.

FIGURE 2.5

EXTERNAL NOTIFICATION REFERENCES (Cont'd)

LOCAL EMERGENCY SERVICES		
DIAL 911 for All Police, Fire, and Ambulance Emergencies		
USCG CLASSIFIED OIL SPILL REMOVAL ORGANIZATIONS (OSRO)		
COMPANY	**LOCATION**	**TELEPHONE**
SWS Environmental Services	P.O. Box 872 Eastland, TX 76448 *(Corporate)*	(877)-742-4215 (24 Hr.) (254) 629-1718 (254) 629-8525 (Fax)
	9204 US Hwy 287 Fort Worth, TX 76131 *(Field)*	(817) 847-1333
	1700 North E Street LaPorte, TX 77571 *(Field)*	(281) 867-9131
	414 FM 1103 Cibolo, TX 78108 *(Field)*	(210) 566-8366
Anderson Pollution Control	1011 W. Lewis, Suite A Conroe, TX 77301-2219	866-609-6208 (24 Hr) 936-539-2099
	2407 Albright Dr. Houston, TX 77017	281-479-5300
	133 Crowder Lane Longview, TX 75603	903-643-8800
	949 Industrial Park Drive Victoria, TX 77905	361-573-7400
T&T Marine Salvage	9723 Teichmans Point Galveston, TX 77554	(409) 744-1222 (24 Hr.) (409) 744-5218 (Fax)
Clean Channel Association	3110 Pasadena Freeway Pasadena, TX 77503	(713) 534-6195 (24 Hr.)
National Response Corporation	3500 Sunrise Hwy. Ste. T103 Great River, NY 11739	(800) 899-4672 (24 Hr.) (631) 224-9141
Garner Environmental Services, Inc.	1717 W 13th St. Deer Park, TX 77536 *(Corporate)*	(281) 930-1200 (24 Hr.) (800) 424-1716 (24 Hr.)
	3197 Main Street LaMarque, TX 77568 *(Field)*	(409) 935-0308 (24 Hr.)
	5048 Houston Ave. Pt. Arthur, TX 77640 *(Field)*	(409) 983-5646 (24 Hr.)

FIGURE 2.5

EXTERNAL NOTIFICATION REFERENCES (Cont'd)

ADDITIONAL RESPONSE RESOURCES		
COMPANY	**LOCATION**	**TELEPHONE**
Spill Response Support		
Agricultural Services, Inc (ASI) Vacuum truck services	Texarkana, TX	(800) 268-4790
Heritage Environmental Services, Inc.	1840 North 105th Ave. Tulsa, OK 74116 *(Field)*	(800) 487-7455 (24 Hr.) (877) 436-8778
A & M Engineering and Environmental/Mid-Way Environmental Services, Inc	Stroud, OK	(888) 571-1842 (918) 968-2796
Talon LPE	Midland, TX	(866) 742-0742
Bronco Environmental LLC	Longview, TX	(903) 297-0552
Dillon Environmental Services	Ardmore, OK	(580) 228-5304
Eco-Logical Environmental	Amarillo, TX	(806) 358-7484
Enviro-Clean Services LLC	Oklahoma City, OK	(405) 728-9575
E.D. Walton Construction Co, Inc.	Snyder, TX	(325) 573-0146
Palacious Marine	Palacious, TX	(361) 648-7151
USA Environmental LP	Houston, TX	(713) 425-6905
Cooperative/Mutual Aid Resources		
Clean Channel Association	Houston, TX	(713) 534-6195
Wildlife Rescue and Rehabilitation		
International Bird Rescue Research Center	National	(707) 207-0380 X 109
Wildlife Rehab & Education		281-332-8319
Wildlife Response Services		713-705-8319
Planning and Incident Support		
O'Brien's/Response Management Associates, Inc.	Houston, TX	(985) 781-080 (24 Hr.) (281) 320-9796
Natural Resource Damage Assessment (NRDA) Contractor		
ENTRIX, Inc.	Houston, TX	(800) 476-5886 (24 Hr.) (800) 368-7511 (713) 666-6223

3.0 RESPONSE ACTIONS

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 release of product. 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, personnel and public safety is first priority**. Guidelines for other scenarios such as bomb threats, natural disasters, etc., are included in the appropriate Enterprise Emergency Response Plan.

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 the Local Response Team 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

3.1 INITIAL RESPONSE ACTIONS (Cont'd)

FIRST COMPANY PERSON NOTIFIED/ON SCENE

- _____ Follow the appropriate ***"Specific Incident Response Checklist"*** in Figure 3.1 and ***"Product Specific Response Considerations"*** in Figures 3.2, 3.3 and Appendix I (MSDSs).
- _____ Notify **Company Management** of the incident.

AREA MANAGEMENT

- _____ **Evaluate the Severity**, Potential Impact, Safety Concerns, and Response Requirements based on the initial data provided by the first person on scene.
- _____ Utilize local emergency services as necessary (police, fire, medical).
- _____ 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 **Local Response Team and 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, as appropriate.
- _____ 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 Figures 3.2 and 3.3.

LOCAL RESPONSE TEAM

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

REGIONAL ENVIRONMENTAL COORDINATOR

- _____ Perform notifications as per Figure 2.1.

INITIAL RESPONSE

FIGURE 3.1

SPECIFIC INCIDENT RESPONSE CHECKLIST

Remember, Without Exception, Personnel Safety Is The First Priority. Excessive Exposure To The Vapor And Liquid Stages Of The Spilled Product Should Be Avoided.

INITIAL RESPONSE

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

All personnel are reminded that outsiders other than emergency services will not be allowed in the area during the time of an emergency, and that statements issued to the media or other interested parties should be given by designated Company Management. Be courteous with media representatives and direct them to the designated spokesman.

FIGURE 3.1

SPECIFIC INCIDENT RESPONSE CHECKLIST (Cont'd)

LINE BREAK OR LEAK, SPECIFIC RESPONSE

- _____ Shut down pumping equipment.
- _____ Close upstream and downstream block valves.
- _____ Mitigate spreading of the product, as the situation demands. Potential containment strategies include:
  - Earthen dike/berm
  - Ditching
  - Spreading sorbent material over the spill
- _____ Prevent the spill from entering the waterways, sewer, etc. to the greatest extent possible.
- _____ Determine the direction and expected duration of spill movement. Refer to the maps in Section 6.0.
- _____ If located within containment area, ensure that drainage valve(s) is “closed”.
- _____ If the spill escapes the containment area, review the location of socio-economic and environmentally sensitive areas identified in Section 6.0 and the ACP. Determine which of these may be threatened by the spill and direct the response operation to these locations. Initiate protection and recovery actions.
- _____ Qualified personnel should utilize Combustible Gas Indicator, O_2 meter, proper colormetric indicator and/or other air sampling measurements to assure that areas are safe to enter for continued response operations.
- _____ Drain the line section, as the situation demands.
- _____ Inform local operators such as utilities, telephone company, railway.
- _____ Clean up spilled product to eliminate any possible environmental problems. Be alert for underground cables.
- _____ Make all necessary repairs.
- _____ Return the line/rack to service when repairs are complete.
- _____ Complete follow-up and written reporting, as the situation demands.

FIGURE 3.1

SPECIFIC INCIDENT RESPONSE CHECKLIST (Cont'd)

STORAGE TANK LEAK, SPECIFIC RESPONSE

- _____ Shut down all tank farm product movement operations and isolate the tank.
- _____ Initiate Confined Space Entry procedures, as applicable.
- _____ Ensure that the containment area drainage valve(s) is “closed”.
- _____ If possible, block drainage of spilled material from traveling offsite.
- _____ If near tank bottom, consider filling tank with water and maintain water bottom to suspend the discharge.
- _____ Determine the direction and expected duration of spill movement. Refer to the maps in Section 6.0.
- _____ If the spill escapes the containment area, review the location of socio-economic and environmentally sensitive areas identified in Section 6.0 and the ACP. Determine which of these may be threatened by the spill and direct the response to these locations. Initiate protection and recovery actions.
- _____ Qualified personnel should utilize Combustible Gas Indicator, O_2 meter, proper colormetric indicator and/or other air sampling measurements to assure that areas are safe to enter for continued response operations.
- _____ Stop all traffic in hazardous area (inside and outside of property boundaries), as the situation demands.
- _____ Inform local operators such as utilities, telephone company, railway.
- _____ Remove product from containment area (at a sump or in a low area) with an explosion proof pump, oil skimmer, and/or vacuum truck w/ skimmer attachments.
- _____ If applicable, process remaining product through the separator system.
- _____ Clean up product spill to eliminate any possible environmental problems. Be alert for underground cables.
- _____ Stockpile waste for eventual disposal.
- _____ Make all necessary repairs. Return the line/tank to service when repairs are complete and tested.
- _____ Complete follow-up and written reporting, as the situation demands.

FIGURE 3.2

FLAMMABLE LIQUIDS (Non-Polar/Water-Immiscible)

The following information is intended to provide the initial responder(s) with data that may be useful in making quick decisions and executing prompt response actions. The information is intended for guideline purposes only.

PRODUCTS **Crude Oil**

HAZARD IDENTIFICATION / RECOGNITION

GUIDE NO. 128

DANGERS

- HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a "P" may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.
- Substance may be transported hot.

HEALTH

- Move victim to fresh air. Call 911 or emergency medical service.
- Apply 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.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved, and take precautions.

PUBLIC SAFETY

- Isolate spill or leak area immediately for at least 50 meters (160 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

EVACUATION

Large Spill

- Consider initial downwind evacuation for at least 300 meters (1,000 feet).

Fire

- 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 2004.

FIGURE 3.3

GASES – TOXIC - FLAMMABLE (Extreme Hazard)

The following information is intended to provide the initial responder(s) with data that may be useful in making quick decisions and executing prompt response actions. The information is intended for guideline purposes only.

PRODUCTS **Hydrogen Sulphide**

HAZARD IDENTIFICATION / RECOGNITION

GUIDE NO. 117

DANGERS

- TOXIC; Extremely Hazardous.
- May be fatal if inhaled or absorbed through skin.
- Initial odor may be irritating or foul and may deaden your sense of smell.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire will produce irritating, corrosive and/or toxic gases.
- Runoff from fire control may cause pollution.

HEALTH

- Move victim to fresh air. Call 911 or emergency medical service.
- Apply artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.
- **Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.**
- Remove and isolate contaminated clothing and shoes.
- Clothing frozen to the skin should be thawed before being removed.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- In case of burns, immediately cool affected skin for as long as possible with cold water.
- Do not remove clothing if adhered to skin.
- Keep victim warm and quiet.
- Keep victim under observation.
- Effects of contact or inhalation may be delayed.
- Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

PUBLIC SAFETY

- Isolate spill or leak area immediately for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along the ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.
- Ventilate closed spaces before entering.

EVACUATION

Large Spill

- Consider initial downwind evacuation for at least 2.1 kilometers (1.3 miles) during the day and at least 6.2 kilometers (3.9 miles) at night.

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1,600 meters (1 mile) in all directions; also, consider initial evacuation for 1,600 meters (1 mile) in all directions.

Information provided by the Emergency Response Guidebook 2004.

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 which 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

After initial response has been taken to stop further spillage and notifications made to the required agencies, the Company will begin spill containment, recovery, and disposal operations.

The Incident Commander will assess the size and hazards of the spill. The type of product, the location of the spill, and the predicted movement of the spill will be considered.

Based on this assessment, additional clean-up personnel and equipment will be dispatched to the site and deployed to control and contain the spill. Boom may be deployed in waterways to contain the spill and to protect socio-economic and environmentally sensitive areas. Booms may also be used in waterways to deflect or guide the spill to locations where it can more effectively be cleaned up using skimmers, vacuum trucks, or sorbent material. Clean-up equipment and material will be used in the manner most effective for rapid and complete clean-up of all spilled product.

Response and cleanup will continue until all recoverable product is removed, the environment is returned to its pre-spill state or receives closure from the appropriate regulatory agency, and the unified command of the Company Incident Commander and the Federal and/or State On-Scene Coordinators determine that further response and cleanup is no longer necessary.

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, Facilities have limited capacity to store recovered product and water. Separated product is pumped to trucks to be carried to the Facility for processing.
- Oily debris will be segregated on site and containerized for temporary storage prior to disposal in accordance with RCRA/CERCLA regulations.
- 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 Field Environmental Representative or designated contractor 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 PROCEDURES

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 on the pipeline and the response operations.

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

- All employees/contractors must have received orientation from the applicable Emergency Response 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.

3.6 SAFETY AWARENESS (Cont'd)

3.6.1 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 Area 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.

3.6.2 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.
- Calibration of instruments should be performed before use.
- Air monitoring measurements which are to be made prior to entry into the spill area include:
  - Oxygen content
  - Lower Explosive Limit (LEL)
  - Benzene level
  - Hydrogen Sulfide
- 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.

3.6 SAFETY AWARENESS (Cont'd)

3.6.2 Air Monitoring (Cont'd)

- After assuring that there are no hazards relating to explosion or oxygen depletion, sampling for benzene shall dictate the appropriate respiratory devices to be used by persons entering the area as follows:

- The Incident Commander is responsible for industrial hygiene monitoring in the post discovery period.

3.6.3 Decontamination

Through training programs, Facility 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 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.

3.6 SAFETY AWARENESS (Cont'd)

3.6.4 Personal Protective Equipment (PPE)

The following represents OSHA/EPA 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)	
LEVEL A ● Self Contained Breathing Apparatus (SCBA) (worn inside suit) ● Encapsulated Chemical Protective Suit ● Chemical Protective Gloves ● Chemical Protective Boots ● Hard Hat	**LEVEL B** ● SCBA (worn outside suit) ● Chemical Protective Suit w/Hood ● Chemical Protective Boots ● Chemical Protective Gloves ● Hard Hat
LEVEL C ● Air Purifying Respirator (APR) ● APR ½ Face / Full Face ● Hard Hat ● Glasses (worn with ½ face APR) ● Chemical Protective Boots ● Chemical Protective Gloves ● Chemical Protective Suit/Tyvek	**LEVEL D** ● Hard Hat ● Safety Glasses ● Work Uniform / Clothes ● Leather Gloves ● Safety Boots ● Nomex

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.

3.7 EMERGENCY MEDICAL TREATMENT AND FIRST AID (Cont'd)

- **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

This section describes organizational features and duties of the Local Response Team and the broader Corporate Rapid Response Team.

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

First response to an incident at the Facility will be provided by the Local Response Team. The Corporate Rapid Response 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 Corporate Rapid Response Team.

These response teams will use the National Incident Command System ("NIMS") for the corporate 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.

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.
- Notify all response personnel, as needed.
- Identify the character, exact source, amount, and extent of the release, as well as the other items needed for notification.
- Notify and provide necessary information to the appropriate Federal, State, and Local authorities with designated response roles, including the National Response Center (NRC), State Emergency Response Commission (SERC), and local response agencies.
- Assess the interaction of the spilled substance with water and/or other substances stored at the Facility and notify response personnel at the scene of that assessment.

4.2 QUALIFIED INDIVIDUAL (Cont'd)

- Assess the possible hazards to human health and the environment due to the release. This assessment must consider both the direct and indirect effects of the release (i.e., the effects of any toxic, irritating, or asphyxiating gases that may be generated, or the effects of any hazardous surface water runoffs from water or chemical agents used to control fire and heat-induced explosion).

- Assess and implement prompt removal actions to contain and remove the substance released.

- Coordinate rescue and response actions as previously arranged with all response personnel.

- Activate and engage in contracting with oil spill response organizations.

- Use authority to immediately access company funding to initiate cleanup activities.

- Direct cleanup activities until properly relieved of this responsibility.

- 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 (LRT)

The first Company person on scene will function as the Incident Commander until relieved by an authorized supervisor who will then assume the position of Incident Commander (IC). 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 number of positions/personnel required to staff the LRT 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.

The LRT, 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 LRT 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.

4.3 LOCAL RESPONSE TEAM (LRT) (Cont'd)

The LRT is basically organized according to the NIMS Incident Command System principles led by the Incident Commander; the team is composed of the following principal components:

- Command
- Planning
- Finance
- Operations
- Logistics

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 Corporate Rapid Response 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 4.2.

4.4 CORPORATE RAPID RESPONSE TEAM (CRRT)

The CRRT is staffed by specially trained personnel from various facility/corporate locations, and by various contract resources as the situation requires. The role of the CRRT is to support the LRT by providing resources and technical expertise that may not be readily available at the local level. The CRRT will provide support on an as-needed basis as determined by the Incident Commander. CRRT members would either provide short term advisory assistance or long term support depending upon the type and duration of the incident. The CRRT may be asked to fill roles/positions under the NIMS Incident Management System or provide other support functions as the situation demands.

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

4.5 INCIDENT COMMAND SYSTEM (Cont'd)

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

Section 3.5.3 of the attached Emergency Response Plans and describe the roles and responsibilities for the various personnel.

4.6 UNIFIED COMMAND

As a component of an ICS, 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 UC links the organizations responding to the incident and provides a forum for the Responsible Party and responding agencies to make consensus decisions. Under the UC, the various jurisdictions and/or agencies and responders may blend together throughout the organization to create an integrated response team. The ICS process requires the UC 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 UC. The UC may change as an incident progresses, in order to account for changes in the situation.

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

UC representatives must be able to:

- Agree on common incident objectives and priorities
- Have the capability to sustain a 24-hour-7-day-a-week commitment to the incident
- Have the authority to commit agency or company resources to the incident

4.6 UNIFIED COMMAND (Cont'd)

- 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 Information Officer or Joint Information Center
- Agree on logistical support procedures
- Agree on cost-sharing procedures

4.7 DISCHARGE CLASSIFICATION

The severity of a discharge will have a bearing on the level of management involvement necessary and the extent of resource mobilization. The following definitions provide guidance in the early classification of discharges:

LEVEL I EVENT
Incident Command will normally be assumed by Area Management. Regional and Corporate Office support will be utilized on an as needed basis.
Exposure
The potential public and environmental exposure is moderate. The type and quantity of material released, while considering the overall nature of the incident (e.g. fire, proximity to private dwellings, etc.), will have moderate impact on the public and/or the environment.
Degree of Control
The incident can be controlled in a short period of time through implementation of the local resources available to the Facility (including contract resources).
Governmental Involvement
Government involvement will be moderate and generally restricted to State and local levels.
Media Involvement
Media interest will be moderate and generally restricted to State and Local levels.

4.7 DISCHARGE CLASSIFICATION (Cont'd)

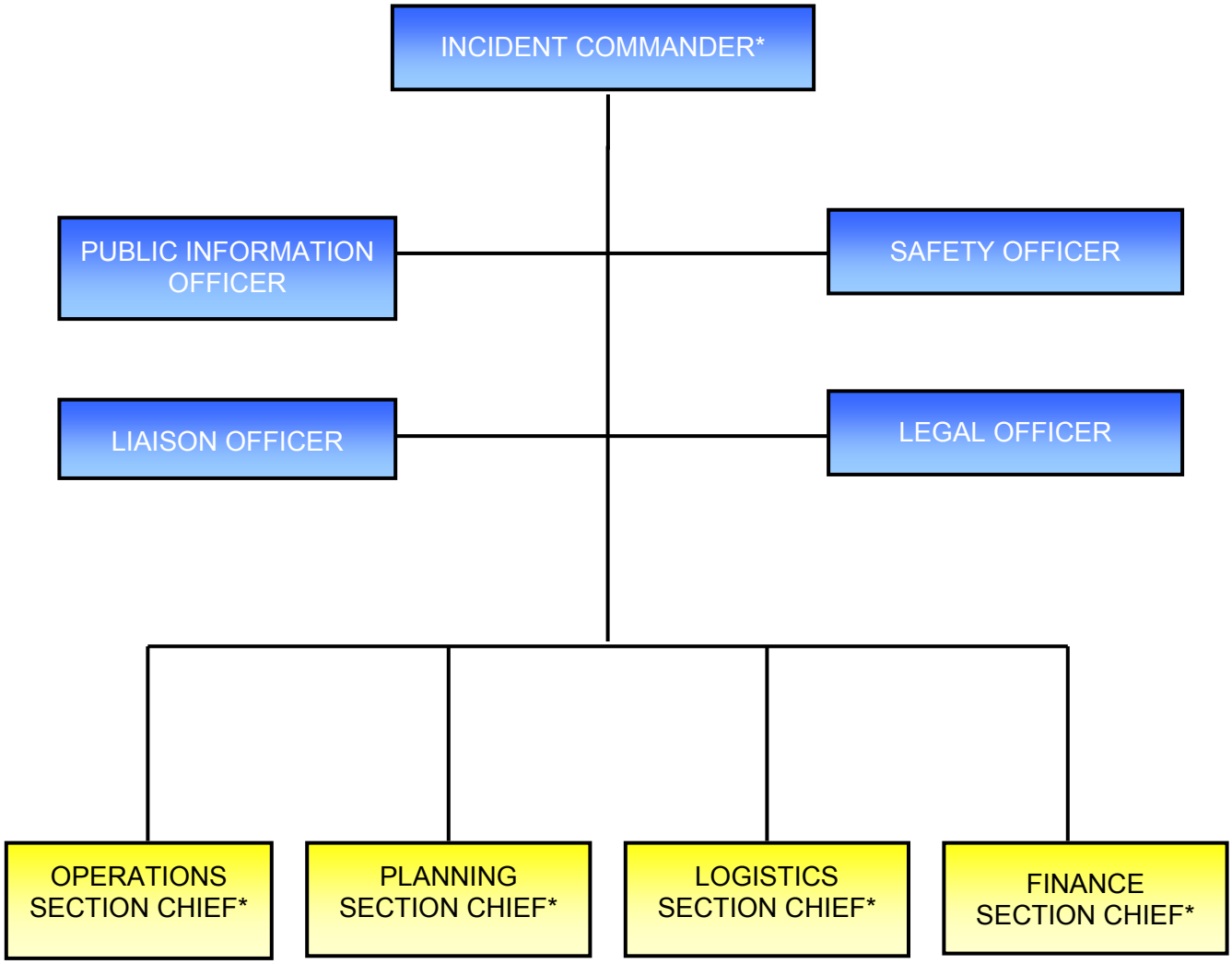
LEVEL II EVENT
Local Company resources may have to be supplemented with Corporate Office and external resources to manage the spill incident.
Exposure
The potential public and environmental exposure is moderately high. The type and quantity of material released, while considering the overall nature of the incident (e.g. fire, proximity to private dwellings, etc.), will have moderately high impact on the public and/or the environment.
Degree of Control
The incident can be brought under control in a moderate period of time through implementation of local resources available to the Facility (including contract resources) with possible implementation of regional resources.
Governmental Involvement
Government involvement will be moderately high and generally restricted to Regional levels.
Media Involvement
Media interest will be moderately high and generally restricted to Regional levels.

LEVEL III EVENT
Maximum Company and external resources must be implemented to respond to the spill incident. Activation of the CRRT would be anticipated during a Level III incident.
Exposure
The potential public and environmental exposure is significant. The type and quantity of material released, while considering the overall nature of the incident (e.g. fire, proximity to private dwellings, etc.), will have significant impact on the public and/or the environment.
Degree of Control
Maximum Company and third party resources must be implemented in order to gain control of the incident.
Governmental Involvement
Government involvement will be high.
Media Involvement
Media interest will be high.

FIGURE 4.1

LOCAL RESPONSE TEAM

(For Initial Response and Level I & II Incidents)



* NOTE: CRRT personnel can assume any of these positions as deemed necessary by the Incident Commander.

Further description of the roles and responsibilities for each individual/position is contained in the local Enterprise Emergency Response 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 Incident Management Team. For small responses, an ICS 201 (Incident Briefing Form provided in Figure 5.1), 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 IAP's are generally created through the completion and compilation of several standard ICS forms. These forms include, but are not limited to:

ICS FORM NUMBER	FORM TITLE	PREPARED BY*	REVISED DATE
CG IAP Cover Sheet	CG IAP Cover Sheet	**Planning Section -** Situation Unit Leader	6/1/2000
ICS 201-CG	Incident Briefing	**Command Section -** Initial Response IC	Undated
ICS 202-CG	Incident Objectives	**Planning Section -** Planning Section Chief	Undated
ICS 203-CG	Organization Assignment List	**Planning Section -** Resources Unit Leader	Undated
ICS 204-CG ICS 204a-CG	Assignment List & Attachment	**Operations Section -** Chief & Resources Unit Leader	Undated Undated
ICS 205-CG ICS 205a-CG	Incident Radio Communications Plan & List	**Logistics Section -** Communications Unit Leader	Undated Undated
ICS 206-CG	Medical Plan	**Logistics Section -** Medical Unit Leader	Undated
ICS 207-CG	Incident Organization	**Planning Section -** Resources Unit Leader	Undated
ICS 209-CG	Incident Status Summary	**Command Section -** Incident Commander	Undated
ICS 214-CG	Unit Log	**Planning Section -** Situation Unit Leader	Undated
ICS 218-CG	Support Vehicle Inventory	**Logistics Section -** Ground Support Unit Leader	Undated
ICS 220-CG	Air Operations Summary	**Operations Section -** Air Operations Branch Director	Undated
ICS 232-CG ICS 232a-CG	Resources at Risk Summary & ACP Index Site	**Planning Section -** Situation Unit Leader	Undated

* The Planning Section Chief may assign preparation of forms to other personnel on the Incident Management Team if identified position is unassigned or vacant when the IAP is produced. ICS Forms may also be retrieved off the internet.

The Enterprise Safety forms to be used, as needed, during an emergency response consist of the following. At a minimum, a SF49 Emergency Response Site Safety and Action Plan should be completed for all releases.

Enterprise SF FORM NUMBER	FORM TITLE
SF12	Emergency Response Pre-Plans
SF13	Emergency Response Drill Critique
SF19	Hazard Assessment Form
SF49	Emergency Response Site Safety and Action Plan
SF50	Emergency Response Personnel Roster
SF51	Evacuation Assembly Area Accountability
SF52	Emergency Response Stating Form
SF53	Emergency Response Incident Log
SF54	Emergency Response General Message
SF58	Emergency Response – ICS Organization Chart
SF59	Emergency Scene Map Sketch

5.1 INCIDENT ACTION PLAN (Cont'd)

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

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

5.2 SITE SAFETY PLAN

Site Safety Plans (SSP) are required by OSHA (29CFR1910.120(b)(4)) for all hazardous waste operations. The SSP should address all on-site operations and hazardous as well as on-site emergency procedures. A template for use in producing an SSP is provided as SF49.

The SSP is typically prepared by the Safety Officer and approved by the Incident Commander. All personnel must be familiar with the contents of the SSP and the SSP 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:

☐ ICS 202-OS (Response Objectives)

☐ ICS 203-OS (Organization List) - OR - ICS 207-OS (Organization Chart)

☐ ICS 204-OSs (Assignment Lists)
One Copy each of any ICS 204-OS attachments:

- ☐ Map
- ☐ Weather forecast
- ☐ Tides
- ☐ Shoreline Cleanup Assessment Team Report for location
- ☐ Previous day's progress, problems for location

☐ ICS 205-OS (Communications List)

☐ ICS 206-OS (Medical Plan)

☐ _____

☐ _____

☐ _____

☐ _____

☐ _____

☐ _____

4. Prepared by: **Date / Time**

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Time:

4. Map/Sketch (include sketch, showing the total area of operations, the incident site/area, impacted and threatened areas, overflight results, trajectories, impacted shorelines, or other graphics depicting situational status and resource assignment)**:**

5. Situation Summary and Health and Safety Briefing (for briefings or transfer of command)**:** Recognize potential incident Health and Safety Hazards and develop necessary measures (remove hazard, provide personal protective equipment, warn people of the hazard) to protect responders from those hazards.

6. Prepared by: Name: _____ Position/Title: _____ Signature: _____

 Date/Time: _____

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Time:

7. Current and Planned Objectives:

8. Current and Planned Actions, Strategies, and Tactics:

Time:	Actions:

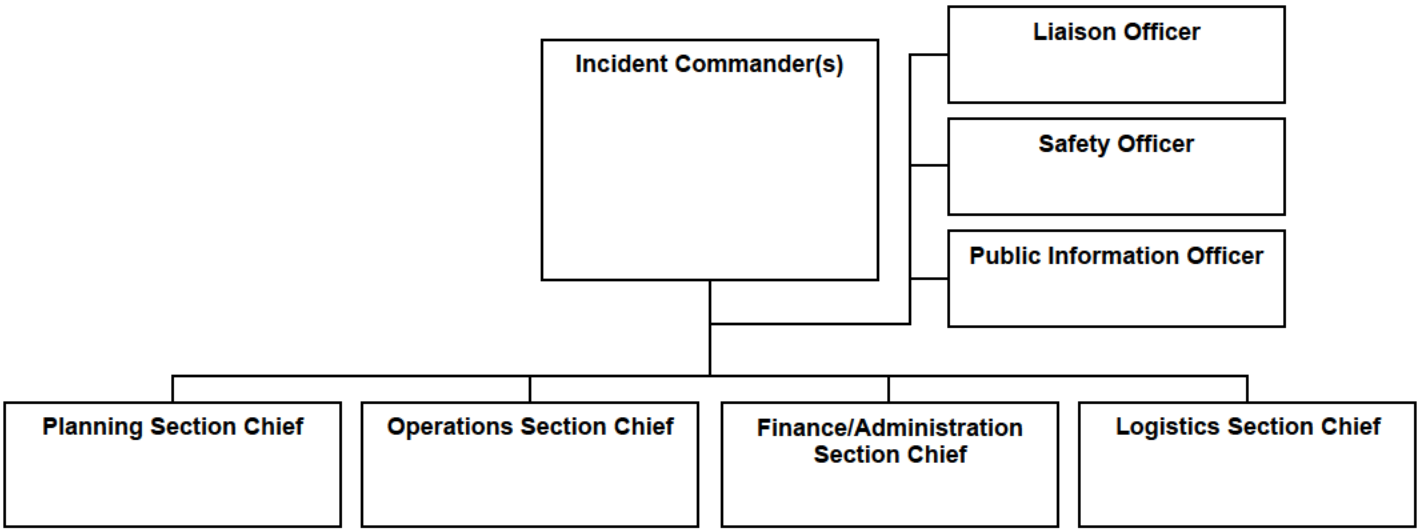
6. Prepared by: Name: _____ Position/Title: _____ Signature: _____

 Date/Time: _____

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Time:

9. Current Organization (fill in additional organization as appropriate):



6. Prepared by: Name: _____ Position/Title: _____ Signature: _____

ICS 201, Page 3 Date/Time: _____

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Time:

10. Resource Summary:

Resource	Resource Identifier	Date/Time Ordered	ETA	Arrived	Notes (location/assignment/status)
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	

6. Prepared by: Name: _____ Position/Title: _____ Signature: _____

Date/Time: _____

INCIDENT OBJECTIVES (ICS 202)

1. Incident Name:	2. Operational Period: Date From: Date To: Time From: Time To:

3. Objective(s):

4. Operational Period Command Emphasis:

General Situational Awareness

5. Site Safety Plan Required? Yes ☐ No ☐

Approved Site Safety Plan(s) Located at:

6. Incident Action Plan (the items checked below are included in this Incident Action Plan)**:**

☐ ICS 202	☐ ICS 206	Other Attachments:
☐ ICS 203	☐ ICS 207	☐ _____
☐ ICS 204	☐ ICS 208	☐ _____
☐ ICS 205	☐ Map/Chart	☐ _____
☐ ICS 205A	☐ Weather Forecast/Tides/Currents	☐ _____

7. Prepared by: Name: _____ Position/Title: _____ Signature: _____

8. Approved by Incident Commander: Name: _____ Signature: _____

ICS 202	IAP Page _____	Date/Time: _____

ORGANIZATION ASSIGNMENT LIST (ICS 203)

1. Incident Name:	2. Operational Period: Date From: Date To: Time From: Time To:

3. Incident Commander(s) and Command Staff:	
IC/UCs	
Deputy	
Safety Officer	
Public Info. Officer	
Liaison Officer	

4. Agency/Organization Representatives:	
Agency/Organization	Name

5. Planning Section:	
Chief	
Deputy	
Resources Unit	
Situation Unit	
Documentation Unit	
Demobilization Unit	
Technical Specialists	

6. Logistics Section:	
Chief	
Deputy	
Support Branch	
Director	
Supply Unit	
Facilities Unit	
Ground Support Unit	
Service Branch	
Director	
Communications Unit	
Medical Unit	
Food Unit	

7. Operations Section:		
Chief		
Deputy		
Staging Area		
Branch		
Branch Director		
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Branch		
Branch Director		
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Branch		
Branch Director		
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Air Operations Branch		
Air Ops Branch Dir.		

8. Finance/Administration Section:	
Chief	
Deputy	
Time Unit	
Procurement Unit	
Comp/Claims Unit	
Cost Unit	

9. Prepared by: Name: _____ Position/Title: _____ Signature: _____

ICS 203 | **IAP Page** _____ | Date/Time: _____

ASSIGNMENT LIST (ICS 204)

1. Incident Name:	2. Operational Period: Date From: Date To: Time From: Time To:	3. Branch:
4. Operations Personnel: Name / Contact Number(s) Operations Section Chief: _____ Branch Director: _____ Division/Group Supervisor: _____		Division: Group: Staging Area:

5. Resources Assigned:		# of Persons	Contact (e.g., phone, pager, radio frequency, etc.)	Reporting Location, Special Equipment and Supplies, Remarks, Notes, Information
Resource Identifier	Leader			

6. Work Assignments:

7. Special Instructions:

8. Communications (radio and/or phone contact numbers needed for this assignment)**:**

Name/Function	Primary Contact: indicate cell, pager, or radio (frequency/system/channel)
/	
/	
/	
/	

9. Prepared by: Name: _____ Position/Title: _____ Signature: _____

ICS 204	IAP Page _____	Date/Time: _____

1. Incident Name	2. Operational Period (Date/Time) From: To:	ASSIGNMENT LIST ATTACHMENT 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)

☐ **Map/Chart** ☐ **Weather Forecast/Tides/Currents** ☐ _____

☐ _____ ☐ _____ ☐ _____

10. Prepared by: Date/Time	11. Reviewed by (PSC): Date/Time	12. Reviewed by (OSC): Date/Time

INCIDENT RADIO COMMUNICATIONS PLAN (ICS 205)

1. Incident Name:	2. Date/Time Prepared: Date: Time:	3. Operational Period: Date From: Date To: Time From: Time To:

4. Basic Radio Channel Use:

Zone Grp.	Ch #	Function	Channel Name/Trunked Radio System Talkgroup	Assignment	RX Freq N or W	RX Tone/NAC	TX Freq N or W	TX Tone/NAC	Mode (A, D, or M)	Remarks

5. Special Instructions:

6. Prepared by (Communications Unit Leader)**:** Name: _____ Signature: _____

ICS 205	IAP Page _____	Date/Time: _____

COMMUNICATIONS LIST (ICS 205A)

1. Incident Name:	**2. Operational Period:** Date From: Date To: Time From: Time To:

3. Basic Local Communications Information:

Incident Assigned Position	Name (Alphabetized)	Method(s) of Contact (phone, pager, cell, etc.)

4. Prepared by: Name: _____ Position/Title: _____ Signature: _____

ICS 205A	**IAP Page** _____	Date/Time: _____

MEDICAL PLAN (ICS 206)

1. Incident Name:	2. Operational Period: Date From: Date To: Time From: Time To:

3. Medical Aid Stations:

Name	Location	Contact Number(s)/Frequency	Paramedics on Site?
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No

4. Transportation (indicate air or ground)**:**

Ambulance Service	Location	Contact Number(s)/Frequency	Level of Service
			☐ ALS ☐ BLS
			☐ ALS ☐ BLS
			☐ ALS ☐ BLS
			☐ ALS ☐ BLS

5. Hospitals:

Hospital Name	Address, Latitude & Longitude if Helipad	Contact Number(s)/ Frequency	Travel Time		Trauma Center	Burn Center	Helipad
			Air	Ground			
					☐ Yes Level:_____ ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes Level:_____ ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes Level:_____ ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes Level:_____ ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes Level:_____ ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

6. Special Medical Emergency Procedures:

☐ Check box if aviation assets are utilized for rescue. If assets are used, coordinate with Air Operations.

7. Prepared by (Medical Unit Leader)**:** Name: _____ Signature: _____

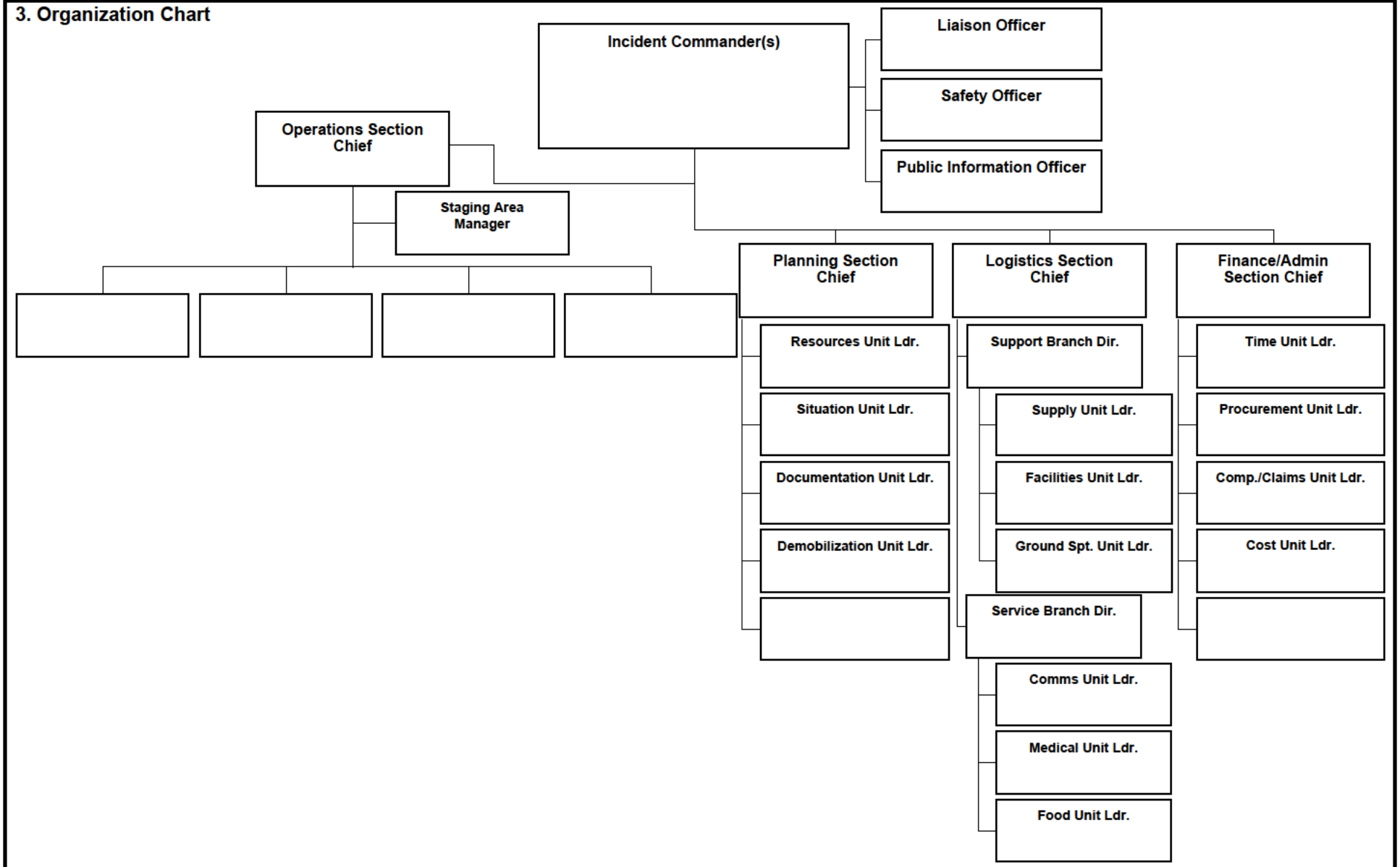
8. Approved by (Safety Officer)**:** Name: _____ Signature: _____

ICS 206	IAP Page _____	Date/Time: _____

INCIDENT ORGANIZATION CHART (ICS 207)

1. Incident Name:	2. Operational Period: Date From: Date To: Time From: Time To:

3. Organization Chart



ICS 207	IAP Page ___	4. Prepared by: Name:_____ Position/Title: _____ Signature: _____ Date/Time: _____

INCIDENT STATUS SUMMARY (ICS 209)

***1. Incident Name:**			**2. Incident Number:**	
***3. Report Version** (check one box on left)**:** ☐ Initial Rpt # (if used): ☐ Update ☐ Final	***4. Incident Commander(s) & Agency or Organization:**		**5. Incident Management Organization:**	***6. Incident Start Date/Time:** Date: _____ Time: _____ Time Zone: _____
7. Current Incident Size or Area Involved (use unit label – e.g., "sq mi," "city block")**:**	**8. Percent (%) Contained** _____ **Completed** _____	***9. Incident Definition:**	**10. Incident Complexity Level:**	***11. For Time Period:** From Date/Time: _____ To Date/Time: _____

Approval & Routing Information

***12. Prepared By:** Print Name: _____ ICS Position: _____ Date/Time Prepared: _____	***13. Date/Time Submitted:** **Time Zone:**
***14. Approved By:** Print Name: _____ ICS Position: _____ Signature: _____	***15. Primary Location, Organization, or Agency Sent To:**

Incident Location Information

***16. State:**	***17. County/Parish/Borough:**	***18. City:**
19. Unit or Other:	***20. Incident Jurisdiction:**	**21. Incident Location Ownership** (if different than jurisdiction)**:**
22. Longitude (indicate format)**:** **Latitude** (indicate format)**:**	**23. US National Grid Reference:**	**24. Legal Description** (township, section, range)**:**
***25. Short Location or Area Description** (list all affected areas or a reference point)**:**		**26. UTM Coordinates:**
27. Note any electronic geospatial data included or attached (indicate data format, content, and collection time information and labels)**:**		

Incident Summary

***28. Significant Events for the Time Period Reported** (summarize significant progress made, evacuations, incident growth, etc.)**:**				
29. Primary Materials or Hazards Involved (hazardous chemicals, fuel types, infectious agents, radiation, etc.)**:**				
30. Damage Assessment Information (summarize damage and/or restriction of use or availability to residential or commercial property, natural resources, critical infrastructure and key resources, etc.)**:**	A. Structural Summary	B. # Threatened (72 hrs)	C. # Damaged	D. # Destroyed
	E. Single Residences			
	F. Nonresidential Commercial Property			
	Other Minor Structures			
	Other			

** Required when applicable.*

INCIDENT STATUS SUMMARY (ICS 209)

*1. Incident Name:	2. Incident Number:

Additional Incident Decision Support Information

*31. Public Status Summary:	A. # This Reporting Period	B. Total # to Date
C. Indicate Number of Civilians (Public) Below:		
D. Fatalities		
E. With Injuries/Illness		
F. Trapped/In Need of Rescue		
G. Missing *(note if estimated)*		
H. Evacuated *(note if estimated)*		
I. Sheltering in Place *(note if estimated)*		
J. In Temporary Shelters *(note if est.)*		
K. Have Received Mass Immunizations		
L. Require Immunizations *(note if est.)*		
M. In Quarantine		
N. Total # Civilians (Public) Affected:		

*32. Responder Status Summary:	A. # This Reporting Period	B. Total # to Date
C. Indicate Number of Responders Below:		
D. Fatalities		
E. With Injuries/Illness		
F. Trapped/In Need of Rescue		
G. Missing		
H. Sheltering in Place		
I. Have Received Immunizations		
J. Require Immunizations		
K. In Quarantine		
N. Total # Responders Affected:		

33. Life, Safety, and Health Status/Threat Remarks:

35. Weather Concerns (synopsis of current and predicted weather; discuss related factors that may cause concern)**:**

*34. Life, Safety, and Health Threat Management:	A. Check if Active
A. No Likely Threat	☐
B. Potential Future Threat	☐
C. Mass Notifications in Progress	☐
D. Mass Notifications Completed	☐
E. No Evacuation(s) Imminent	☐
F. Planning for Evacuation	☐
G. Planning for Shelter-in-Place	☐
H. Evacuation(s) in Progress	☐
I. Shelter-in-Place in Progress	☐
J. Repopulation in Progress	☐
K. Mass Immunization in Progress	☐
L. Mass Immunization Complete	☐
M. Quarantine in Progress	☐
N. Area Restriction in Effect	☐
	☐
	☐
	☐
	☐

36. Projected Incident Activity, Potential, Movement, Escalation, or Spread and influencing factors during the next operational period and in 12-, 24-, 48-, and 72-hour timeframes:

12 hours:

24 hours:

48 hours:

72 hours:

Anticipated after 72 hours:

37. Strategic Objectives (define planned end-state for incident)**:**

** Required when applicable.*

INCIDENT STATUS SUMMARY (ICS 209)

***1. Incident Name:**	**2. Incident Number:**

Additional Incident Decision Support Information *(continued)*

38. Current Incident Threat Summary and Risk Information in 12-, 24-, 48-, and 72-hour timeframes and beyond. Summarize primary incident threats to life, property, communities and community stability, residences, health care facilities, other critical infrastructure and key resources, commercial facilities, natural and environmental resources, cultural resources, and continuity of operations and/or business. Identify corresponding incident-related potential economic or cascading impacts.

12 hours:

24 hours:

48 hours:

72 hours:

Anticipated after 72 hours:

39. Critical Resource Needs in 12-, 24-, 48-, and 72-hour timeframes and beyond to meet critical incident objectives. List resource category, kind, and/or type, and amount needed, in priority order:

12 hours:

24 hours:

48 hours:

72 hours:

Anticipated after 72 hours:

40. Strategic Discussion: Explain the relation of overall strategy, constraints, and current available information to:

1) critical resource needs identified above,
2) the Incident Action Plan and management objectives and targets,
3) anticipated results.

Explain major problems and concerns such as operational challenges, incident management problems, and social, political, economic, or environmental concerns or impacts.

41. Planned Actions for Next Operational Period:

42. Projected Final Incident Size/Area (use unit label – e.g., "sq mi")**:**

43. Anticipated Incident Management Completion Date:

44. Projected Significant Resource Demobilization Start Date:

45. Estimated Incident Costs to Date:

46. Projected Final Incident Cost Estimate:

47. Remarks (or continuation of any blocks above – list block number in notation)**:**

** Required when applicable.*

INCIDENT STATUS SUMMARY (ICS 209)

1. Incident Name:	2. Incident Number:

Incident Resource Commitment Summary

48. Agency or Organization:	49. Resources (summarize resources by category, kind, and/or type; show # of resources on top ½ of box, show # of personnel associated with resource on bottom ½ of box):																					50. Additional Personnel not assigned to a resource:	51. Total Personnel (includes those associated with resources – e.g., aircraft or engines – *and* individual overhead):
52. Total Resources																							

53. Additional Cooperating and Assisting Organizations Not Listed Above:

ICS 209, Page ___ of ___	** Required when applicable.*

ACTIVITY LOG (ICS 214)

1. Incident Name:	2. Operational Period: Date From: Time From:	Date To: Time To:

3. Name:	4. ICS Position:	5. Home Agency (and Unit):

6. Resources Assigned:

Name	ICS Position	Home Agency (and Unit)

7. Activity Log:

Date/Time	Notable Activities

8. Prepared by: Name: _____ Position/Title: _____ Signature: _____

ICS 214, Page 1 Date/Time: _____

ACTIVITY LOG (ICS 214)

1. Incident Name:	**2. Operational Period:** Date From: Date To: Time From: Time To:

7. Activity Log (continuation)**:**

Date/Time	Notable Activities

8. Prepared by: Name: ____________________ Position/Title: ___________________ Signature: _____________________

ICS 214, Page 2	Date/Time: ____

SUPPORT VEHICLE/EQUIPMENT INVENTORY (ICS 218)

1. Incident Name:	2. Incident Number:	3. Date/Time Prepared: Date: Time:	4. Vehicle/Equipment Category:

5. Vehicle/Equipment Information

Order Request Number	Incident ID No.	Vehicle or Equipment Classification	Vehicle or Equipment Make	Category/ Kind/Type, Capacity, or Size	Vehicle or Equipment Features	Agency or Owner	Operator Name or Contact	Vehicle License or ID No.	Incident Assignment	Incident Start Date and Time	Incident Release Date and Time

ICS 218 | **6. Prepared by:** Name: _____ Position/Title: _____ Signature: _____

AIR OPERATIONS SUMMARY (ICS 220)

1. Incident Name:	**2. Operational Period:** Date From: Date To: Time From: Time To:	**3. Sunrise:** **Sunset:**

4. Remarks (safety notes, hazards, air operations special equipment, etc.)**:**	**5. Ready Alert Aircraft:** Medivac: New Incident:	**6. Temporary Flight Restriction Number:** Altitude: Center Point:

7. Personnel:	Name:	Phone Number:
Air Operations Branch Director		
Air Support Group Supervisor		
Air Tactical Group Supervisor		
Helicopter Coordinator		
Helibase Manager		

8. Frequencies:	AM	FM
Air/Air Fixed-Wing		
Air/Air Rotary-Wing – Flight Following		
Air/Ground		
Command		
Deck Coordinator		
Take-Off & Landing Coordinator		
Air Guard		

9. Fixed-Wing (category/kind/type, make/model, N#, base)**:**

Air Tactical Group Supervisor Aircraft:

Other Fixed-Wing Aircraft:

10. Helicopters (use additional sheets as necessary)**:**

FAA N#	Category/Kind/Type	Make/Model	Base	Available	Start	Remarks

11. Prepared by: Name: _____ Position/Title: _____ Signature: _____

 Date/Time: _____

AIR OPERATIONS SUMMARY (ICS 220)

1. Incident Name:	2. Operational Period: Date From: Date To: Time From: Time To:	3. Sunrise: Sunset:

12. Task/Mission/Assignment (category/kind/type and function includes: air tactical, reconnaissance, personnel transport, search and rescue, etc.)**:**

Category/Kind/Type and Function	Name of Personnel or Cargo (if applicable) or Instructions for Tactical Aircraft	Mission Start	Fly From	Fly To

11. Prepared by: Name: _____ Position/Title: _____ Signature: _____

 Date/Time: _____

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**

1. Incident Name	2. Operational Period (Date/Time) From: To:	ACP Site Index ICS 232a-CG

3. Index to ACP/GRP sites shown on Situation Map

Site #	Priority	Site Name and/or Physical Location	Action	Status

Note: This form is designed to be posted next to the situation map. Use additional sheets, as needed.

4. Prepared by: **Date/Time**

Enterprise Products	Safety Policies Manual	Form Number: SF12
	Category: Safety Forms	Revision Date: 12/08/2006

Emergency Pre-Plans

Area:		Date:	

1.	Major Equipment/Building Located in Area:
2.	Worst Case Scenario:
3.	Most Likely Scenario:
4.	Alternate Scenario:
5.	Special Conditions:
6.	Potential Exposures:
7.	PPE Equipment Requirements
8.	Isolation Points:
9.	Resources Available in Area:

Reviewed By: (signature):

Enterprise Products	Safety Policies Manual	Form Number: SF12
	Category: Safety Forms	Revision Date: 12/08/2006

Enterprise Products	Safety Policies Manual	Policy Number: SF13
	Safety Forms	Revision Date: 03/30/2012

Emergency Response Incident or Drill Critique

Incident Location :					
Incident Date:		**Incident Start Time:**		**Incident Finish Time:**	
Critique Date:		**Critique Start Time:**			

1.	**Type of Event**				
	☐ Exercise/Drill or ☐ Incident				
2.	**Type of Exercise/Drill**	☐ N/A			
	☐ Notification	☐ Announced	☐ Unannounced	☐ Deployment	
	☐ Tabletop	☐ Full Scale	☐ Functional	Other:	
3.	**Frequency of Exercise/Drill**	☐ N/A			
	☐ Quarter	☐ 1st	☐ 2nd	☐ 3rd	☐ 4th
	☐ Annual Drill	☐ Semi-Annual Drill			

4.	**PREP Core Components Exercised**	☐ N/A					
	1.	☐ Notifications	6.	☐ Containment	11.	☐ Transportation	
	2.	☐ Staff Mobilization	7.	☐ Recovery	12.	☐ Personnel Support	
	3.	☐ Incident Command	8.	☐ Protection	13.	☐ Equipment Maintenance & Support	
	4.	☐ Source Control	9.	☐ Disposal	14.	☐ Procurement	
	5.	☐ Assessment	10.	☐ Communications	15.	☐ Documentation	

5.	**Type of Incident**			
	☐ Medical	☐ Hazmat Liquid	☐ Fire Spill	☐ Weather
	☐ Rescue	☐ Hazmat Gas Release	☐ Security	Other:
6.	**Explanation of Incident:**			
7.	**Explanation of Actions Taken:**			
8.	**Positive Points**			
9.	**Points to Improve on**			

Enterprise Products	Safety Policies Manual	Policy Number: SF13
	Safety Forms	Revision Date: 03/30/2012

Emergency Response Incident or Drill Critique

10.	Critique of Standard Operating Guidelines:			
a)	**Notification** – Were notification procedures followed and adequate?	☐ Yes	☐ No	☐ N/A
	Response Technique Utilized and Corrective Actions:			
b)	**Safely Respond** – Was the scene approached properly?	☐ Yes	☐ No	☐ N/A
	Response Technique Utilized and Corrective Actions:			
c)	**Accountability** – Where all personnel accounted for?	☐ Yes	☐ No	☐ N/A
	Response Technique Utilized and Corrective Actions:			
d)	**Isolate and Deny Entry** – Were zones, corridors, and evacuation routes used properly?	☐ Yes	☐ No	☐ N/A
	Response Technique Utilized and Corrective Actions:			
e)	**Command** – Was Incident Command established and used properly?	☐ Yes	☐ No	☐ N/A
	Response Technique Utilized and Corrective Actions:			
f)	**Identification of Hazards** – Were hazards identified in an appropriate time and manner?	☐ Yes	☐ No	☐ N/A
	Response Technique Utilized and Corrective Actions:			
g)	**Assessment/Action Plan** – Was written action plan developed and followed?	☐ Yes	☐ No	☐ N/A
	Response Technique Utilized and Corrective Actions:			
h)	**Protective Equipment** – Was PPE identified and air monitoring performed?	☐ Yes	☐ No	☐ N/A
	Response Technique Utilized and Corrective Actions:			
i)	**Control** – Were ignition sources eliminated? Was confinement/containment performed?	☐ Yes	☐ No	☐ N/A
	Response Technique Utilized and Corrective Actions:			
j)	**Protective Actions** – Was Evacuation/Shelter-in-place used? Were Zones maintained?	☐ Yes	☐ No	☐ N/A
	Response Technique Utilized and Corrective Actions:			
k)	**Decontamination** – Was decontamination conducted appropriately?	☐ Yes	☐ No	☐ N/A
	Response Technique Utilized and Corrective Actions:			
l)	**Disposal** – Was waste material(s) disposed of properly?	☐ Yes	☐ No	☐ N/A
	Response Technique Utilized and Corrective Actions:			
m)	**Termination** – Was the incident terminated at the appropriate time, and all de-briefed?	☐ Yes	☐ No	☐ N/A
	Response Technique Utilized and Corrective Actions:			
n)	**Medical** – Was medical and/or first aid available and used properly?	☐ Yes	☐ No	☐ N/A
	Response Technique Utilized and Corrective Actions:			
o)	**Documentation** – Was all documentation gathered?	☐ Yes	☐ No	☐ N/A

Enterprise Products	Safety Policies Manual	Policy Number: SF13
	Safety Forms	Revision Date: 03/30/2012

Emergency Response Incident or Drill Critique

11.	Attachments to this Report
	☐ SF49 – Emergency Response Site Safety and Action Plan
	☐ SF51 – Evacuation Assembly Area Accountability
	☐ SF50 – Emergency Response Personnel Roster
	☐ SF52 – Emergency Response Staging Form
	☐ SF53 – Emergency Response Incident Log
	☐ SF54 – Emergency Response General Message
	☐ SF58 – Emergency Response ICS Organization Chart
	☐ SF59 – Emergency Response Scene Map Sketch
	Other:

Incident Commander/Preparer:	Date:

NIMS ICS-224 / 225 Compatible

Enterprise Products	Safety Policies Manual	Policy Number: SF13
	Safety Forms	Revision Date: 03/13/2012

Emergency Response Incident or Drill Critique

Sign In Sheet

Location:		Date:	
Facilitator:			

Print Name	Agency Name	Address	City, State, Zip	Phone Number	Email	Signature

Enterprise Products	Safety Policies Manual	Form Number: SF-19
	Safety Forms	Revision Date: 12/08/2006

HAZARD ASSESSMENT FORM

Location:		**Date of Assessment:**	
Area/Region:			
Conducted By:			

Area	Task	Hazard	Engineering Controls	Administrative Controls	PPE Specified
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other

Level 1	*Safety Glasses or Chemical Goggles, Hard Hat, FRC Garments, Safety Toe Shoes/Boots*
Level 2	*Chemical Goggles and Face Shield, Hard Hat, FRC Garments, Safety Toe Shoes/Boots, Rubber or Neoprene Gloves, Splash Aprons*
Level 3	*Chemical Goggles and Face Shield, Hard Hat, FRC Garments, Safety Toe Rubber Boots, Rubber or Neoprene Gloves, Full slicker or chemical suit*
Other	*List Special PPE Equipment (i.e., Hearing Protection, Respiratory Protection, Specified Gloves)*

Enterprise Products	Safety Policies Manual	Form Number: SF-19
	Safety Forms	Revision Date: 12/08/2006

Area	Task	Hazard	Engineering Controls	Administrative Controls	PPE Specified
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other

Level 1	*Safety Glasses or Chemical Goggles, Hard Hat, FRC Garments, Safety Toe Shoes/Boots*
Level 2	*Chemical Goggles and Face Shield, Hard Hat, FRC Garments, Safety Toe Shoes/Boots, Rubber or Neoprene Gloves, Splash Aprons*
Level 3	*Chemical Goggles and Face Shield, Hard Hat, FRC Garments, Safety Toe Rubber Boots, Rubber or Neoprene Gloves, Full slicker or chemical suit*
Other	*List Special PPE Equipment (i.e., Hearing Protection, Respiratory Protection, Specified Gloves)*

Enterprise Products	Safety Policies Manual	Form Number: SF-19
	Safety Forms	Revision Date: 12/08/2006

Area	Task	Hazard	Engineering Controls	Administrative Controls	PPE Specified
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other

Level 1	*Safety Glasses or Chemical Goggles, Hard Hat, FRC Garments, Safety Toe Shoes/Boots*
Level 2	*Chemical Goggles and Face Shield, Hard Hat, FRC Garments, Safety Toe Shoes/Boots, Rubber or Neoprene Gloves, Splash Aprons*
Level 3	*Chemical Goggles and Face Shield, Hard Hat, FRC Garments, Safety Toe Rubber Boots, Rubber or Neoprene Gloves, Full slicker or chemical suit*
Other	*List Special PPE Equipment (i.e., Hearing Protection, Respiratory Protection, Specified Gloves)*

Enterprise Products	Safety Policies Manual	Form Number: SF-19
	Safety Forms	Revision Date: 12/08/2006

Area	Task	Hazard	Engineering Controls	Administrative Controls	PPE Specified
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other

Level 1	*Safety Glasses or Chemical Goggles, Hard Hat, FRC Garments, Safety Toe Shoes/Boots*
Level 2	*Chemical Goggles and Face Shield, Hard Hat, FRC Garments, Safety Toe Shoes/Boots, Rubber or Neoprene Gloves, Splash Aprons*
Level 3	*Chemical Goggles and Face Shield, Hard Hat, FRC Garments, Safety Toe Rubber Boots, Rubber or Neoprene Gloves, Full slicker or chemical suit*
Other	*List Special PPE Equipment (i.e., Hearing Protection, Respiratory Protection, Specified Gloves)*

Enterprise Products	Safety Policies Manual	Form Number: SF-19
	Safety Forms	Revision Date: 12/08/2006

Area	Task	Hazard	Engineering Controls	Administrative Controls	PPE Specified
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other
					☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Other

Certification of Hazard Assessment:
I have reviewed the above information and certify that the Hazard assessment was performed for the purpose of identifying workplace hazards and any associated hazard control methods.

Site/Facility Supervisor's Name (printed):	Signature:	Date:

Level 1	*Safety Glasses or Chemical Goggles, Hard Hat, FRC Garments, Safety Toe Shoes/Boots*
Level 2	*Chemical Goggles and Face Shield, Hard Hat, FRC Garments, Safety Toe Shoes/Boots, Rubber or Neoprene Gloves, Splash Aprons*
Level 3	*Chemical Goggles and Face Shield, Hard Hat, FRC Garments, Safety Toe Rubber Boots, Rubber or Neoprene Gloves, Full slicker or chemical suit*
Other	*List Special PPE Equipment (i.e., Hearing Protection, Respiratory Protection, Specified Gloves)*

Enterprise Products	Safety Policies Manual	Form Number: SF49
	Category: Safety Forms	Revision Date: 01/20/2011

Emergency Response Site Safety and Action Plan

1. Description Section

Location :			
Date:		Time:	

Type of Incident

☐ Medical	☐ Hazmat Liquid Spill	☐ Fire	☐ Weather
☐ Rescue	☐ Hazmat Gas Release	☐ Security	Other:

Description of Incident

Hazardous Materials Involved

2. Accountability Section

Accountability Established for Responders?	YES ☐	NO ☐	
Area Evacuated?	YES ☐	NO ☐	
Are All Evacuees Accounted For?	YES ☐	NO ☐	If no, describe

3. Command Section

Location of Command Post:

Incident Commander:

Safety Officer:

EOC Activated: YES ☐ NO ☐ If yes, location:

4. Agencies Section

Agencies Involved (Include name of representative)

5. Communications Section

Methods used: Radio Channel: Phone Number: Other:

6. Access Zones Section

Is Site Secure?	YES ☐	NO ☐			
Exclusion (Hot) Zone Description:					
Exclusion (Hot) Zone PPE:	Level 1 ☐	Level 2 ☐	Level 3 ☐	Other:	
Contamination Reduction (Warm) Zone Description:					
Contamination Reduction (Warm) Zone PPE:	Level 1 ☐	Level 2 ☐	Level 3 ☐	Other:	
Method of Decontamination Used:					
Support (Cold) Zone Description:					
Support (Cold) Zone PPE:	Level 1 ☐	Other:			
Area Monitoring Provided:	YES ☐	NO ☐	Area Monitoring Described:		

Enterprise Products	Safety Policies Manual	Form Number: SF49
	Category: Safety Forms	Revision Date: 01/20/2011

7.	**Emergency Procedures Section**	
	Review of Alarm and Emergency Evacuation by Responders: YES ☐ NO ☐	Method of Recall Used:
	Nearest Hospital/Clinic:	Phone:
	Nearest Fire Department:	Phone:
	Nearest Police Department:	Phone:
8.	**Actions Section**	
	Defensive Actions Taken:	
	Offensive Actions Taken:	
9.	**Objectives Section**	
	Objectives Description:	
	List Potential Exposures:	
10.	**Assets Section**	
	Is Mutual Aid Involved? YES ☐ NO ☐	
	List Fixed Equipment:	
	List Mobile Equipment:	
11.	**Rehab Section**	
	Location of Rehab:	
	Method of Rehab:	
12.	**Safety Message for Specified Operational Period:**	
	Incident Commander/Preparer (Name/Signature):	
	Safety Officer (Name/Signature):	

NIMS ICS-201 / 202 / 205 / 206 / 208 / 215 / 215A Compatible

Enterprise Products	Safety Policies Manual	Form Number: SF50
	Category: Safety Forms	Revision Date: 09/25/2009

Emergency Response Personnel Roster

Incident Date :			***Incident Time:***		
Incident Name:					
Roster Location:	***EOC:*** ☐	***ICP:*** ☐	***Operations:*** ☐	Staging: ☐	***Other:***

Name	Duty	Time In	Time Out

Preparer (Name):

NOTE: Upon Completion – Attach to "Emergency Response Critique Form"

NIMS ICS-203 / 211 Compatible

Enterprise Products	Safety Policies Manual	Form Number: SF51
	Category: Safety Forms	Revision Date: 09/25/2008

Evacuation Assembly Area Accountability

Incident Date :		**Incident Time:**	
Incident Name:			
Assembly Location:			

Name	Company	Contact Phone Number

Preparer (Name):

NOTE: Upon Completion – Attach to "Emergency Response Critique Form"

Enterprise Products	**Safety Policies Manual**	Form Number: **SF52**
	Category: **Safety Forms**	Revision Date: **09/25/2008**

Emergency Response Staging Form

Incident Date :		***Incident Time:***	
Incident Name:			
Staging Location:			

Company	Number Of People	Equipment	Time In	Time Out

Preparer (Name):

NOTE: Upon Completion – Attach to "Emergency Response Critique Form"

NIMS ICS-211 Compatible

Enterprise Products	Safety Policies Manual	Form Number: SF53
	Category: Safety Forms	Revision Date: 09/25/2008

Emergency Response Incident Log

Incident Date :		Incident Time:			
Incident Name:					
Log Location:	EOC: ☐	ICP: ☐	Operations: ☐	Staging: ☐	Other:

Time:	Major Events

Preparer (Name):

NOTE: Upon Completion – Attach to "Emergency Response Critique Form"

NIMS ICS-214 Compatible

Enterprise Products	Safety Policies Manual	Form Number: SF54
	Category: Safety Forms	Revision Date: 09/25/2008

Emergency Response General Message

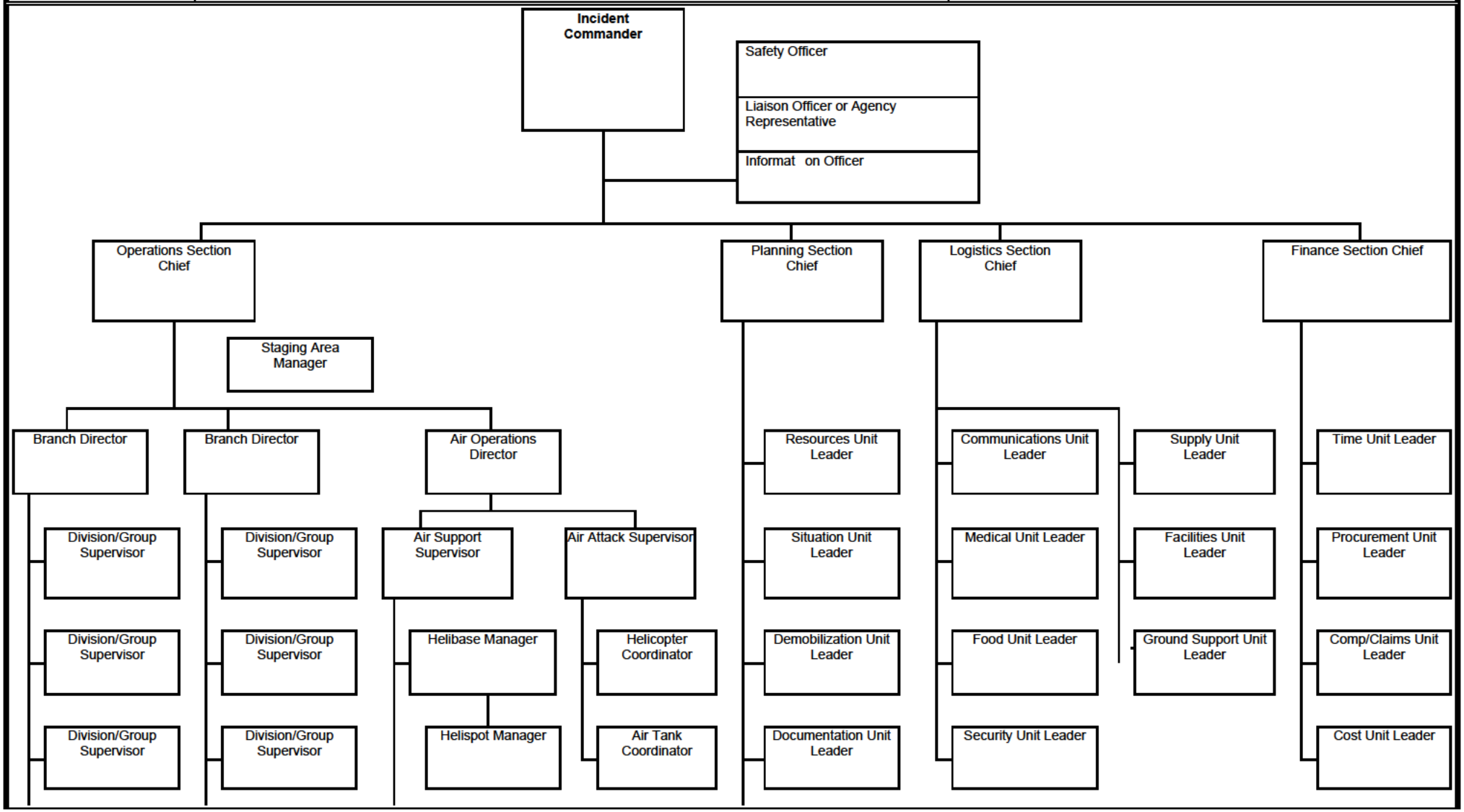
To :		***Position:***	
From:		***Position:***	
Subject:		***Date:***	**Time:**
Message:			
Name / Signature:		***Position:***	
Reply:			
Date:	**Time:**	***Signature / Position:***	
NOTE: Upon Completion – Attach to "Emergency Response Critique Form"			

NIMS ICS-213 Compatible

Enterprise Products	Safety Policies Manual	Form Number: SF58
	Category: Safety Forms	Revision Date: 11/18/2011

Emergency Response - ICS 207 Organization Chart

Location or Name:	*Operational Period: From to*



Enterprise Products	Safety Policies Manual	Form Number: SF59
	Category: Safety Forms	Revision Date: 11/18/2011

Emergency Scene Map / Sketch

L ation or Name:	*Operational Period: From*	*to*

Wind Direction: _____
Wind Speed: _____
Temp: _____
Conditions: _____

6.0 SPILL IMPACT CONSIDERATIONS

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.

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

6.2 ENVIRONMENTAL/SOCIO-ECONOMIC SENSITIVITIES (Cont'd)

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 WILDLIFE PROTECTION AND REHABILITATION

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.

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.

6.3.1 Wildlife Rescue

The Company will work with Federal, 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.

6.3 WILDLIFE PROTECTION AND REHABILITATION (Cont'd)

6.3.2 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 of 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.

6.5.1 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, planks 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.

- **Removal Methods**

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

6.5 CONTAINMENT AND RECOVERY OF SPILLED PRODUCT (Cont'd)

6.5.1 Spill on Land (Soil Surfaces) (Cont'd)

- 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.
- If practicable after removal of the bulk of the spill, controlled burning presents the possibility of a fast, simple, and inexpensive method of destruction of the remainder of the product. If all other options have been executed and the site is still unsafe for further activity because explosive vapors persist, the vapors may need to be intentionally ignited to prevent an accumulation sufficient to become an explosive mixture, provided the other requirements of these guidelines for controlled burning are met.

Intentional ignition to remove released product should be utilized only if all of the following conditions are met:

- Other steps and procedures have been executed and a determination has been made that this is the safest remaining method of control.
- Intentional burning will not unduly damage the pipeline, adjacent property, or the environment.
- Controlled burning is permitted by government authorities. 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.
- Controlled burning is conducted with the consent of local landowners.
- Safety must always be a prime consideration when considering controlled burning of product. Sparks and heat radiation from large fires can start secondary fires and strong winds make fire control difficult. There must be no danger of the fire spreading beyond control limits. All persons must be at a safe distance from the edge of the inflammable area. Remember that all burning must be controlled burning.

6.5 CONTAINMENT AND RECOVERY OF SPILLED PRODUCT (Cont'd)

6.5.2 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 removed. If judged appropriate or useful, a surface collecting agent should be applied once the slick is isolated to facilitate the removal. The surface collecting agent will concentrate the product into a smaller area and make the floating skimmer work more efficiently.

  Additions of more surface collecting agent from time to time may improve the skimming efficiency of the skimmer. It will continue to concentrate the slick into a smaller area, thus making the film thickness greater. 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, insure that the absorbent in question can be pumped and will not harm the pump.

6.5 CONTAINMENT AND RECOVERY OF SPILLED PRODUCT (Cont'd)

6.5.2 Spill on Lake or Pond (calm or slow-moving water) (Cont'd)

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.

6.5.3 Spill on Small to Medium Size Streams (relatively 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.

6.5 CONTAINMENT AND RECOVERY OF SPILLED PRODUCT (Cont'd)

6.5.3 Spill on Small to Medium Size Streams (relatively fast-flowing creeks) (Cont'd)

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 45^0 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.

Add a statement on the use of containment boom.

A 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.

Containment boom can be used to contain product or protect sensitive areas if the characteristics of the water body will permit. An advantage of containment boom is the speed and flexibility of deployment and the fact that there is not need for additional support as with the stationary boom.

6.5 CONTAINMENT AND RECOVERY OF SPILLED PRODUCT (Cont'd)

6.5.3 Spill on Small to Medium Size Streams (relatively fast-flowing creeks) (Cont'd)

- 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 (straw, ground corncobs, or other stocked absorbent) 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 (straw and other new types); others are intended only to be placed on the product after it accumulates on the water (ground corncobs and others). 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.

If the amount of product in the stream is minor, a straw-bale may be constructed to filter out the product. The slowing of the water would not be necessary, but several dams might be necessary to ensure complete removal. The downstream dams would also offer protection when the upstream bales are removed, releasing traces of product. Straw-bale dams can also be used downstream from underflow and overflow dams for added protection.

6.5 CONTAINMENT AND RECOVERY OF SPILLED PRODUCT (Cont'd)

6.5.3 Spill on Small to Medium Size Streams (relatively fast-flowing creeks) (Cont'd)

Thus, 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, absorbents, and straw-bale dams to ensure a complete cleanup.

6.5.4 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 boom are positioned straight across a river or stream, at right angles to the flow, surface water tends to dive beneath the barrier (boom) when current velocities exceed about ½ knot (0.8 ft./sec.). However, if the current of the entire river is ½ knot 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 ½ 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.

6.5 CONTAINMENT AND RECOVERY OF SPILLED PRODUCT (Cont'd)

6.5.4 Spill on Large Streams and Rivers (Cont'd)

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 ½ 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 have 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 holing tank.

The absorbents (type that can be placed on water before product arrival straw is an example) would then be used upstream of the secondary boom to absorb the underflow from the primary boom.

6.5 CONTAINMENT AND RECOVERY OF SPILLED PRODUCT (Cont'd)

6.5.4 Spill on Large Streams and Rivers (Cont'd)

An absorbent boom (Sea-Serpent) or other stocked absorbent boom can also be placed between the primary and secondary booms to help the other absorbents control the underflow from the primary boom. If the underflow from the primary boom is significant, then the type absorbent which can be placed on the water only after product is collected may be used. An example of this type of absorbent is ground corncobs. 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.

If the volume of product moving toward the boomed area is expected to be small, an absorbent (straw) should be placed in the river upstream of the primary and secondary booms. If regular booms are not necessary, a screen filter could be stretched across the river to contain the straw, or an absorbent boom could be constructed by tightly fastening hay bales together, forming a chain. Boats (either rented or furnished by contractors) would be necessary to retrieve the product-soaked absorbents.

6.5.5 Spill on Stream which Flows into Lake or Pond

There are certain locations along the pipeline where streams (small and large ones) flow into lakes or ponds at relatively short distances from the pipeline. It is conceivable that a spill that reached the streams in question could reach or almost reach the lakes before containment and recovery operations could be 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.

6.5 CONTAINMENT AND RECOVERY OF SPILLED PRODUCT (Cont'd)

6.5.5 Spill on Stream which Flows into Lake or Pond (Cont'd)

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.

6.5.6 Spill in a Mud or Tidal Flat Area

- **Confinement Method**

  Shoreline boom lined with absorbent boom should be placed at the surf line to prevent oil from washing up onto the flat area. If oiling has already occurred the boom is used to prevent further oiling and keep oil that has impacted the flat from spreading.

- **Removal Methods**

  Natural Recovery, Flooding and Sorbents are the three preferred methods. Any invasive type of recovery method poses a risk of driving the oil into the substrate of the flat and endangering the biologicals that live there. Invasive methods should only be used in order to protect more sensitive areas.

6.5.7 Spill in 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.

6.5 CONTAINMENT AND RECOVERY OF SPILLED PRODUCT (Cont'd)

6.5.7 Spill in Urban Areas (Cont'd)

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. This consideration extends to vehicular traffic through urban areas. Deploying booms and skimmers or constructing recovery sites can conflict with such traffic for several days. Also, passage of deep-draft vessels through the waterway can suddenly change water level and flow or create wakes, causing booms to fail. For these reasons, recovery efforts must be coordinated through the Unified Command to ensure the cooperation of all parties involved.

6.6 SHORELINE DESCRIPTORS AND RESPONSE CONSIDERATIONS

The following is an excerpt taken from the NOAA Shoreline Assessment Manual, Third Edition, August 2000. It is intended to offer guidance on the response considerations for the various shoreline types and structures found within the response zones. The descriptors, including oil behavior and response considerations is as follows:

Exposed Rocky Cliffs

DESCRIPTION

- The intertidal zone is steep (greater than 30^{o} slope), with very little width.
- Sediment accumulations are uncommon and usually ephemeral, because waves remove the debris that has slumped from the eroding cliffs.
- There is strong vertical zonation of intertidal biological communities.
- Species density and diversity vary greatly, but barnacles, snails, mussels, seastars, limpets, sea anemones, shore crabs, polychaetes, and macroalgae are often very abundant.

PREDICTED OIL BEHAVIOR

- Oil is held offshore by wave reflecting off the steep cliffs.
- Any oil that is deposited is rapidly removed from exposed faces.
- The most resistant oil would remain as a patchy band at or above the high-tide line.
- Impacts to intertidal communities are expected to be short-term in duration. An exception would be where heavy concentrations of a light refined product came ashore very quickly.

RESPONSE CONSIDERATIONS

- Cleanup is usually not required.
- Access can be difficult and dangerous.

6.6 SHORELINE DESCRIPTORS AND RESPONSE CONSIDERATIONS (Cont'd)

Exposed, Solid Man-Made Structures

DESCRIPTION

- This shoreline type consists of solid man-made structures such as seawalls, groins, revetments, piers, and port facilities.
- They are constructed of concrete, wood, or metal.
- Often there is no exposed substrate at low tide, but a wide range of habitats may be present.
- They are built to protect the shore from erosion by waves, boat wakes, and currents, and thus are exposed to rapid natural removal processes.
- Attached animals and plants are sparse to moderate.

PREDICTED OIL BEHAVIOR

- Oil is held offshore by waves reflecting off the steep, hard surface in exposed settings.
- Oil readily adheres to the dry, rough surfaces, but it does not adhere to wet substrates.
- The most resistant oil would remain as a patchy band at or above the high-tide line.

RESPONSE CONSIDERATIONS

- Cleanup is usually not required.
- High-pressure water spraying may be conducted to: remove persistent oil in crevices; improve aesthetics; or reduce leaching of oil.

Wave-Cut Platforms

DESCRIPTION

- The intertidal zone consists of a flat rock bench of highly variable width.
- The shoreline may be backed by a steep scarp or low bluff.
- There may be a beach of sand- to boulder-sized sediments at the base of the scarp.
- The platform surface is irregular and tidal pools are common.
- Small amounts of gravel can be found in the tidal pools and crevices in the platform.
- These habitats can support large populations of encrusting animals and plants, with rich tidal pool communities.

PREDICTED OIL BEHAVIOR

- Oil will not adhere to the rock platform, but rather be transported across the platform and accumulate along the high-tide line.
- Oil can penetrate in beach sediments, if present.
- Persistence of oiled sediments is usually short-term, except in wave shadows or where the oil has penetrated sediments at the high-tide line.

RESPONSE CONSIDERATIONS

- Cleanup is usually not required.
- Where the high-tide area is accessible, it may be feasible to remove heavy oil accumulations and oiled debris.

6.6 SHORELINE DESCRIPTORS AND RESPONSE CONSIDERATIONS (Cont'd)

Fine-Grained Sand Beaches

DESCRIPTION

- These beaches are generally flat and hard-packed.
- Though they are predominantly fine sand, there is often a small amount of shell hash.
- There can be heavy accumulations of wrack present.
- They are utilized by birds and turtles for nesting and feeding.
- Upper beach fauna are generally sparse, although amphipods can be abundant; lower beach fauna can be moderately abundant, but highly variable.

PREDICTED OIL BEHAVIOR

- Light oil accumulations will be deposited as oily bands along the upper intertidal zone.
- Heavy oil accumulations will cover the entire beach surface; oil will be lifted off the lower beach with the rising tide.
- Maximum penetration of oil into fine-grained sand is about 10 cm.
- Burial of oiled layers by clean sand within the first week after a spill typically will be less than 30 cm along the upper beach face.
- Organisms living in the beach sediment may be killed by smothering or lethal oil concentrations in the interstitial water.
- There may be declines in infauna, which can affect important shorebird foraging areas.

RESPONSE CONSIDERATIONS

- These beaches are among the easiest shoreline types to clean.
- Cleanup should concentrate on removing oil and oily debris from the upper swash zone once oil has come ashore.
- Activity through oiled and dune areas should be limited, to prevent oiling of clean areas.
- Manual cleanup, rather than road graders and front-end loaders, is usually advised to minimize the volume of sand removed from the shore and requiring disposal.
- All efforts should focus on preventing the mixture of oil deeper into the sediments by vehicular and foot traffic.
- Mechanical reworking of lightly oiled sediments from the high-tide line to the upper intertidal zone can be effective along outer beaches.

Scarps and Steep Slopes in Sand

DESCRIPTION

- This shoreline type occurs where sandy bluffs are undercut by waves or currents and slump.
- They normally form along embankments of sandy dredge material and at cut banks in rivers; they also form where tidal creeks intercept old sandy beach ridge deposits.

6.6 SHORELINE DESCRIPTORS AND RESPONSE CONSIDERATIONS (Cont'd)

Scarps and Steep Slopes in Sand (Cont'd)

DESCRIPTION (Cont'd)

- Some scarps are fronted by narrow beaches, if the erosion rates are moderate and episodic.
- Trees growing at the top of these slopes are eventually undercut and the debris can accumulate at the base of the scarp.
- Biological utilization by birds and infauna is low.

PREDICTED OIL BEHAVIOR

- Any stranded oil will concentrate at the high-water line and may penetrate sandy sediments.
- Oil will adhere to the dry surface of any woody debris accumulated at the base of the scarp.
- There is little potential for burial except when a major slumping of the bluff occurs.
- Active erosion of the scarp will remove the oil.

RESPONSE CONSIDERATIONS

- In most cases, cleanup is not necessary because of the short residence time of the oil.
- The need for removal of oiled sediments and debris should be carefully evaluated because of the potential for increased erosion.
- Closely supervised manual labor should be used so that the minimal amount of material is removed during cleanup.

Medium- to Coarse-Grained Sand Beaches

DESCRIPTION

- These beaches have relatively steep beach faces and soft substrates.
- Coarse-sand beaches can undergo rapid erosion/deposition cycles, even within one tidal cycle.
- The amount of wrack varies considerably.
- They are utilized by birds and turtles for nesting and feeding.

PREDICTED OIL BEHAVIOR

- Light oil accumulations will be deposited as oily bands along the upper intertidal zone.
- Heavy oil accumulations will cover the entire beach surface; oil will be lifted off the lower beach with the rising tide.
- Maximum oil penetration is about 20 cm.
- Burial of oiled layers by clean sand within the first week after a spill can be up to 50 cm.
- Organisms living in the beach sediments may be killed by smothering or lethal oil concentrations in the interstitial water.
- There may be declines in infauna, which can affect important shorebird foraging areas.

6.6 SHORELINE DESCRIPTORS AND RESPONSE CONSIDERATIONS (Cont'd)

Medium- to Coarse-Grained Sand Beaches (Cont'd)

RESPONSE CONSIDERATIONS

- Coarse sand sediments are less trafficable, increasing the risk of mixing oil into the substrate by foot and vehicular traffic.
- Cleanup should concentrate on removing oil and oily debris from the upper swash zone once oil has come ashore.
- Traffic through oiled and dune areas should be limited, to prevent oiling of clean areas.
- Manual cleanup, rather than road graders and front-end loaders, is advised to minimize the volume of sand removed from the shore and requiring disposal.
- All efforts should focus on preventing the mixture of oil deeper into the sediments by vehicular and foot traffic.
- Mechanical reworking of lightly oiled sediments from the high-tide zone to the upper intertidal zone can be effective along outer beaches.

Mixed Sand and Gravel Beaches

DESCRIPTION

- These beaches are moderately sloping and composed of a mixture of sand and gravel.
- Because of the mixed sediment sizes, there may be zones of pure sand, pebbles, or cobbles.
- There can be large-scale changes in the sediment distribution patterns depending upon season, because of the transport of the sand fraction offshore during storms.
- Because of sediment desiccation and mobility on exposed beaches, there are low densities of attached animals and plants.
- The presence of attached algae and animals indicates beaches that are relatively sheltered, with the more stable substrate supporting a richer biota.

PREDICTED OIL BEHAVIOR

- During small spills, oil will be deposited along and above the high-tide swash.
- Large spills will spread across the entire intertidal area.
- Oil penetration into the beach sediments may be up to 50 cm; however, the sand fraction can be quite mobile, and oil behavior is much like on a sand beach if the sand exceeds 40 percent.
- Burial of oil may be deep at and above the high-tide line, where oil tends to persist, particularly where beaches are only intermittently exposed to waves.
- In sheltered pockets on the beach, pavements of asphalted sediments can form if there is no removal of heavy oil accumulations, because most of the oil remains on the surface.
- Once formed, these asphalt pavements can persist for many years.
- Oil can be stranded in the coarse sediments on the lower part of the beach, particularly if the oil is weathered or emulsified.

6.6 SHORELINE DESCRIPTORS AND RESPONSE CONSIDERATIONS (Cont'd)

Mixed Sand and Gravel Beaches (Cont'd)

RESPONSE CONSIDERATIONS

- Remove heavy accumulations of pooled oil from the upper beach face.
- All oiled debris should be removed.
- Sediment removal should be limited as much as possible.
- Low-pressure flushing can be used to float oil away from the sediments for recovery by skimmers or sorbents. High-pressure spraying should be avoided because of potential for transporting contaminated finer sediments (sand) to the lower intertidal or subtidal zones.
- Relocation of oiled sediments from the high-tide zone to the upper intertidal zone can be effective in areas regularly exposed to wave activity (as evidence by storm berms). However, oiled sediments should not be relocated below the mid-tide zone.
- Tilling may be used to reach deeply buried oil layers in the middle zone on exposed beaches.

Gravel Beaches

DESCRIPTION

- Gravel beaches are composed of sediments ranging in size from pebbles to boulders. The gravel-sized sediments can be made up of shell fragments.
- They can be very steep, with multiple wave-built berms forming the upper beach.
- Attached animals and plants are usually restricted to the lowest parts of the beach, where the sediments are less mobile.
- The presence of attached algae, mussels, and barnacles indicates beaches that are relatively sheltered, with the more stable substrate supporting a richer biota.

PREDICTED OIL BEHAVIOR

- Deep penetration and rapid burial of stranded oil is likely on exposed beaches.
- On exposed beaches, oil can be pushed over the high-tide and storm berms, pooling and persisting above the normal zone of wave wash.
- Long-term persistence will be controlled by the depth of penetration versus the depth of routine reworking by storm waves.
- On the more sheltered portions of beaches, formation of asphalt pavements is likely where accumulations are heavy.

RESPONSE CONSIDERATIONS

- Heavy accumulations of pooled oil should be removed quickly from the upper beach.
- All oiled debris should be removed.
- Sediment removal should be limited as much as possible.
- Low- to high-pressure flushing can be used to float oil away from the sediments for recovery by skimmers or sorbents.
- Relocation of oiled sediments from the high-tide zone to the upper intertidal zone can be effective in areas regularly exposed to wave activity (as evidenced by storm berms). However, oiled sediments should not be relocated below the mid-tide zone.
- Tilling may be used to reach deeply buried oil layers in the upper- to mid-tide zone on exposed beaches.

6.6 SHORELINE DESCRIPTORS AND RESPONSE CONSIDERATIONS (Cont'd)

Riprap

DESCRIPTION

- Riprap is composed of cobble- to boulder-sized blocks of granite, limestone, or concrete.
- Riprap structures are used for shoreline protection and channel stabilization (jetties).
- Attached biota are sparse.

PREDICTED OIL BEHAVIOR

- Oil adheres readily to the rough surfaces of the blocks.
- Deep penetration of oil between the blocks is likely.
- Uncleaned oil can cause chronic leaching until the oil solidifies.

RESPONSE CONSIDERATIONS

- When the oil is fresh and liquid, high pressure flushing and/or water flooding may be effective, making sure to recover all liberated oil.
- Heavy and weathered oils are more difficult to remove, requiring scrapping and/or hot-water flushing.
- In extreme cases, it may be necessary to remove heavily oiled blocks and replace them.

Exposed Tidal Flats

DESCRIPTION

- Exposed tidal flats are broad intertidal areas composed primarily of sand and minor amounts of shell and mud.
- The dominance of sand indicates that currents and waves are strong enough to mobilize the sediments.
- They are usually associated with another shoreline type on the landward side of the flat, though they can occur as separate shoals; they are commonly associated with tidal inlets.
- Biological utilization can be very high, with large numbers of infauna, heavy use by birds for roosting and foraging, and use by foraging fish.

PREDICTED OIL BEHAVIOR

- Oil does not usually adhere to the surface of exposed tidal flats, but rather moves across the flat and accumulates at the high-tide line.
- Deposition of oil on the flat may occur on a falling tide if concentrations are heavy.
- Oil does not penetrate water-saturated sediments.
- Biological damage may be severe, primarily to infauna, thereby reducing food sources for birds and other predators.

RESPONSE CONSIDERATIONS

- Currents and waves can be very effective in natural removal of the oil.
- Cleanup is very difficult (and possibly only during low tides).
- The use of heavy machinery should be restricted to prevent mixing of oil into the sediments.

6.6 SHORELINE DESCRIPTORS AND RESPONSE CONSIDERATIONS (Cont'd)

Sheltered Rocky Shores

DESCRIPTION

- These are bedrock shores of variable slope (from vertical cliffs to wide, rocky ledges) that are sheltered from exposure to most wave and tidal energy.
- Wide shores may have some surface sediments, but bedrock is the dominant substrate type.
- Species density and diversity vary greatly, but biota are often very abundant.

PREDICTED OIL BEHAVIOR

- Oil will adhere readily to the rough rocky surface, particularly along the high-tide line, forming a distinct oil band.
- Even on wide ledges, the lower intertidal zone usually stays wet (particularly when algae covered), preventing oil from adhering to the rock surface.
- Heavy and weathered oils can cover the upper zone with little impacts to the rich biological communities of the lower zone.
- Where surface sediments are abundant, oil will penetrate into the crevices formed by the surface rubble, forming persistent pavements.
- Where the rubble is loosely packed, oil will penetrate deeply, causing long-term contamination of the subsurface sediments.

RESPONSE CONSIDERATIONS

- Low-pressure flushing at ambient temperatures is most effective when the oil is fresh.
- Extreme care must be taken not to spray in the biologically rich lower intertidal zone or when the tidal level reaches that zone.
- Cutting of oiled, attached algae is not recommended; tidal action will eventually float this oil off, so sorbent booms should be deployed.

Sheltered, Solid Man-made Structures

DESCRIPTION

- These structure are solid man-made structures such as seawalls, groins, revetments, piers, and port facilities.
- Most structures are constructed of concrete, wood, or metal, and their composition, design and condition are highly variable.
- Often there is no exposed beach at low tide, but a wide variety habitats may be present.
- Attached animal and plant life can be moderate to high.

PREDICTED OIL BEHAVIOR

- Oil will adhere readily to the rough surface, particularly along the high-tide line, forming a distinct oil band.
- The lower intertidal zone usually stays wet (particularly if algae covered), preventing oil from adhering to the surface.

RESPONSE CONSIDERATIONS

- Cleanup of seawalls is usually conducted for aesthetic reasons or to prevent leaching of oil.
- Low- to high-pressure flushing at ambient water temperatures is most effective when the oil is fresh. Hot water is needed for heavy or weathered oils.

6.6 SHORELINE DESCRIPTORS AND RESPONSE CONSIDERATIONS (Cont'd)

Sheltered Tidal Flats

DESCRIPTION

- Sheltered tidal flats are composed primarily of mud with minor amounts of sand and shell.
- They are present in calm-water habitats, sheltered from major wave activity, and are frequently backed by marshes.
- The sediments are very soft and cannot support even light foot traffic in many areas.
- They can be sparsely to heavily covered with algae and/or seagrasses.
- They can have very heavy wrack accumulations along the high-tide line.
- There can be large concentrations of shellfish, worms, and snails on and in the sediments.
- They are heavily utilized by birds and fish for feeding.

PREDICTED OIL BEHAVIOR

- Oil does not usually adhere to the surface of sheltered tidal flats, but rather moves across the flat and accumulates at the high-tide line.
- Deposition of oil on the flat may occur on a falling tide if concentrations are heavy.
- Oil will not penetrate the water-saturated sediments, but could penetrate burrows and root cavities.
- Biological damage may be severe.

RESPONSE CONSIDERATIONS

- These are high-priority areas for protection since cleanup options are very limited.
- Cleanup is very difficult because of the soft substrate; many methods may be restricted.
- Deluge flooding and deployment of sorbents from shallow-draft boats may be helpful.

Vegetated Low Riverine Banks

DESCRIPTION

- This shoreline type consists of either low banks with grasses or low eroding banks with trees and tree roots exposed to the water.
- The banks are flooded occasionally by high water.
- These shorelines are generally found in fresh or brackish water localities.

PREDICTED OIL BEHAVIOR

- During low water stages there could be little impact, with the oil coating a narrow band of sediment at the water level.
- During high water, the oil will cover and coat the grasses and base of the trees.
- May cause loss of the grasses, but the trees should survive unless oil penetrates and persists.

RESPONSE CONSIDERATIONS

- Low-pressure flushing of oiled areas is effective in removing moderate to heavy accumulations of oil from along the banks.
- Sorbent and containment boom should be placed on the water side of the cleanup operations to contain and collect oil outflow.
- Low- to high-pressure flushing can be used to remove oil from tree roots and trunks, if deemed necessary in high-use areas.

6.6 SHORELINE DESCRIPTORS AND RESPONSE CONSIDERATIONS (Cont'd)

Salt- and Brackish-Water Marshes

DESCRIPTION

- These marshes contain vegetation which tolerates water salinity down to about 5 ppt.
- Width of the marsh can vary widely, from a narrow fringe to extensive areas.
- Sediments are composed of organic-rich muds except on the margins of barrier islands where sand is abundant.
- Exposed areas are located along waterbodies with wide fetches and along busy waterways.
- Sheltered areas are not exposed to significant wave or boat wake activity.
- Resident flora and fauna are abundant with numerous species with high utilization by birds, fish, and shellfish.

PREDICTED OIL BEHAVIOR

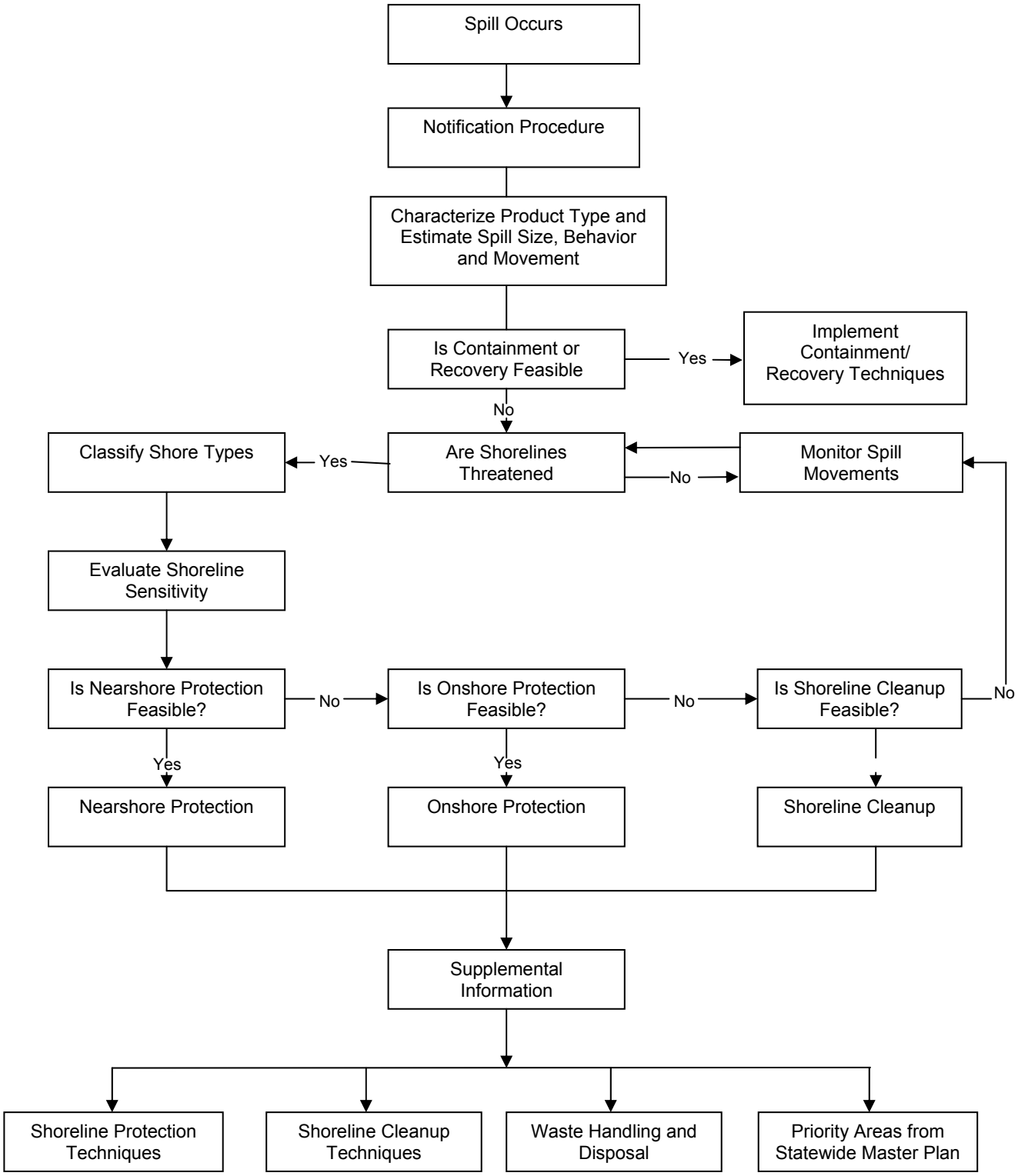
- Oil adheres readily to intertidal vegetation.
- The band of coating will vary widely, depending upon the water level at the time oil slicks are in the vegetation. There may be multiple bands.
- Large slicks will persist through multiple tidal cycles and coat the entire stem from the high-tide line to the base.
- If the vegetation is thick, heavy oil coating will be restricted to the outer fringe, although lighter oils can penetrate deeper, to the limit of tidal influence.
- Medium to heavy oils do not readily adhere to or penetrate the fine sediments, but can pool on the surface of in burrows and root cavities.
- Light oils can penetrate the top few centimeters of sediment and deeply into burrows and mud cracks (up to one meter).

RESPONSE CONSIDERATIONS

- Under light oiling, the best practice is to let the area recover naturally.
- Natural removal processes and rates should be evaluated prior to conducting cleanup.
- Heavy accumulations of pooled oil can be removed by vacuum, sorbents, or low-pressure flushing. During flushing, care must be taken to prevent transporting oil to sensitive areas down slope or along shore.
- Cleanup activities should be carefully supervised to avoid vegetation damage.
- Any cleanup activity must not mix the oil deeper into the sediments. Trampling of the roots must be minimized.
- Cutting of oiled vegetation should only be considered when other resources present are at great risk from leaving the oiled vegetation in place.

FIGURE 6.1

ON WATER RESPONSE FLOWCHART



6.7 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.

6.8 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

Remember these maps are to be utilized as guidelines only. During a real response effort Federal, State, and Local agencies should be contacted to provide further assistance in the proper identification and protection of the various environmental and socio-economic sensitive areas.

SOURCE	EPA	USCG	STATE	OTHER
Texas Oil Spill Planning and Response Atlas Response Maps http://gisweb.glo.texas.gov/atlas/masterpage.pdf Source: US Fish and Wildlife Service: http://www.fws.gov/southwest/es/oklahoma/add_docs.htm			Texas General Land Office	South-west Region

Maps and figures have been redacted in accordance with the FOIA Exemption 7(F).

APPENDIX A

RESPONSE RESOURCES

RESPONSE EQUIPMENT / RESOURCES

FIGURES

RESPONSE EQUIPMENT/RESOURCES

The following sections outline the various response equipment/resources available along the Pipeline, other Company facilities, Oil Spill Removal Organizations, and other outside resources.

A.1 COMPANY OWNED RESPONSE EQUIPMENT

Company owned spill response equipment is staged at various locations in the system. This equipment is maintained according to manufacturer's recommendations by Company personnel. An equipment summary detailing locations, type and amount stored at miscellaneous spill locations is listed in Figure A.1. The Company also has contracts in place with Oil Spill Removal Organizations and other clean-up contractors that are capable of responding to all discharges along the Pipeline. Figure A.2 lists the contracted Oil Spill Removal Organization.

The Qualified Individual has the authority to activate other Company resources or that of private contractors and other experts and consultants as the situation demands.

All Pipeline personnel who might be involved in an oil spill have been informed that **detergents or other surfactants are prohibited from being used on an oil spill in the water** and that dispersants can only be used with the approval of the Regional Response Team, the interagency group composed of federal and state agency representatives that coordinates oil spill response.

A.2 OTHER COMPANY RESOURCES

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

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. Area 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 Company is a member of Clean Channel Association, and therefore, CCA resources are available.

A.5 EXPERTS AND CONSULTANTS

The Company maintains a relationship with various environmental and technical consultants that can provide support in the event of an emergency incident. These consultants can provide expertise and support in the areas of emergency response management, environmental services, site assessment, permitting, waste treatment, recycling, dewatering, hazardous waste disposal, and remediation.

A.6 VOLUNTEERS

Volunteers **will not** be utilized by the Company for the response operations. All volunteers will be referred to the Federal Regional Response Team.

A.7 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 Corporate Rapid Response Team members are demonstrated in the organization charts provided in Figures 4.1 and 4.2. Communication of the overall spill response operation between the Company and the responsible government agencies in the Federal Regional Response Team (FRRT) will occur between the Incident Commander and the Federal On-Scene Coordinator.

A.7.1 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 and police department, medical, and regulatory agencies (Figure 2.5).
- A list of emergency telephone numbers for contract response resources (Figure 2.5).

A.7 COMMUNICATIONS (Cont'd)

A.7.2 Communications Equipment

Field communications during a spill response to a small or medium discharge will be handled via the existing Company communications network. This network will utilize existing radios, telephones, beepers, 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 other Company and contract resources as the situation demands.

A.7.3 Communication Types

Radios - Handheld and vehicle mounted radio sets are the most effective means of communication for the field response operation. The units are battery operated, multi-channeled, 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 a spill response operation. Additional telephone lines can be installed in the event of a prolonged response operation.

Telephone (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. Most response team members carry a cellular phone.

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 spill response equipment is staged at various locations throughout the system. This equipment is maintained according to manufacturer's recommendations by Company personnel.

Page

SOUTH TEXAS / SEAWAY CRUDE RESPONSE EQUIPMENT

Miscellaneous Spill Equipment Location:

FIGURE A.1

COMPANY OWNED SPILL RESPONSE EQUIPMENT (Cont'd)

SOUTH TEXAS / SEAWAY CRUDE RESPONSE EQUIPMENT

MISCELLANEOUS SPILL EQUIPMENT

Texas City Equipment

Description	Quantity
Boom	
18" Seam Boom	3,000'
Sorbents	
3M Type Oil Sorbent - Sheets	12 bales
Oil Sorbent Roles (38"X144')	9 roles
5" Sorbent Boom	4
8" Sorbent Boom	7
Boat	
Boat equipped with outboard motor and trailer	1
Boom Trailers	2
Generator	
Electric Generator trailer mounted	1

FIGURE A.1

COMPANY OWNED SPILL RESPONSE EQUIPMENT (Cont'd)

SOUTH TEXAS / SEAWAY CRUDE RESPONSE EQUIPMENT (Cont'd)

MISCELLANEOUS SPILL EQUIPMENT (Cont'd)

Freeport Dock Equipment

Description	Quantity
Boom	
18" Seam Boom	3,000'
Sorbents	
3M Type Oil Sorbent	10 bales – Sheets
Boat	
18' boat equipped with twin outboard motors	
Generator	
Electric Generator trailer mounted	
Pressure Washer	
4000 psi trailer mounted pressure washer with 300 gallon tank for dispensing bio-remediation agents	

FIGURE A.2

CONTRACTED RESPONSE RESOURCES

Houston-Galveston Captain of the Port (COTP) Zone

USCG Classified Oil Spill Removal Organization (OSRO)							
OSRO Name	Contract Number	Environment Type	Facility Classification Level				High Volume Port
			MM	W1	W2	W3	
Clean Channel Association	on-file	Rivers/Canals	X	X	X	X	Yes
		Inland	X	X	X	X	
		Open Ocean					
		Offshore					
		Nearshore					
		Great Lakes					
SWS Environmental Services		Rivers/Canals			X	X	
		Inland			X	X	
		Open Ocean					
		Offshore					
		Nearshore					
		Great Lakes					
Garner Environmental Services	on-file	Rivers/Canals	X	X	X	X	Yes
		Inland	X	X	X	X	
		Open Ocean			X	X	
		Offshore			X	X	
		Nearshore			X	X	
		Great Lakes					
Heritage Environmental Services – (HES)	on-file	Rivers/Canals			X	X	Yes
		Inland				X	
		Open Ocean					
		Offshore					
		Nearshore					
		Great Lakes					
T & T Marine Salvage, Inc	on-file	Rivers/Canals	X	X	X	X	Yes
		Inland	X	X			
		Open Ocean					
		Offshore					
		Nearshore					
		Great Lakes					

USCG Classified Oil Spill Removal Organization (OSRO) (cont'd)							
OSRO Name	Contract Number	Environment Type	Facility Classification Level				High Volume Port
			MM	W1	W2	W3	
Anderson Pollution Control		Rivers/Canals	X	X	X		
		Inland	X				
		Open Ocean					
		Offshore					
		Nearshore					
		Great Lakes					
National Response Corporation		Rivers/Canals	X	X	X	X	
		Inland	X	X	X	X	
		Open Ocean			X	X	
		Offshore	X		X	X	
		Nearshore	X		X	X	
		Great Lakes					

Note: Classification ratings taken from the USCG's internet site www.uscg.mil/hg/g-m/nmc/response/#OSRO

REVISED 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 [2,3]**	**Maximum Facility Response Times**	**Maximum Vessel Response Times**
Rivers/Canals [1]			
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
W 1	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
W 2	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
W 3	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
W 1	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
W 2	Protective Boom: 30,000*ft EDRC: 12,500 bbls TSC: 25,000 bbls	All Ports: 36 hours	All Ports: 42 hours
W 3	Protective Boom: 30,000*ft EDRC: 25,000 bbls TSC: 50,000 bbls	All Ports: 60 hours	All Ports: 66 hours

FIGURE A.3 (Cont'd)

REVISED 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 [2,3]	Maximum Facility Response Times	Maximum Vessel Response Times
Inland [1]			
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
W 1	Protective Boom: 30,000* ft EDRC: 12,500 bbls TSC: 25,000 bbls	High Volume Ports: 12 hours Other Ports: 24 hours	High Volume Ports: 12 hours Other Ports: 24 hours
W 2	Protective Boom: 30,000* ft EDRC: 25,000 bbls TSC: 50,000 bbls	High Volume Ports: 30 hours Other Ports: 36 hours	High Volume Ports: 36 hours Other Ports: 48 hours
W 3	Protective Boom: 30,000* ft EDRC: 50,000 bbls TSC: 100,000 bbls	High Volume Ports: 54 hours Other Ports: 60 hours	High Volume Ports: 60 hours Other Ports: 72 hours
Nearshore			
MM	Protective Boom: 8,000* ft EDRC: 1,200 bbls TSC: 2,400 bbls	High Volume Ports: 6 hours Other Locations: 12 hours	High Volume Ports: 12 hours Other Locations: 24 hours (for open ocean, plus travel time from shore)
W 1	Protective Boom: 30,000* ft EDRC: 12,500 bbls TSC: 25,000 bbls	High Volume Ports: 12 hours Other Locations: 24 hours	High Volume Ports: 12 hours Other Locations: 24 hours
W 2	Protective Boom: 30,000* ft EDRC: 25,000 bbls TSC: 50,000 bbls	High Volume Ports: 30 hours Other Locations: 36 hours	High Volume Ports: 36 hours Other Locations: 48 hours
W 3	Protective Boom: 30,000* ft EDRC: 50,000 bbls TSC: 100,000 bbls	Hgh Volume Ports: 54 hours Other Locations: 60 hours (for open ocean, plus travel time from shore)	High Volume Ports: 60 hours Other Locations: 72 hours (for open ocean, plus travel time from shore)

FIGURE A.3 (Cont'd)

REVISED 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 [2,3]	Maximum Facility Response Times	Maximum Vessel Response Times
Offshore			
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
W [1]	Protective Boom: 15,000* ft EDRC: 12,500 bbls TSC: 25,000 bbls	High Volume Ports: 24 hours Other Ports: 48 hours	High Volume Ports: 24 hours Other Ports: 48 hours
W [2]	Protective Boom: 15,000* ft EDRC: 25,000 bbls TSC: 50,000 bbls	High Volume Ports: 30 hours Other Ports: 36 hours	High Volume Ports: 36 hours Other Ports: 48 hours
W [3]	Protective Boom: 15,000 ft EDRC: 50,000 bbls TSC: 100,000 bbls	High Volume Ports: 54 hours Other Ports: 60 hours	High Volume Ports: 60 hours Other Ports: 72 hours
Open Ocean			
MM	Protective Boom: 0 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
W [1]	Protective Boom: 0 ft EDRC: 12,500 bbls TSC: 25,000 bbls	High Volume Ports: 6 hours Other Ports: 12 hours	High Volume Ports: 12 hours Other Ports: 24 hours
W [2]	Protective Boom: 0 ft EDRC: 25,000 bbls TSC: 50,000 bbls	High Volume Ports: 30 hours Other Ports: 36 hours	High Volume Ports: 36 hours Other Ports: 48 hours
W [3]	Protective Boom: 0 ft EDRC: 50,000 bbls TSC: 100,000 bbls	High Volume Ports: 54 hours Other Ports: 60 hours	High Volume Ports: 60 hours Other Ports: 72 hours

[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).

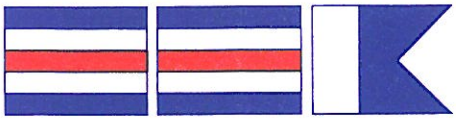
[2] EDRC stands for "effective daily recovery capacity," or the calculated recovery capacity of oil recovery devices determined by using a formula that takes into account limiting factors such as daylight, weather, sea state, and emulsified oil in the recovered material.

[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

CLEAN CHANNEL ASSOCIATION



CLEAN CHANNEL ASSOCIATION

3 April 2012

Mr. David Williams
Sr. Field Environmental Scientist
Enterprise Products
Houston, Texas

Dear Mr. Williams:

This is to confirm that Enterprise Products is a member in good standing of Clean Channel Association, Inc. (CCA), an oil spill response cooperative. CCA maintains the highest classification as an oil spill removal organization (OSRO): MM/W1-W3, River/Canal/Inland, for Facilities and Vessels in Houston and Port Arthur COTP zones. CCA is also certified by the Texas General Land Office as a response company (DCO).

CCA will respond to Enterprise's worst case spill, if necessary.

CCA's spill response equipment is maintained and tested on a routine basis in accordance with manufacturers' suggestions and our self-established preventative maintenance schedule.

In addition to the maintenance program, CCA conducts drills designed to meet OSRO PREP requirements.

Finally, the larger CCA vessels hold Certificates of Inspection, which subject the vessels to periodic U. S. Coast Guard inspection.

Sincerely,

S. P. "Phil" Glenn
President/Administrative Director

Encl: Clean Channel Assn. Equipment List

3110 Pasadena Freeway • Pasadena, Texas 77503 • Phone: (713) 534-6195 • Fax: (713) 534-6197

CLEAN CHANNEL ASSOCIATION OWNED EQUIPMENT

A. Equipment located at CCA/Pasadena office/warehouse

1. Trailer containing 1700 feet of 18" oil spill containment boom with related equipment including, without limitation, tow bridals and anchors;
2. Trailer containing 1000 feet of 24" oil spill containment boom
3. Two 18' outboard powered workboats
4. Three each three-inch diesel driven portable pumps with portable hoses
5. Two each two-inch diesel driven portable pumps with hoses
6. One Pharos Marine GT-185 skimming system with hydraulic power pack
7. One Gastech LEL/OXY/H_2S meter
8. 2,000 feet of 8" oil spill containment boom
9. Two portable weir skimmers (Douglas 18000)
10. Sludgemaster Pump for heavy oils (300 gpm)
11. 40' shipping container
12. One 18' Boston Whaler with 150 hp engine
13. One LORI skimming system mounted on a 26' vessel with 20 bbls storage.
14. One JBF DIP 402 Skimmer Vessel
15. One 24' decontamination trailer, supplies for 100 showers, and cleaning materials

B. One 40' shipping container located at Dow Chemical Co., Freeport, Texas equipped with the following:

1. 1,400 feet of 36" oil spill containment boom with related equipment including, without limitation, tow bridals and anchors
2. One each three-inch diesel driven portable pump with portable hoses
3. One portable wier skimmer (Douglas 18000)
4. One 2,100 gal. Fastank portable storage container

C. The following equipment is owned by Clean Channel Association and normally stored on board vessels *Clean Channel 2* and *Clean Channel 3*:

1. 1,000 feet of 18" oil spill containment boom (each skimmer barge)
2. One portable wier skimmer (Douglas 18000) with hoses (each skimmer barge)

D. One 20' trailer located at T&T Marine Salvage, Galveston, Texas, containing 1,000 feet of 18" oil spill containment boom.

E. One LORI skimming system mounted on a 24' vessel with 50 bbls storage located in Freeport, Texas.

F. One JBF DIP 402 Skimmer Vessel located at Shell Oil Deer Park Refinery.

1. 2,000 feet of 24" oil spill containment boom

G. 1000 feet of 24" oil spill containment boom located at Westway Terminal, Galena Park, TX

CLEAN CHANNEL ASSOCIATION, INC.
LEASED EQUIPMENT

Clean Channel 2 and *Clean Channel 3* -
Two (2) recovery barges 30' x 120' with 1,500 bbl capacity with oil recovery system and related equipment including:

1. built-in weir skimming system
2. cargo pump 4", electric driven
3. trash pump 3", electric driven, 3 each
4. 100kw diesel powered generator
5. three (3) 2" double diaphragm air pumps
6. two Elastec Model 136 2-drum drum skimmers

FIGURE A.4 (Cont'd)

SWS ENVIRONMENTAL SERVICES

EPCO
HOLDINGS,
INC.

WORK CONTRACT NO. 5142
ORIGINATOR BRYAN MCARTHY
(Type/Print Department and Location)

EPCO HOLDINGS, INC.
SERVICE AGREEMENT (Rev. 07/06)

THIS CONTRACT is entered into this 18th day of July, 2007, in the City of Houston, Harris County, Texas, between EPCO Holdings, Inc., a Delaware Corporation, and its Affiliates, P. O. Box 4735, Houston, Texas 77210-4735 ("Company"), and:

SOUTHERN WASTE SERVICES, INC.,
(Full Legal Name)

A Florida Corporation
(State) (Corporation, Partnership or Sole Proprietorship)

901 McClosky Blvd
(Address)

Tampa, Florida 33605 ("Contractor")
(City) State) (Zip)

IN CONSIDERATION of the mutual promises in this Contract and other good and valuable consideration, the parties agree as follows:

I. APPROVED CONTRACTOR LIST Upon execution of this Contract by Contractor and Company, Contractor shall be included on Company's Approved Contractor List, indicating Contractor's eligibility to perform Work for Company; and Company and Contractor agree that this Contract shall remain in force until terminated as provided by its terms.

II. DEFINITIONS "Contract" and "Agreement" mean this Contract and any subsequent oral or written Work order or agreement (together with any drawings, specifications or other exhibits attached to it) between the parties for Work. "Work" means all labor, goods, materials and services required to be performed and furnished by Contractor under any Agreement. "Affiliate" means with respect to any relevant entity, any other entity that directly or indirectly Controls, is Controlled by, or is under common Control with, such relevant entity in question. "Control" means with respect to an entity, the ability or power, directly or indirectly, through one or more intermediaries, to direct or cause the direction of the management of such entity, whether through ownership of voting securities, by contract or otherwise.

III. PERFORMANCE Contractor represents and warrants that all Work shall be in strict accordance with and subject to all Contract terms and conditions, that it has adequate equipment in good working order and fully trained personnel capable of efficiently operating such equipment or performing any services provided under any Agreement, and that all Work shall be performed in a good and workmanlike manner, satisfactory and acceptable to Company.

IV. INDEPENDENT CONTRACTOR Contractor is and shall be an independent contractor with respect to Work, and neither Contractor nor its employees or subcontractors or their employees shall be deemed, for any purpose, to be the employee, agent, servant, or representative of Company in the performance of Work. Company shall have no direction or control of the Contractor or its employees and agents except in the results to be obtained. Work shall conform with all applicable specifications and meet the approval of Company and shall be subject to the general right of inspection by or for Company. The actual performance and superintendence of Work shall be by Contractor, but Company or its representative shall have unlimited access to Contractor's operations to determine whether Work is being performed by Contractor in accordance with the Contract.

V. EMPLOYMENT CONTRIBUTIONS AND BENEFITS Contractor agrees to accept full and exclusive liability for the payment of and to pay when due any and all premiums, contributions and taxes for Workers Compensation Insurance and Unemployment Insurance and for old age pensions, annuities and other retirement benefits imposed by or pursuant to Federal or State law and measured by the wages, salaries or other remuneration paid to persons employed by Contractor; and Contractor further agrees to indemnify and hold Company harmless against any liability for any such premiums, taxes or contributions which may be assessed against Company with respect to Contractor, its employees or subContractors.

VI. TAXES AND FEES Contractor agrees to accept full and exclusive liability for the payment of and to pay when due all taxes, licenses and fees levied or assessed by any governmental agency on Contractor in connection with or incident to the performance of any Agreement. Contractor agrees to require the same covenant of and be liable for any breach of it by its subcontractors. Contractor agrees to reimburse Company on demand for all such local, state or federal taxes or governmental charges which Company may be required or deem it necessary to pay on account of employees of Contractor or its subcontractors, or Company may deduct such payments from any sums which may be or become due to Contractor from Company; Contractor agrees to furnish Company with timely, sufficient and accurate information to make such reports and to pay such taxes and governmental charges if requested by Company.

VII. LABOR AND MATERIAL Contractor shall pay all claims for labor and material related to the Work and shall not permit any liens of any kind to be fixed against the property of Company or the property of others arising out of claims of Contractor, its

(2) becomes available to the public subsequent to receipt of such information by Contractor pursuant to any Agreement and through no fault of Contractor; or

(3) was already in Contractor's possession and not acquired, either directly or indirectly, from Company under an obligation of confidentiality; or

(4) subsequently is obtained from a third party who is lawfully in possession of such information and who is not under a contractual or fiduciary obligation to Company or another person with respect to such information.

XXX. TENSE, GENDER AND NUMBER Unless expressly provided otherwise, the use in this Contract of the past, present or future tense shall include the others, the masculine, feminine or neuter gender shall include the others, and the singular or plural number shall include the other.

XXXI CONSTRUCTION The titles to the articles of this Contract are for the convenience of the parties, only; they are not a part of the Contract and shall have no effect in the construction or interpretation of it. In the event of a dispute over the meaning or application of any Agreement, it shall be construed fairly and reasonably and neither more strongly for nor against either party.

XXXII EXHIBITS The Exhibits checked below and attached to this Contract are incorporated in and made a part of it for all purposes:

_X_	Exhibit I	Scope of Work
_X_	Exhibit II	Price & Invoicing
_X_	Exhibit III	Drug, Alcohol & Illegal Items Policy
_X_	Exhibit IV	Insurance
___	Exhibit V	Schedule
___	Exhibit VI	Drawings & Attachments
___	Exhibit VII	General Requirements
___	Exhibit VIII	Consultant Terms & Conditions
___	Exhibit IX	Purchase Terms & Conditions

In the event of any conflict between the foregoing terms of this Contract and the Exhibits, the foregoing terms shall prevail.

EPCO HOLDINGS, INC.,

By: _____
LEONARD MALLETT

Title: **SENIOR VICE PRESIDENT**

SOUTHERN WASTE SERVICES, INC.,
CONTRACTOR

By: _____

Title: PRESIDENT

FIGURE A.4 (Cont'd)

NATIONAL RESPONSE CORPORATION

ASSIGNMENT OF CONTRACTS

APR 17 2008

THIS ASSIGNMENT OF CONTRACTS (this "Assignment") dated effective as of _____ between ENTERPRISE PRODUCTS OPERATING L.P., (as successor in interest to GulfTerra Energy Partners, L.P) a Delaware limited partnership (the "Assignor"), and EPCO HOLDINGS, INC., a Delaware Corporation and its affiliates (the "Assignee");

WHEREAS, the Assignee wishes to acquire from the Assignor, and the Assignor wishes to assign and transfer to the Assignee, the contracts listed on the attached Exhibit A and the rights, titles and benefits of the Assignor thereunder (the "Assigned Contracts");

NOW, THEREFORE, for and in consideration of the premises and the agreements and covenants set forth herein and in the Agreement and other good and valuable consideration, the receipt, adequacy and sufficiency of which are hereby acknowledged, the Assignor does hereby assign, transfer, set over and deliver unto the Assignee the Assigned Contracts and all rights, titles, interests, benefits and privileges of the Assignor thereunder.

The Assignor and the Assignee do hereby further agree as follows:

1. The Assignee hereby assumes and agrees to timely perform all of the terms, covenants and conditions of the Assigned Contracts required to be observed, performed or fulfilled thereunder by the Assignor.

2. All of the covenants, terms and conditions set forth herein shall be binding upon and shall inure to the benefit of the parties hereto and their respective successors and assigns.

3. The Assignor and the Assignee agree and acknowledge that the terms and provisions of this Assignment (i) are for the sole benefit of, and relate only to matters and transactions between, the Assignor and the Assignee, and (ii) shall be construed so that none of the liabilities and obligations of, or any rights or remedies which any third party may have against, the Assignor under the Assigned Contracts shall be expanded, increased, broadened or enlarged against the Assignee.

4. It is understood and agreed by the Assignor and the Assignee that this Assignment is being executed to effectuate and evidence in writing the intention of the parties to the Agreement that the Assigned Contracts, and any and all respective rights of the Assignor thereunder be assigned and transferred to the Assignee.

5. This Assignment shall be construed and enforced under and in accordance with and governed by the laws of the State of Texas (without regard to the conflict of laws provisions thereof). This Assignment may not be altered, amended, modified or changed in whole or in part except by an instrument in writing signed by both of the parties hereto. This Assignment may be signed in one or more counterparts, any of which shall be considered an original and all of which shall be deemed to constitute one and the same instrument. If any provision or provisions of this Assignment shall be finally determined by a court of competent

jurisdiction to be unenforceable, invalid or ineffective, all other provisions shall continue in full force and effect notwithstanding.

IN WITNESS WHEREOF, the Assignor and the Assignee have caused this Assignment to be executed by their respective, duly authorized officers or representatives as of the Effective Time.

ASSIGNOR:

ENTERPRISE PRODUCTS OPERATING L.P
By Enterprise Products OLPGP, Inc., its general partner

By: _____
Name: Charles Brabson
Title: Sr V.P.

ASSIGNEE:

EPCO HOLDINGS, INC.

By: _____
Name: Charles Brabson
Title: Sr V.P.

EXHIBIT A

Assigned Contracts

Service Agreement No.	Date	Contractor
#05366	09/01/2004	NATIONAL RESPONSE CORPORATION

AGREEMENT NO. GTM-CS-04-009

BETWEEN

NATIONAL RESPONSE CORPORATION

AND

GULFTERRA ENERGY PARTNERS, LP

AGREEMENT FOR
PROVISION OF RESPONSE RESOURCES

THIS AGREEMENT is made as of the 1ST day of SEPT. 2004.

BETWEEN:

(1) NATIONAL RESPONSE CORPORATION, a corporation incorporated and existing under the laws of Delaware and having its principal office at 3500 Sunrise Highway, Great River, New York 11739 (the "Provider"); and

(2) GULFTERRA ENERGY PARTNERS, LP, a corporation incorporated and existing under the laws of Delaware and having its principal office at Four Greenway Plaza, Houston, Texas 77046 (the "Client").

WHEREAS:

(A) The Client is entering into this Agreement with respect to the Facilities and Vessels described in Schedule 1;

(B) Pursuant to federal law of the United States and the laws of various states of the United States, the Client, or the entities on whose behalf the Client is arranging for the appointment of an oil spill removal organization, may be required to evidence preparedness to respond to discharges of oil from Facilities or Vessels in United States navigable waters, including pre-contracting to meet planning requirements;

(C) The Provider has, or through a network of independent contractors, has access to resources to respond to discharges of oil from Facilities or Vessels as required under federal law in Section 4202 of the United States Oil Pollution Act of 1990 and under state laws and as denominated in Facility or Vessel response plans;

(D) The Provider and Client understand that the requirements for mobilization of response resources set forth under federal law, state laws or in Facility response plans are planning requirements;

(E) The Client or the principals on whose behalf the Client is acting desire to name the Provider as its oil spill removal organization in the response plans for the Facilities and/or Vessels referred to herein;

(F) The Client has agreed to appoint the Provider to act as an Oil Spill Removal Organization upon and subject to the terms and conditions of this Agreement; and

(G) The Provider accepts such appointment and agrees to act as an oil spill removal organization upon and subject to the terms and conditions of this Agreement.

21.2 The Client may delete any entity or entities from Schedule 1 at any time or time such entity or entities cease to be controlled by, or under common control with, Client. Any facilities or vessels owned, operated or controlled by any entities deleted from Schedule 1 shall automatically be deleted from Schedule 1.

21.2 The Client may add a Facility and/or Vessel to Schedule 1 upon five (5) business days notice, supported with proof of Marine Oil Pollution Insurance and such other information as specified on Schedule 1.

IN WITNESS whereof, the parties have duly executed this Agreement as of the date first written above.

Signature: Steven A. Candito/ by: Helen G. Gidemann
Name: Steven A. Candito
Position: President
For and on behalf of
NATIONAL RESPONSE CORPORATION

Signature: E. K. L...
Name: Randy West
Position: Vice President
For and on behalf of
GULFTERRA ENERGY PARTNERS, LP

MTM

FIGURE A.4 (Cont'd)

GARNER ENVIRONMENTAL SERVICES, INC.

WORK CONTRACT NO. 2028
ORIGINATOR ALVARO PARRA
(Type/Print Department and Location)

ENTERPRISE PRODUCTS OPERATING L.P.

SERVICE AGREEMENT (Rev. 08/98)

THIS CONTRACT is entered into this 15th day of March, 2004, in the City of Houston, Harris County, Texas, between ENTERPRISE PRODUCTS OPERATING L.P., a Delaware limited partnership, P. O. Box 4324, Houston, Texas 77210-4324 ("Company"), and:

GARNER ENVIRONMENTAL SERVICES, INC.
(Full Legal Name)

a Texas Corporation
(State) (Corporation, Partnership or Sole Proprietorship)

1717 West 13th Street
(Address)

Deer Park, Texas 77536 ("Contractor").
(City) (State) (Zip)

IN CONSIDERATION of the mutual promises in this Contract and other good and valuable consideration, the parties agree as follows:

I. APPROVED CONTRACTOR LIST Upon execution of this Contract by Contractor and Company, Contractor shall be included on Company's Approved Contractor List, indicating Contractor's eligibility to perform Work for Company; and Company and Contractor agree that this Contract shall remain in force until terminated as provided by its terms.

II. DEFINITIONS "Contract" and "Agreement" mean this Contract and any subsequent oral or written Work order or agreement (together with any drawings, specifications or other exhibits attached to it) between the parties for Work. "Work" means all labor, goods, materials and services required to be performed and furnished by Contractor under any Agreement.

III. PERFORMANCE Contractor represents and warrants that all Work shall be in strict accordance with and subject to all Contract terms and conditions, that it has adequate equipment in good working order and fully trained personnel capable of efficiently operating such equipment or performing any services provided under any Agreement, and that all Work shall be performed in a good and workmanlike manner, satisfactory and acceptable to Company. Contractor represents and warrants that it shall be able to fulfill all of its obligations under any Agreement with no degradation in performance due to the calendar change from 1999 to 2000 and beyond January 1, 2000.

IV. INDEPENDENT CONTRACTOR Contractor is and shall be an independent contractor with respect to Work, and neither Contractor nor its employees or subcontractors or their employees shall be deemed, for any purpose, to be the employee, agent, servant, or representative of Company in the performance of Work. Company shall have no direction or control of the Contractor or its employees and agents except in the results to be obtained. Work shall conform with all applicable specifications and meet the approval of Company and shall be subject to the general right of inspection by or for Company. The actual performance and superintendence of Work shall be by Contractor, but Company or its representative shall have unlimited access to Contractor's operations to determine whether Work is being performed by Contractor in accordance with the Contract.

V. EMPLOYMENT CONTRIBUTIONS AND BENEFITS Contractor agrees to accept full and exclusive liability for the payment of and to pay when due any and all premiums, contributions and taxes for Workers= Compensation Insurance and Unemployment Insurance and for old age pensions, annuities and other retirement benefits imposed by or pursuant to Federal or State law and measured by the wages, salaries or other remuneration paid to persons employed by Contractor; and Contractor further agrees to indemnify and hold Company harmless against any liability for any such premiums, taxes or contributions which may be assessed against Company with respect to Contractor, its employees or subcontractors.

VI. TAXES AND FEES ***All domestic federal, state and municipal taxes, except income taxes and ad-valorem taxes, now and hereinafter imposed with respect to services rendered, to rental equipment, to the processing, manufacture, repair, and to the delivery and transportation of equipment and supplies will be added to and become part of the total price payable by the Company. If Company claims an exemption from payment of Texas Sales and Use Tax, Company will be required to render an Exemption Certificate or a Resale Certificate to Garner Environmental Services, Inc. for said exemption to apply to the services rendered. If for any reason the services rendered result in the assessment of foreign income taxes, excise taxes, or other fees alleged as owing to a foreign state or government, Company will pay directly the amount of any assessment or fee. In the event Contractor pays any such foreign tax or fee directly, Company will promptly reimburse Contractor for same.***

VII. LABOR AND MATERIAL Contractor shall pay all claims for labor and material related to the Work and shall not permit any liens of any kind to be fixed against the property of Company or the property of others arising out of claims of Contractor, its employees, mechanics, materialmen, or subcontractors; and upon the completion of the Work, Contractor shall furnish Company with evidence satisfactory to Company of the payment of all such claims. Contractor shall indemnify and hold harmless Company from and against all such claims or liens; and Contractor agrees, that, without waiver of any other rights or remedies available to Company, any sums due to Contractor from Company may be withheld and applied by Company toward the discharge or payment of any such claims or liens.

XXXII EXHIBITS The Exhibits checked below and attached to this Contract are incorporated in and made a part of it for all purposes:

_x_	Exhibit I	Scope of Work
_x_	Exhibit II	Price & Invoicing
_x_	Exhibit III	Drug, Alcohol & Illegal Items Policy
_x_	Exhibit IV	Insurance
___	Exhibit V	Schedule
___	Exhibit VI	Drawings & Attachments
___	Exhibit VII	General Requirements
___	Exhibit VIII	Consultant Terms & Conditions
___	Exhibit IX	_____

In the event of any conflict between the foregoing terms of this Contract and the Exhibits, the foregoing terms shall prevail.

ENTERPRISE PRODUCTS OPERATING L.P.
By Enterprise Products OLPGP, INC., its general partner

By: _____

Title: Vice President, Environmental Administration

GARNER ENVIRONMENTAL SERVICES, INC.
CONTRACTOR

By: Otis Chambers

Title: EXECUTIVE VICE PRESIDENT

SERVICE AGREEMENT.DOC

FIGURE A.4 (Cont'd)

HERITAGE ENVIRONMENTAL SERVICES, INC.

EPCO
HOLDINGS,
INC.

WORK CONTRACT NO. **5164**
ORIGINATOR: **BRYAN MCARTHY**
(Type/Print Department and Location)

EPCO HOLDINGS, INC.
SERVICE AGREEMENT (Rev. 07/06)

THIS CONTRACT is entered into this **21st** day of **JULY, 2008,** in the City of Houston, Harris County, Texas, between EPCO Holdings, Inc., a Delaware Corporation, and its Affiliates, P. O. Box 4735, Houston, Texas 77210-4735 ("Company"), and:

HERITAGE ENVIRONMENTAL SERVICES, LLC
(Full Legal Name)

A INDIANA LIMITED LIABILITY COMPANY
(State) (Corporation, Partnership or Sole Proprietorship)

7901 WEST MORRIS STREET
(Address)

INDIANAPOLIS, IN 46231 ("Contractor").
(City) (State) (Zip)

IN CONSIDERATION of the mutual promises in this Contract and other good and valuable consideration, the parties agree as follows:

I. APPROVED CONTRACTOR LIST Upon execution of this Contract by Contractor and Company, Contractor shall be included on Company's Approved Contractor List, indicating Contractor's eligibility to perform Work for Company; and Company and Contractor agree that this Contract shall remain in force until terminated as provided by its terms.

II. DEFINITIONS "Contract" and "Agreement" mean this Contract and any subsequent oral or written Work order or agreement (together with any drawings, specifications or other exhibits attached to it) between the parties for Work. "Work" means all labor, goods, materials and services required to be performed and furnished by Contractor under any Agreement. "Affiliate" means with respect to any relevant entity, any other entity that directly or indirectly Controls, is Controlled by, or is under common Control with, such relevant entity in question. "Control" means with respect to an entity, the ability or power, directly or indirectly, through one or more intermediaries, to direct or cause the direction of the management of such entity, whether through ownership of voting securities, by contract or otherwise.

III. PERFORMANCE Contractor represents and warrants that all Work shall be in strict accordance with and subject to all Contract terms and conditions, that it has adequate equipment in good working order and fully trained personnel capable of efficiently operating such equipment or performing any services provided under any Agreement, and that all Work shall be performed in a good and workmanlike manner, satisfactory and acceptable to Company.

IV. INDEPENDENT CONTRACTOR Contractor is and shall be an independent contractor with respect to Work, and neither Contractor nor its employees or subcontractors or their employees shall be deemed, for any purpose, to be the employee, agent, servant, or representative of Company in the performance of Work. Company shall have no direction or control of the Contractor or its employees and agents except in the results to be obtained. Work shall conform with all applicable specifications and meet the approval of Company and shall be subject to the general right of inspection by or for Company. The actual performance and superintendence of Work shall be by Contractor, but Company or its representative shall have unlimited access to Contractor's operations to determine whether Work is being performed by Contractor in accordance with the Contract.

V. EMPLOYMENT CONTRIBUTIONS AND BENEFITS Contractor agrees to accept full and exclusive liability for the payment of and to pay when due any and all premiums, contributions and taxes for Workers' Compensation Insurance and Unemployment Insurance and for old age pensions, annuities and other retirement benefits imposed by or pursuant to Federal or State law and measured by the wages, salaries or other remuneration paid to persons employed by Contractor; and Contractor further agrees to indemnify and hold Company harmless against any liability for any such premiums, taxes or contributions which may be assessed against Company with respect to Contractor, its employees or subcontractors.

VI. TAXES AND FEES Contractor agrees to accept full and exclusive liability for the payment of and to pay when due all taxes, licenses and fees levied or assessed by any governmental agency on Contractor in connection with or incident to the performance of any Agreement. Contractor agrees to require the same covenant of and be liable for any breach of it by its subcontractors. Contractor agrees to reimburse Company on demand for all such local, state or federal taxes or governmental charges which Company may be required or deem it necessary to pay on account of employees of Contractor or its subcontractors, or Company may deduct such payments from any sums which may be or become due to Contractor from Company; Contractor agrees to furnish Company with timely, sufficient and accurate information to make such reports and to pay such taxes and governmental charges if requested by Company.

VII. LABOR AND MATERIAL Contractor shall pay all claims for labor and material related to the Work and shall not permit any liens of any kind to be fixed against the property of Company or the property of others arising out of claims of Contractor, its employees, mechanics, materialmen, or subcontractors; and upon the completion of the Work, Contractor shall furnish Company with evidence satisfactory to Company of the payment of all such claims. Contractor shall indemnify and hold harmless Company from and against all such claims or liens; and Contractor agrees, that, without waiver of any other rights or remedies available to Company, any sums due to Contractor from Company may be withheld and applied by Company toward the discharge or payment of any such claims or liens.

VIII. PAYMENT FOR WORK Payment for Work shall be as provided in Exhibit II or as provided in any Agreement. Payment for Work performed on a reimbursable-cost basis shall be made by Company to Contractor in accordance with Contractor's then-current rate schedule; Contractor shall furnish Company its rate schedule prior to commencing any such Work and notify Company in writing of any changes in the rate schedule. Neither payment for nor use of Work in whole or in part by Company shall constitute acceptance of any Work or materials which do not conform to Contract terms and specifications or settlement of any unsettled claims, liabilities, duties, liens or other encumbrances. Contractor shall keep accurate books and records of all Work, and, within two (2) years from the completion of Work under a particular Agreement or the termination of this Contract, whichever is earlier, Company or its representative shall have the right to inspect, copy

(3) was already in Contractor's possession and not acquired, either directly or indirectly, from Company under an obligation of confidentiality; or

(4) subsequently is obtained from a third party who is lawfully in possession of such information and who is not under a contractual or fiduciary obligation to Company or another person with respect to such information.

XXX. TENSE, GENDER AND NUMBER Unless expressly provided otherwise, the use in this Contract of the past, present or future tense shall include the others, the masculine, feminine or neuter gender shall include the others, and the singular or plural number shall include the other.

XXXI CONSTRUCTION The titles to the articles of this Contract are for the convenience of the parties, only; they are not a part of the Contract and shall have no effect in the construction or interpretation of it. In the event of a dispute over the meaning or application of any Agreement, it shall be construed fairly and reasonably and neither more strongly for nor against either party.

XXXII EXHIBITS The Exhibits checked below and attached to this Contract are incorporated in and made a part of it for all purposes:

_X__	Exhibit I	Scope of Work
_X__	Exhibit II	Price & Invoicing
_X__	Exhibit III	Drug, Alcohol & Illegal Items Policy
_X__	Exhibit IV	Insurance
___	Exhibit V	Schedule
___	Exhibit VI	Drawings & Attachments
___	Exhibit VII	General Requirements
___	Exhibit VIII	Consultant Terms & Conditions
_X__	Exhibit IX	Purchase Terms & Conditions

In the event of any conflict between the foregoing terms of this Contract and the Exhibits, the foregoing terms shall prevail.

EPCO HOLDINGS, INC.

By: _____

Title: Vice President

HERITAGE ENVIRONMENTAL SERVICES, LLC

By: W J McDaniel

Title: Pres

APPROVED
LEGAL DEPARTMENT
05/13/08

FIGURE A.4 (Cont'd)

T & T MARINE SALVAGE

EPCO
HOLDINGS,
INC.

WORK CONTRACT NO. 5159
ORIGINATOR SCOTT BUTLER
(Type/Print Department and Location)

EPCO HOLDINGS, INC.
SERVICE AGREEMENT (Rev. 07/06)

THIS CONTRACT is entered into this day of 2nd of August, 2007, in the City of Houston, Harris County, Texas, between EPCO Holdings, Inc., a Delaware Corporation, and its Affiliates, P. O. Box 4735, Houston, Texas 77210-4735 ("Company"), and:

T & T MARINE SALVAGE, INC.,
(Full Legal Name)

A Texas Corporation
(State) (Corporation, Partnership or Sole Proprietorship)

9723 Teichman Road
(Address)

Galveston, Texas 77554("Contractor")
(City) (State) (Zip)

IN CONSIDERATION of the mutual promises in this Contract and other good and valuable consideration, the parties agree as follows:

I. APPROVED CONTRACTOR LIST Upon execution of this Contract by Contractor and Company, Contractor shall be included on Company's Approved Contractor List, indicating Contractor's eligibility to perform Work for Company; and Company and Contractor agree that this Contract shall remain in force until terminated as provided by its terms.

II. DEFINITIONS "Contract" and "Agreement" mean this Contract and any subsequent oral or written Work order or agreement (together with any drawings, specifications or other exhibits attached to it) between the parties for Work. "Work" means all labor, goods, materials and services required to be performed and furnished by Contractor under any Agreement. "Affiliate" means with respect to any relevant entity, any other entity that directly or indirectly Controls, is Controlled by, or is under common Control with, such relevant entity in question. "Control" means with respect to an entity, the ability or power, directly or indirectly, through one or more intermediaries, to direct or cause the direction of the management of such entity, whether through ownership of voting securities, by contract or otherwise.

III. PERFORMANCE Contractor represents and warrants that all Work shall be in strict accordance with and subject to all Contract terms and conditions, that it has adequate equipment in good working order and fully trained personnel capable of efficiently operating such equipment or performing any services provided under any Agreement, and that all Work shall be performed in a good and workmanlike manner, satisfactory and acceptable to Company.

IV. INDEPENDENT CONTRACTOR Contractor is and shall be an independent contractor with respect to Work, and neither Contractor nor its employees or subcontractors or their employees shall be deemed, for any purpose, to be the employee, agent, servant, or representative of Company in the performance of Work. Company shall have no direction or control of the Contractor or its employees and agents except in the results to be obtained. Work shall conform with all applicable specifications and meet the approval of Company and shall be subject to the general right of inspection by or for Company. The actual performance and superintendence of Work shall be by Contractor, but Company or its representative shall have unlimited access to Contractor's operations to determine whether Work is being performed by Contractor in accordance with the Contract.

V. EMPLOYMENT CONTRIBUTIONS AND BENEFITS Contractor agrees to accept full and exclusive liability for the payment of and to pay when due any and all premiums, contributions and taxes for Workers Compensation Insurance and Unemployment Insurance and for old age pensions, annuities and other retirement benefits imposed by or pursuant to Federal or State law and measured by the wages, salaries or other remuneration paid to persons employed by Contractor; and Contractor further agrees to indemnify and hold Company harmless against any liability for any such premiums, taxes or contributions which may be assessed against Company with respect to Contractor, its employees or subContractors.

VI. TAXES AND FEES Contractor agrees to accept full and exclusive liability for the payment of and to pay when due all taxes, licenses and fees levied or assessed by any governmental agency on Contractor in connection with or incident to the performance of any Agreement. Contractor agrees to require the same covenant of and be liable for any breach of it by its subcontractors. Contractor agrees to reimburse Company on demand for all such local, state or federal taxes or governmental charges which Company may be required or deem it necessary to pay on account of employees of Contractor or its subcontractors, or Company may deduct such payments from any sums which may be or become due to Contractor from Company; Contractor agrees to furnish Company with timely, sufficient and accurate information to make such reports and to pay such taxes and governmental charges if requested by Company.

VII. LABOR AND MATERIAL Contractor shall pay all claims for labor and material related to the Work and shall not permit any liens of any kind to be fixed against the property of Company or the property of others arising out of claims of Contractor, its employees, mechanics, materialmen, or subContractors; and upon the completion of the Work, Contractor shall furnish Company with

dispute resolution techniques, or if such techniques do not produce results satisfactory to the parties, either party may proceed with litigation. If the parties are unable to resolve any dispute by the alternative dispute resolution techniques described above and either party proceeds with litigation, the losing party shall pay the prevailing party's reasonable attorneys' fees, costs and necessary disbursements in addition to any relief that a court may grant.

XXVIII. AUTHORIZED REPRESENTATIVE Contractor represents and warrants that the person executing this Contract and any Agreement on behalf of Contractor is a duly authorized representative of Contractor and is vested with full authority to bind Contractor.

XXIX. CONFIDENTIAL INFORMATION A. All information concerning the business, customers, products, processes and trade secret information of Company ("Confidential Information") which may come into the possession of Contractor during the course of the negotiation or performance of this Contract or any Agreement is confidential to Company, shall be used by Contractor for the sole purpose of providing services to Company under this Contract and shall not be disclosed by Contractor to any third party without the prior written consent of Company. All Confidential Information shall become and remain the property of Company and shall be deemed to have been entrusted to Contractor only for the limited purposes of this Contract, and Contractor will not, without the prior written consent of Company use, reproduce or copy, or permit the use, reproduction or copying of any Confidential Information; provided, however, Contractor may make adequate reproductions and copies for the purpose of carrying out the Work. All Confidential Information received or created by Contractor and any reproductions or copies thereof made by Contractor shall be delivered to Company at any time prior to termination of this Contract at the request of Company and shall be delivered to Company immediately upon termination of this Contract. Nothing contained in this Contract or in any disclosures made by Company under it shall be construed to grant to Contractor any license or other rights of Company in or to Confidential Information or under any copyright or patent which has been or may in the future be issued with respect to Confidential Information.

B. Contractor will not be bound by the provisions of this Article XXIX with respect to information which:

(1) was available to the public prior to receipt of such information by Contractor pursuant to any Agreement; or

(2) becomes available to the public subsequent to receipt of such information by Contractor pursuant to any Agreement and through no fault of Contractor; or

(3) was already in Contractor's possession and not acquired, either directly or indirectly, from Company under an obligation of confidentiality; or

(4) subsequently is obtained from a third party who is lawfully in possession of such information and who is not under a contractual or fiduciary obligation to Company or another person with respect to such information.

XXX. TENSE, GENDER AND NUMBER Unless expressly provided otherwise, the use in this Contract of the past, present or future tense shall include the others, the masculine, feminine or neuter gender shall include the others, and the singular or plural number shall include the other.

XXXI CONSTRUCTION The titles to the articles of this Contract are for the convenience of the parties, only; they are not a part of the Contract and shall have no effect in the construction or interpretation of it. In the event of a dispute over the meaning or application of any Agreement, it shall be construed fairly and reasonably and neither more strongly for nor against either party.

XXXII EXHIBITS The Exhibits checked below and attached to this Contract are incorporated in and made a part of it for all purposes:

_X_	Exhibit I	Scope of Work
_X_	Exhibit II	Price & Invoicing
_X_	Exhibit III	Drug, Alcohol & Illegal Items Policy
_X_	Exhibit IV	Insurance
___	Exhibit V	Schedule
___	Exhibit VI	Drawings & Attachments
___	Exhibit VII	General Requirements
___	Exhibit VIII	Consultant Terms & Conditions
___	Exhibit IX	Purchase Terms & Conditions

In the event of any conflict between the foregoing terms of this Contract and the Exhibits, the foregoing terms shall prevail.

EPCO HOLDINGS, INC.,

By: _____ 5/21/12

Title: Terry Hurlburt
SrVP Operations

T & T MARINE SALVAGE, INC.,
CONTRACTOR

By: _____

Title: Vice President

FIGURE A.4 (Cont'd)

ANDERSON POLUTION CONTROL, INC.

EPCO HOLDINGS, INC.

WORK CONTRACT NO. **#4864**
ORIGINATOR: **CAREN GOZZI**
(Type/Print Department and Location)

EPCO HOLDINGS, INC.

SERVICE AGREEMENT (Rev. 07/06)

THIS CONTRACT is entered into this **6th** day of **FEBRUARY, 2007** in the City of Houston, Harris County, Texas, between EPCO Holdings, Inc., a Delaware Corporation, and its Affiliates, P. O. Box 4735, Houston, Texas 77210-4735 ("Company"), and:

ANDERSON POLLUTION CONTROL, INC.
(Full Legal Name)

A TEXAS CORPORATION
(State) (Corporation, Partnership or Sole Proprietorship)

1011 WEST LEWIS, SUITE A
(Address)

CONROE, TX 77301 ("Contractor").
(City) (State) (Zip)

IN CONSIDERATION of the mutual promises in this Contract and other good and valuable consideration, the parties agree as follows:

I. APPROVED CONTRACTOR LIST Upon execution of this Contract by Contractor and Company, Contractor shall be included on Company's Approved Contractor List, indicating Contractor's eligibility to perform Work for Company; and Company and Contractor agree that this Contract shall remain in force until terminated as provided by its terms.

II. DEFINITIONS "Contract" and "Agreement" mean this Contract and any subsequent oral or written Work order or agreement (together with any drawings, specifications or other exhibits attached to it) between the parties for Work. "Work" means all labor, goods, materials and services required to be performed and furnished by Contractor under any Agreement. "Affiliate" means with respect to any relevant entity, any other entity that directly or indirectly Controls, is Controlled by, or is under common Control with, such relevant entity in question. "Control" means with respect to an entity, the ability or power, directly or indirectly, through one or more intermediaries, to direct or cause the direction of the management of such entity, whether through ownership of voting securities, by contract or otherwise.

III. PERFORMANCE Contractor represents and warrants that all Work shall be in strict accordance with and subject to all Contract terms and conditions, that it has adequate equipment in good working order and fully trained personnel capable of efficiently operating such equipment or performing any services provided under any Agreement, and that all Work shall be performed in a good and workmanlike manner, satisfactory and acceptable to Company.

IV. INDEPENDENT CONTRACTOR Contractor is and shall be an independent contractor with respect to Work, and neither Contractor nor its employees or subcontractors or their employees shall be deemed, for any purpose, to be the employee, agent, servant, or representative of Company in the performance of Work. Company shall have no direction or control of the Contractor or its employees and agents except in the results to be obtained. Work shall conform with all applicable specifications and meet the approval of Company and shall be subject to the general right of inspection by or for Company. The actual performance and superintendence of Work shall be by Contractor, but Company or its representative shall have unlimited access to Contractor's operations to determine whether Work is being performed by Contractor in accordance with the Contract.

V. EMPLOYMENT CONTRIBUTIONS AND BENEFITS Contractor agrees to accept full and exclusive liability for the payment of and to pay when due any and all premiums, contributions and taxes for Workers' Compensation Insurance and Unemployment Insurance and for old age pensions, annuities and other retirement benefits imposed by or pursuant to Federal or State law and measured by the wages, salaries or other remuneration paid to persons employed by Contractor; and Contractor further agrees to indemnify and hold Company harmless against any liability for any such premiums, taxes or contributions which may be assessed against Company with respect to Contractor, its employees or subContractors.

VI. TAXES AND FEES Contractor agrees to accept full and exclusive liability for the payment of and to pay when due all taxes, licenses and fees levied or assessed by any governmental agency on Contractor in connection with or incident to the performance of any Agreement. Contractor agrees to require the same covenant of and be liable for any breach of it by its subcontractors. Contractor agrees to reimburse Company on demand for all such local, state or federal taxes or governmental charges which Company may be required or deem it necessary to pay on account of employees of Contractor or its subcontractors, or Company may deduct such payments from any sums which may be or become due to Contractor from Company; Contractor agrees to furnish Company with timely, sufficient and accurate information to make such reports and to pay such taxes and governmental charges if requested by Company.

VII. LABOR AND MATERIAL Contractor shall pay all claims for labor and material related to the Work and shall not permit any liens of any kind to be fixed against the property of Company or the property of others arising out of claims of Contractor, its employees, mechanics, materialmen, or subContractors; and upon the completion of the Work, Contractor shall furnish Company with evidence satisfactory to Company of the payment of all such claims. Contractor shall indemnify and hold harmless Company from and

(1) was available to the public prior to receipt of such information by Contractor pursuant to any Agreement; or

(2) becomes available to the public subsequent to receipt of such information by Contractor pursuant to any Agreement and through no fault of Contractor; or

(3) was already in Contractor's possession and not acquired, either directly or indirectly, from Company under an obligation of confidentiality; or

(4) subsequently is obtained from a third party who is lawfully in possession of such information and who is not under a contractual or fiduciary obligation to Company or another person with respect to such information.

XXX. TENSE, GENDER AND NUMBER Unless expressly provided otherwise, the use in this Contract of the past, present or future tense shall include the others, the masculine, feminine or neuter gender shall include the others, and the singular or plural number shall include the other.

XXXI CONSTRUCTION The titles to the articles of this Contract are for the convenience of the parties, only; they are not a part of the Contract and shall have no effect in the construction or interpretation of it. In the event of a dispute over the meaning or application of any Agreement, it shall be construed fairly and reasonably and neither more strongly for nor against either party.

XXXII EXHIBITS The Exhibits checked below and attached to this Contract are incorporated in and made a part of it for all purposes:

_X_	Exhibit I	Scope of Work
_X_	Exhibit II	Price & Invoicing
_X_	Exhibit III	Drug, Alcohol & Illegal Items Policy
_X_	Exhibit IV	Insurance
___	Exhibit V	Schedule
___	Exhibit VI	Drawings & Attachments
___	Exhibit VII	General Requirements
___	Exhibit VIII	Consultant Terms & Conditions
___	Exhibit IX	Purchase Terms & Conditions

In the event of any conflict between the foregoing terms of this Contract and the Exhibits, the foregoing terms shall prevail.

EPCO HOLDINGS, INC.

By: _____

Title: Senior Vice President

ANDERSON POLLUTION CONTROL, INC.

By: Thomas Anderson

Title: Asst / Treasurer

APPENDIX B

WORST CASE DISCHARGE ANALYSIS AND SCENARIO

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.

DOT-PHMSA requires that pipeline operators calculate a worst case discharge amount for each response zone. The calculations and descriptions are as follows:

DOT- PHMSA Discharge Volume Calculation

- **Worst Case Discharge**
  The largest volume (Bbl) 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

The occurrence of a Worst Case Discharge (WCD) could be the result of any number of scenarios along the pipeline system including:

- Piping rupture.
- Piping leak, under pressure and not under pressure.
- Explosion or fire.
- Equipment failure (e.g. pumping system failure, relief valve failure, or other general equipment relevant to operational activities associated with internal or external facility transfers).

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 2.6. 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

SOUTH TEXAS / SEAWAY CRUDE RESPONSE ZONE

PHMSA - Worst Case Discharge = (b) (7)(F)

A worst case discharge for the South Texas / Seaway Crude Response Zone is considered to be discharge that does not exceed (b) (7)(F)

Breakout Tank Worst Case Discharge = (b) (7)(F)

Description

This size discharge would most likely occur due to a natural disaster or catastrophic event. Examples may include, but not be limited to:

- Tank fire
- Catastrophic tank shell failure

The type of material that could be discharged is Crude Oil.

Volume

A worst case discharge scenario involving breakout tankage uses the single largest volume tank in the response zone, adjusted for the size of the secondary containment system. Applicable adjustment(s) for the largest tank at the Terminal, including secondary containment include:

Spill Prevention Measures	Percent Reduction Allowed
Secondary containment capacity greater than 100% capacity of tank and designed according to NFPA 30.	50%
Built/repaired according to API STD 620/650/653	10%
Overfill protection standards according to API RP 2350	5%
Testing/cathodic protection according to API STD 650/651/653	5%

(b) (7)(F)

A catastrophic discharge can originate from a line section. However, the maximum amount does not exceed the amount that could be released from the largest storage tank.

RESPONSE CAPABILITY SCENARIOS

SOUTH TEXAS / SEAWAY CRUDE RESPONSE ZONE (Cont'd)

Pipeline Worst Case Discharge = (b) (7)(F)

Description

(b) (7)(F)

Volume

This scenario would result in a release of (b) (7)(F) of crude oil. The pipeline worst case discharge is calculated as:

(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 level requirements for non-high volume areas (Level 1 = 12 hours; Level 2 = 36 hours; Level 3 = 60 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 2.6 and Appendix A.
- Telephone references are provided in Figures 2.2 and 2.5.

SOUTH TEXAS / SEAWAY CRUDE DISTRICT RESPONSE ZONE

Response Planning Volume Calculations

Location Data	
Location Type	Nearshore/Inland
DOT - Area Type	Non-High Volume
WCD Product Type	Crude Oil
Product Group	3
Capacity of the Largest Single Tank (bbl)	(b) (7)
Discharge Volumes/Calculations	
Average Most Probable or Small Discharge (bbl)	50
Maximum Most Probable or Medium Discharge (bbl)	857
Worst Case Discharge - Based on EPA criteria (bbl)	(b) (7)
EPA WCD Calculation: 100% * Capacity of the Largest Single Tank	
Selected Calculation Factors (Based on EPA Tables)	
Removal Capacity Planning Volume - Percent Natural Dissipation	30%
Removal Capacity Planning Volume - Percent Recovered Floating Oil	50%
Removal Capacity Planning Volume - Percent Oil Onshore	50%
Emulsification Factor	2.0
Level 1 - On Water Oil Recovery Resource Mobilization Factor	15%
Level 2 - On Water Oil Recovery Resource Mobilization Factor	25%
Level 3 - On Water Oil Recovery Resource Mobilization Factor	40%
Response Planning Volume Calculation	
On-Water Recovery Volume (bbl)	90,000
Shoreline Recovery Volume (bbl)	90,000
Shoreline Cleanup Volume (bbl)	180,000

	Level 1	Level 2	Level 3
On-Water Recovery Cpcty (bbl/day)	27,000	45,000	72,000
Shallow Water Resp Cpblty (bbl/day)	5,400	9,000	14,400
Storage Capacity (bbl/day)	54,000	90,000	144,000
On-Water Response Caps (bbl/day)	12,500	25,000	50,000
Additional Response Req'd (bbl/day)	14,500	20,000	22,000
Response Time (hrs)	12	36	60

RESPONSE CAPABILITY SCENARIOS

WEST TEXAS / RED RIVER CRUDE RESPONSE ZONE

PHMSA - Worst Case Discharge (b) (7)(F)

A worst case discharge for the West Texas Crude Response Zone is considered to be discharge that does not exceed (b) (7)(F).

A worst case discharge for the Red River Response Zone is considered to be discharge that does not exceed (b) (7)(F).

Breakout Tank Worst Case Discharge (b) (7)(F)

Description

This size discharge would most likely occur due to a natural disaster or catastrophic event. Examples may include, but not be limited to:

- Tank fire
- Catastrophic tank shell failure

The type of material that could be discharged is Crude Oil.

Volume

A worst case discharge scenario involving breakout tankage uses the single largest volume tank in the response zone, adjusted for the size of the secondary containment system. Applicable adjustment(s) for the largest tank at the Terminal, including secondary containment include:

Spill Prevention Measures	Percent Reduction Allowed
Secondary containment capacity greater than 100% capacity of tank and designed according to NFPA 30.	50%
Built/repaired according to API STD 620/650/653	10%
Overfill protection standards according to API RP 2350	5%
Testing/cathodic protection according to API STD 650/651/653	5%

(b) (7)(F)

RESPONSE CAPABILITY SCENARIOS

WEST TEXAS / RED RIVER CRUDE RESPONSE ZONE (Cont'd)

Pipeline Worst Case Discharge = (b) (7)(F)

Description

The pipeline-based worst case discharge is projected as a scenario involving a catastrophic rupture of a section of the 16-inch crude pipeline that runs between Ryan Junction and the Red River.

Volume

This scenario would result in a release of (b) (7)(F) crude oil. The pipeline worst case discharge is calculated as:

Worst Case Discharge = (Rate of Flow x Maximum Time to Detect the Spill and Shut Down the Pipeline) + Drainage Volume

(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 level requirements for non-high volume areas (Level 1 = 12 hours; Level 2 = 36 hours; Level 3 = 60 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 2.6 and Appendix A.
- Telephone references are provided in Figures 2.2 and 2.5.

WEST TEXAS / RED RIVER CRUDE DISTRICT RESPONSE ZONE

Response Planning Volume Calculations

Location Data			
Location Type			Nearshore/Inland
DOT - Area Type			Non-High Volume
WCD Product Type			Crude Oil
Product Group			3
Capacity of the Largest Single Tank (bbl)			(b) (7)
Discharge Volumes/Calculations			
Average Most Probable or Small Discharge (bbl)			50
Maximum Most Probable or Medium Discharge (bbl)			857
Worst Case Discharge - Based on EPA criteria (bbl)			(b) (7)
EPA WCD Calculation: 100% * Capacity of the Largest Single Tank			
Selected Calculation Factors (Based on EPA Tables)			
Removal Capacity Planning Volume - Percent Natural Dissipation			30%
Removal Capacity Planning Volume - Percent Recovered Floating Oil			50%
Removal Capacity Planning Volume - Percent Oil Onshore			50%
Emulsification Factor			2.0
Level 1 - On Water Oil Recovery Resource Mobilization Factor			15%
Level 2 - On Water Oil Recovery Resource Mobilization Factor			25%
Level 3 - On Water Oil Recovery Resource Mobilization Factor			40%
Response Planning Volume Calculation			
On-Water Recovery Volume (bbl)			27,000
Shoreline Recovery Volume (bbl)			27,000
Shoreline Cleanup Volume (bbl)			54,000
	Level 1	Level 2	Level 3
On-Water Recovery Cpcty (bbl/day)	27,000	45,000	72,000
Shallow Water Resp Cpblty (bbl/day)	5,400	9,000	14,400
Storage Capacity (bbl/day)	54,000	90,000	144,000
On-Water Response Caps (bbl/day)	12,500	25,000	50,000
Additional Response Req'd (bbl/day)	14,500	20,000	22,000
Response Time (hrs)	12	36	60

APPENDIX C

EMERGENCY PREPLANNING

EMERGENCY PREPLANNING

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

C.1 LEAK DETECTION SYSTEMS

(b) (7)(F)

[redacted]

C.1.B Aerial Patrols

Aerial patrols of pipeline rights-of-ways are typically performed periodically as described in the O&M Manual. The pilot and/or observer shall notify Company personnel of all problems or potential problems observed on each line section flown.

C.1.C Continuing Secondary Surveillance

Continuing secondary surveillance is accomplished by operations and support departments, both Field and Corporate, through continuous review of all pipeline reports and records as described in the O&M Manual and initiating immediate action to prevent spills and correct hazardous conditions.

C.1.D On-Scene Observations

On-scene observation is accomplished utilizing regulatory-mandated and Company-implemented inspections, drills and surveys by Company operations and maintenance personnel. Valve inspections, pressure control device inspections and navigable waterway inspections are performed in accordance with requirements

established to comply with federal and state regulations.

C.2 DISCHARGE PREVENTION SYSTEMS

Pipeline pump stations and breakout tank farms are designed in manner to maximize the containment of leaks on-site and deter the migration of leaks off-site. Discharge prevention is accomplished through the following measures:

- Breakout storage tanks are provided secondary containment (berms) large enough to withhold the capacity, of the tank or capacity of the largest single tank located in the berm, plus freeboard for precipitation.

(b) (7)(F) [redacted]

- Various retention ponds, drainage ditches, swales, etc. are used to help contain leaks and prevent off-site migration.
- Pipelines, terminals, tanks and related structures have grounding systems to reduce the possibility of accidental ignition due to lightning.
- Facilities have "Emergency Shut Down" devices located wherever possible outside any potential "Hot Zone".
- Discharge prevention is also accomplished through the use of general housekeeping procedures and leak inspection systems (see Appendix C.3).

C.3 LEAK INSPECTION SYSTEMS

Visual observations of facilities and pipelines are performed regularly during normal routine operations. When exposed portions of the pipeline are identified, visual observations are made to locate signs of corrosion leaks, coating loss or excessive wear. In cases of small leaks, pipeline clamps are used for temporary repair until a more permanent repair can be made. Records on all pipeline failures are kept maintained and are available to DOT/ PHMSA upon request.

Based on sound engineering judgment the pipeline is replaced or repaired as necessary.

C.2.A Visual Inspection

The pipeline and adjacent areas are visually inspected for leaking oil by either aerial observation or ground patrol with special attention given to locations where the pipeline crosses highways, railroad tracks, and bodies of water. These inspections are conducted periodically.

Breakout tanks and associated berms and aboveground piping are regularly inspected by Company personnel for signs of potential leakage as described in the O&M Manual.

C.2.B Integrity Testing

Integrity testing is performed periodically on breakout tanks and pipelines as

described in the O&M Manual.

C.2.C Cathodic Protection

Pipelines are coated and have cathodic protection. These pipelines are subject to periodic cathodic protection inspections.

C.2.D External Corrosion Control

Whenever buried portions of the pipeline are exposed for any reason, the pipe will be examined for evidence of external corrosion, coating deterioration, and cathodic protection effectiveness. If corrosion is found, a detailed evaluation will be performed to determine the extent of corrosion. Exposed portions of the pipeline are painted and/or coated for corrosion protection. Additional details can be found in the O&M Manual.

C.2.E Valve Maintenance

Valves and overpressure devices are subject to regular inspections as described in the O&M Manual.

APPENDIX D

TRAINING AND DRILLS

D.1 RESPONSE TEAM TRAINING

The Company provides training related to discharge prevention, testing and response, including measures to repair pipeline ruptures and mitigate discharges. The Training Methods address oil discharges from the pipeline from several perspectives: human health and safety, rupture control and repair operations, pollution control, and overall (crisis) management of the emergency.

The competency of each training program is closely monitored by the Training Section through observation of and/or participation in actual training sessions.

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 operator 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 (Figure 1.3).
- The telephone number of the National Response Center 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 I - MSDS).
- The conditions that are 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 Pipeline 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.

D.1 RESPONSE TEAM TRAINING (Cont'd)

HAZWOPER (29 CFR 1910.120)

Federal and state regulations require that response team members maintain up-to-date HAZWOPER 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 HAZWOPER training requirements of 29 CFR 1910.120.

OSHA HAZWOPER 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
29CFR 1910.120(p)(7)(8) RCRA TSD Sites		
New Employees	24 hrs	8 hrs
Current Employees*	24 hrs	8 hrs

* Previous work experience and/or training certified as equivalent by employer.

Incident Command System

Response team members will receive ICS training and may also receive supplemental training in other related general topics.

Training Records

Training records for local team members will be maintained at the pipeline office according to Federal, state, and local government requirements (three (3) years for the U.S. Coast Guard and five (5) years for the U.S. Environmental Protection Agency and Department of Transportation), and as long as team members are assigned duties under this Plan for DOT/ PHMSA.

Training Records Maintenance

Emergency response training records are maintained at the Company's Houston Office in the EHS&T Training Group's records. Training records for response personnel will be maintained for as long as personnel have duties in this response plan.

D.1 RESPONSE TEAM TRAINING (Cont'd)

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 also tends to use 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 OSHA, 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

Local/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 (through the Field Environmental Representative) will conduct announced and unannounced 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 PREP Guidelines for full details).

TRIENNIAL CYCLE		
Total Number	**Frequency**	**Exercise Type/Description**
12	Quarterly	QI Notification Exercise
3	Annually	Equipment Deployment Exercise *(Facility-owned equipment)*
3	Annual	Response Team Tabletop Exercise
3	Annual	Equipment Deployment Exercise *(facilities with OSRO-owned equipment)*
3	3 per Triennial Cycle	Unannounced Exercise *(not a separate exercise)* 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 response plan components must be exercised at least once in the Cycle. 2) TGLO Regulated facilities shall contact TGLO during annual Tabletop Exercise.		

D.2 RESPONSE TEAM EXERCISES (Cont'd)

Quarterly QI Notification Exercise

- **Scope:** Exercise communication between pipeline personnel and the QI(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 QI 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 OSRO equipment)

- **Scope:** Demonstrate ability to deploy spill response equipment identified in the ICP.

  - May consist entirely of operator 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 one a year. If the same personnel and equipment respond to multiple zones, they need only exercise once per year. If different personnel and equipment response 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 a local team to a regional team.

D.2 RESPONSE TEAM EXERCISES (Cont'd)

Annual Response Team Tabletop Exercise (Cont'd)

- 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 emergency response team members should demonstrate adequate knowledge of their Response Plan and the ability to organize, communicate, coordinate, and respond in accordance with that plan.

- **General:** Maximum of 20 unannounced PHMSA 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 OPA 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.

D.2 RESPONSE TEAM EXERCISES (Cont'd)

Exercise Documentation

- All exercises should be documented and maintained at the Region 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 the Pipeline and Hazardous Materials Safety Administration of five (5) years for 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?

D.3 PURPOSE OF REVIEW AND EVALUATION (Cont'd)

Outline of Review (Cont'd)

- ***Notification***
  - Were proper procedures followed in notifying government agencies? Were notifications prompt?
  - Was management notified promptly?
  - Was management 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 corporate resources are available and have they been identified and used adequately?

D.3 PURPOSE OF REVIEW AND EVALUATION (Cont'd)

Outline of Review (Cont'd)

- ***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?

D.3 PURPOSE OF REVIEW AND EVALUATION (Cont'd)

Outline of Review (Cont'd)

- ***Response - Effectiveness (Cont'd)***
  - Was contaminated equipment disposed of 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 of?
  - 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?

D.3 PURPOSE OF REVIEW AND EVALUATION (Cont'd)

Outline of Review (Cont'd)

- ***Government Relations (Cont'd)***
  - Were government agencies adequately informed at all stages?
  - 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 Oceanographic 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

EVACUATION PLAN

E.1 EMERGENCY EVACUATION PROCEDURES

Minimizing employee and public exposure to hazardous substances is the highest priority activity at a pipeline emergency site. Often this must be done by notifying and/or evacuating employees and nearby residents (or assisting local officials with this activity) and/or by halting or diverting traffic on roads and railroads from the emergency area.

This section is a general procedure for response to a vapor cloud or other hazardous vapor release situation and is intended for use in conjunction with Fire Plans, Site Specific Plans, Site Safety & Health Plans, and other plans and procedures applicable to the work area.

In the event that a hazardous vapor situation is detected, evacuation of all people within the affected area may be the highest priority course of action depending on the circumstances. Large-scale evacuations may require the efforts of the entire Response Team and/or assistance from local emergency responders, again depending on site conditions. Phone numbers for local emergency responders are located in Section 2.0.

E.1.A Isolation of Potential Emergency Site

For all potential emergency situations, isolation of the area affected by employees and the general public will always be an immediate priority. Since each emergency is different, the size of the area to be isolated and the method of isolation will vary on a case by case basis.

In general, fenced pipeline installations such as tank farms, delivery terminals and pump stations can be isolated by controlling traffic at the installation's main gate. For situations on the pipeline right-of-way, the Response Team must quickly determine the size of the area potentially affected and work closely with local responders to make every effort to control all access to the area by road, rail or footpath.

In general, a potential emergency situation will be most easily isolated through the prompt enlistment of help from local responders (police, fire, etc.) to help control an area other than a fenced pipeline facility. Section 2.0 contains listings of how to contact these personnel.

E.1.B Pipeline Facility Evacuations

It is often difficult to determine when the quantity of vapors present constitute a hazard severe enough to warrant shutdown of operations and maintenance and the evacuation of the work site or pipeline, even when hazardous atmosphere detectors are in use.

Employees must ultimately use their own judgment based on the available information, in addition to previous experience and training, in making this decision. In all cases these judgments should be conservative, i.e., they should err on the side of safety and caution.

<u>The protection of human life must always take precedence over the protection of physical property or equipment.</u>

E.1 EMERGENCY EVACUATION PROCEDURES (Cont'd)

E.1.C Remote System Locations; Right-of-Way Locations

- (b) (7)(F) [redacted]

- Pipeline Control or the appropriate supervisor will notify the QI to start the response to the event. Dependent on the situation, the QI will send the appropriate personnel to the affected location to investigate. If an event is reported from the right-of-way, the QI will contact the appropriate pipeline operator who will be responsible for closing manual line block valves.

- Personnel responding to the affected location should always make an initial assessment of the site at a safe distance from the likely source point of the release. If the source point cannot be isolated without entering a vapor cloud or other hazardous situation, the investigating personnel should stay out of the hazardous area. A call for immediate assistance should be made to Pipeline Control and to the QI to begin notification of the appropriate members of the ERT, who are properly equipped to approach and isolate a release of this nature.

- The QI has responsibility for contacting the appropriate local officials for assistance in evacuating and isolating all persons from the affected area and controlling traffic and spectators if needed.

E.2 EVACUATIONS INVOLVING THE GENERAL PUBLIC

E.2.A Specific Procedure

- The Company's acting On-Scene Commander first assesses the incident and determines it is necessary to evacuate the public from the immediate affected area (local officials should be included in this decision making if time permits.

- Coordination of evacuation efforts is the responsibility of the On-Scene Commander, or the person assigned as the Liaison Officer.

- If the incident involves injured persons, refer to the appropriate Enterprise Emergency Response Plan.

- Local authorities such as the police, highway patrol and fire departments should be pressed into service assisting an evacuation, with the Company's On-Scene Commander or Liaison Officer acting as direct liaison to these officials.

E.2 EVACUATIONS INVOLVING THE GENERAL PUBLIC (Cont'd)

E.2.A Specific Procedure (Cont'd)

- All nearby occupied dwellings should then be visited and the inhabitants informed of the dangers as soon as possible. Evacuation instructions to residents must insist that all open flames including pilot lights and gas burners be extinguished if possible.

- Conduct evacuation on foot if necessary.

- Warn all evacuees against activities such as smoking, operating motor vehicles, using spark-producing appliances, etc. The Company should attempt to render whatever assistance is necessary to the evacuees.

- Keep the QI and/or Safety Officer informed of any evacuation efforts so they may pass along the latest information regarding such actions to other support personnel.

- In the interest of safety, the media and other members of the general public may need to be utilized to quickly inform people in the immediate area of an ongoing evacuation effort.

- Members of the press should be advised that electronic equipment such as camera lights and flashes can be potential sources of ignition when explosive vapors are present.

E.2.B Traffic Control

If an incident occurs near a road or railroad, local traffic may need to be halted or diverted from the immediate area. The assistance of local authorities should be solicited to enforce any necessary detours of local traffic until the hazardous situation can be stabilized. Railroads should be notified so they can halt rail traffic.

E.2.C Notification of Public Officials

The Company must be prepared to coordinate the Company's response to emergencies with public officials as appropriate. The QI or other appointee will interface with public officials on the appropriate seniority levels who are concerned about an emergency response in progress. The QI will meet directly with onsite incident commanders from other agencies in order to best coordinate response efforts. The Liaison Officer will act as Company liaison with various local emergency responders during the incident. The Environmental Situation Chief will act as liaison with federal and state-level environmental responders if necessary. The Safety Officer shall act as liaison with OSHA representatives if necessary.

APPENDIX F

DISPOSAL PLAN

F.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 **segregated** (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 Environmental Unit to manage waste disposal needs during an oil spill cleanup.

F.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).

Solid Wastes

A solid waste is defined as any discarded material provided that it is not specifically excluded under the regulations. These exclusions cover materials such as domestic sewage and mixtures of sewage discharged through a sewer system or industrial wastewater point source discharges.

A discarded material is any material which is abandoned (disposed of, burned or incinerated) or accumulated, stored or treated prior to being abandoned. A discarded material is also any material recycled or any material considered inherently wastelike. Recycled material is considered solid waste when used in a manner constituting disposal, placed on land or burned for energy recovery.

A solid waste may be considered a hazardous waste. A solid waste, as defined above, may be a hazardous waste if it is not excluded from regulation and is either a listed hazardous waste or exhibits the characteristics of a hazardous waste. A solid waste exhibits the characteristics of a hazardous waste if it exceeds the thresholds established in determining the following:

1) ignitability
2) corrosivity
3) reactivity
4) toxicity

F.2 WASTE CLASSIFICATION (Cont'd)

Solid Wastes (Cont'd)

A solid waste may also become a hazardous waste if it is mixed with a listed hazardous waste or, in the case of any other waste (including mixtures), when the waste exhibits any of the characteristics identified above.

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.

F.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 shall be taken to avoid or minimize direct contact with oily wastes. All personnel handling or coming into contact with oily wastes shall 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 shall 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 should 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.

F.3 WASTE HANDLING (Cont'd)

- 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.

Table F-1 provides a comparative evaluation of 16 types of transfer systems that could be available for transfer operations.

F.4 WASTE STORAGE

Interim storage of recovered oil, oily and non-oily waste would 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.

F.4 WASTE STORAGE (Cont'd)

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 Table F-2. 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 would be 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 boom.

Empty barges have four to six feet draft 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.
- Flooding.
- Surface water.
- Slope.
- Covered material.
- Capacity.
- Climatic factors.
- Land use.
- Toxic air emissions.
- Security.
- Access.
- Public contact.

F.4 WASTE STORAGE (Cont'd)

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 millimeters 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 would be removed and disposed of with the rest of the oily debris. Any surrounding soil which has become contaminated with oil would 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.

F.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 facility. 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 would consult with the federal and state On Scene Coordinator (OSC) 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 would be prepared by the Environmental Unit in the form of an Incident Disposal Plan which must be authorized by the U.S. Coast Guard and/or the EPA. An Incident Disposal Plan would 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.

F.5 WASTE DISPOSAL (Cont'd)

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 appropriate combinations of disposal methods are employed.

The different types of wastes generated during response operations would require different disposal methods. To facilitate the disposal of wastes, they should be separated by type for temporary storage, transport and disposal. Table F-3 lists some of the options that would be available to segregate oily wastes. The table also depicts methods that may 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 designated disposal specialist is responsible for ensuring that all waste materials be disposed of at an internally approved disposal site.

Incineration

This technique entails the complete destruction of the recovered oil by high temperature thermal oxidation reactions. 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 would 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 would not 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.

F.5 WASTE DISPOSAL (Cont'd)

As a general rule, *in situ* burning would be 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 would 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 would be disposed of only at Company-approved disposal facilities. The 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 disposal specialist prior to sending any waste to such a facility.

FIGURE F-1

COMPARATIVE EVALUATION OF OIL SPILL TRANSFER SYSTEMS

CHARACTERISTICS OF TRANSFER SYSTEMS	CENTRIFUGAL PUMP	LOBE PUMP	GEAR PUMP	INTERMESCHING 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 RATINGS: 5 = Best; 1 = Worst

KEY TO COMMENTS:

A. Normally require remote power sources, 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.

FIGURE F-2

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	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.

FIGURE F-3

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: ● 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	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, seaweed 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
Tar balls	Separation from sand by sieving	Incineration Direct disposal

APPENDIX G

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.

NOTICE: This report is required by 49 CFR Part 195. Failure to report can result in a civil penalty not to exceed $25,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed $500,000 as provided in 49 USC 60122

Form Approved
OMB No. 2137-0047

U.S. Department of Transportation
Pipeline and Hazardous Materials
Safety Administration

ACCIDENT REPORT – HAZARDOUS LIQUID PIPELINE SYSTEMS

Report Date _____

No. _____
(DOT Use Only)

INSTRUCTIONS

Important: *Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the Office Of Pipeline Safety Web Page at* ***http://ops.dot.gov****.*

PART A – GENERAL REPORT INFORMATION

Check: ☐ **Original Report** ☐ **Supplemental Report** ☐ **Final Report**

1. a. Operator's OPS 5-digit Identification Number (if known) /___/___/___/___/___/
   b. If Operator does not own the pipeline, enter Owner's OPS 5-digit Identification Number (if known) /___/___/___/___/___/
   c. Name of Operator _____
   d. Operator street address _____
   e. Operator address _____
   City, County, State and Zip Code

IMPORTANT: IF THE SPILL IS SMALL, THAT IS, THE AMOUNT IS AT LEAST 5 GALLONS BUT IS LESS THAN 5 BARRELS, COMPLETE THIS PAGE ONLY, UNLESS THE SPILL IS TO WATER AS DESCRIBED IN 49 CFR §195.52(A)(4) OR IS OTHERWISE REPORTABLE UNDER §195.50 AS REVISED IN CY 2001.

2. Time and date of the accident
   /___/___/___/___/ hr. /___/___/ month /___/___/ day /___/___/ year

3. Location of accident
   (If offshore, do not complete a through d. See Part C.1)
   a. Latitude: _____ Longitude: _____
   (if not available, see instructions for how to provide specific location)
   b. _____ City, and County or Parish
   c. _____ State and Zip Code
   d. Mile post/valve station O or survey station no. O (whichever gives more accurate location)
   _____

4. Telephone report
   /___/___/___/___/___/___/___/ NRC Report Number /___/___/ month /___/___/ day /___/___/ year

5. Losses *(Estimated)*

Public/Community Losses reimbursed by operator:

Public/private property damage	$_____
Cost of emergency response phase	$_____
Cost of environmental remedia ion	$_____
Other Costs	$_____
(describe) _____	

Operator Losses:

Value of product lost	$_____
Value of operator property damage	$_____
Other Costs	$_____
(describe) _____	
Total Costs	$_____

6. Commodity Spilled OYes O No
(If Yes, complete Parts a through c where applicable)

a. Name of commodity spilled _____

b. Classification of commodity spilled:
- O HVLs /other flammable or toxic fluid which is a gas at ambient condi ions
- O CO_2 or other non-flammable, non-toxic fluid which is a gas at ambient condi ions
- O Gasoline, diesel, fuel oil or other petroleum product which is a liquid at ambient conditions
- O Crude oil

a. Estimated amount of commodity involved :
- O **Barrels**
- O **Gallons (check only if spill is less than one barrel)**

Amounts:
Spilled : _____
Recovered: _____

CAUSES FOR SMALL SPILLS ONLY (5 gallons to under 5 barrels) : ***(For large spills [5 barrels or greater] see Part H)***

O **Corrosion** O **Natural Forces** O **Excavation Damage** O **Other Outside Force Damage**
O **Material and/or Weld Failures** O **Equipment** O **Incorrect Operation** O **Other**

PART B – PREPARER AND AUTHORIZED SIGNATURE

_____ (type or print) Preparer's Name and Title
_____ Area Code and Telephone Number
_____ Preparer's E-mail Address
_____ Area Code and Facsimile Number
_____ Authorized Signature _____ (type or print) Name and Title _____ Date _____ Area Code and Telephone Number

Form PHMSA F 7000-1 (01-2001)

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PART C – ORIGIN OF THE ACCIDENT (Check all that apply)

1. Additional location information
   a. Line segment name or ID _____
   b. Accident on Federal land other than Outer Continental Shelf O Yes O No
   c. Is pipeline interstate? O Yes O No

Offshore: O Yes O No *(completed if offshore)*
d. Area _____ Block # _____
State / / / or Outer Continental Shelf ☐

2. Location of system involved (*check all that apply*)
   ☐ Operator's Property
   ☐ Pipeline Right of Way
   ☐ High Consequence Area (HCA)?
   Describe HCA_____

3. Part of system involved in accident
   O Above Ground Storage Tank
   O Cavern or other below ground storage facility
   O Pump/meter station; terminal/tank farm piping and equipment, including sumps
   O O her *Specify:* _____
   O Onshore **pipeline**, including valve sites
   O Offshore **pipeline**, including platforms

*If failure occurred on **Pipeline**, complete items a - g:*

4. Failure occurred on
   O Body of Pipe O Pipe Seam O Scraper Trap
   O Pump O Sump O Joint
   O Component O Valve O Metering Facility
   O Repair Sleeve O Welded Fitting O Bolted Fitting
   O Girth Weld
   Other *(specify)* _____

Year the component that failed was installed: / / / / /
5. Maximum operating pressure *(MOP)*
   a. Estimated pressure at point and ime of accident: _____ *PSIG*
   b. MOP at time of accident: _____*PSIG*
   c. Did an over pressurization occur relating to the accident? OYes O No

a. Type of leak or rupture
   OLeak: O Pinhole O Connection Failure *(complete sec. H5)*
   O Puncture, diameter *(inches)* _____
   ORupture: O Circumferen ial – Separation
   O Longitudinal – Tear/Crack, length *(inches)* _____
   Propagation Leng h, total, both sides *(feet)* _____
   ON/A
   OOther _____

b. Type of block valve used for isola ion of immediate sec ion:
   Upstream: ☐ Manual ☐ Automatic ☐ Remote Control ☐ Check Valve
   Downstream: ☐ Manual ☐ Automatic ☐ Remote Control ☐ Check Valve

c. Length of segment isolated _____ ft
d. Distance between valves _____ ft
e. Is segment configured for internal inspec ion tools? OYes O No
f. Had there been an in-line inspection device run at the point of failure? O Yes O No O Don't Know
   O Not Possible due to physical constraints in the system
g. If *Yes*, type of device run (*check all that apply*)
   ☐ High Resolution Magnetic Flux tool Year run: _____
   ☐ Low Resolution Magnetic Flux tool Year run: _____
   ☐ UT tool Year run: _____
   ☐ Geometry tool Year run: _____
   ☐ Caliper tool Year run: _____
   ☐ Crack tool Year run: _____
   ☐ Hard Spot tool Year run: _____
   ☐ Other tool Year run: _____

PART D – MATERIAL SPECIFICATION

1. Nominal pipe size *(NPS)* / / / / / in.
2. Wall thickness / / / / / in.
3. Specification _____ SMYS / / / / / / /
4. Seam type _____
5. Valve type _____
6. Manufactured by _____ in year / / / / /

PART E – ENVIRONMENT

1. Area of accident
   O Under pavement
   O Underground
   O Inside/under building
   O In open ditch
   O Above ground
   O Under water
   O Other _____

2. Dep h of cover: _____ inches

PART F – CONSEQUENCES

1. **Consequences** ***(check and complete all that apply)***

a.	Fatalities	Injuries
Number of operator employees:		_____
Contractor employees working for operator:		_____
General public:		_____
Totals:		_____

b. Was pipeline/segment shutdown due to leak? OYes O No
If Yes, how long? _____ days _____ hours _____ minutes

c. Product ignited OYes O No d. Explosion OYes O No
e. ☐ Evacuation *(general public only)* / / / / / people
Reason for Evacuation:
O Precautionary by company
O Evacuation required or initiated by public official

f. Elapsed time until area was made safe:
/ / / hr. / / / min.

2. **Environmental Impact**
   a. Wildlife Impact: Fish/aquatic O Yes O No; Birds O Yes O No; Terrestrial O Yes O No
   b. Soil Contamination O Yes O No
   If Yes, estimated number of cubic yards: _____
   c. Long term impact assessment performed: O Yes O No
   d. Anticipated remediation O Yes O No
   If Yes, check all that apply: ☐ Surface water ☐ Groundwater ☐ Soil ☐ Vegetation ☐ Wildlife

e. Water Contamination: O Yes O No (*If Yes, provide the following*)
   Amount in water _____ barrels

Ocean/Seawater	O No	O Yes
Surface	O No	O Yes
Groundwater	O No	O Yes
Drinking water	O No	O Yes (*If Yes, check below*)

O Private well O Public water intake

PART G – LEAK DETECTION INFORMATION

1. Computer based leak detection capability in place? O Yes O No

2. Was the release initially detected by? (check one):
O CPM/SCADA-based system with leak detection
O Static shut-in test or other pressure or leak test
O Local operating personnel, procedures or equipment
O Remote operating personnel, including controllers
O Air patrol or ground surveillance
O A third party O Other (specify) _____

3. Estimated leak duration days ____ hours ____

PART H – APPARENT CAUSE

Important: *There are 25 numbered causes in this Part H. Check the box corresponding to the primary cause of the accident. Check one circle in each of the supplemental categories corresponding to the cause you indicate. See the instructions for guidance.*

H1 – CORROSION

1. ☐ External Corrosion

2. ☐ Internal Corrosion

(Complete items a – e where applicable.)

a. Pipe Coating
O Bare
O Coated

b. Visual Examination
O Localized Pitting
O General Corrosion
O Other _____

c. Cause of Corrosion
O Galvanic O Atmospheric
O Stray Current O Microbiological
O Cathodic Protection Disrupted
O Stress Corrosion Cracking
O Selective Seam Corrosion
O Other _____

d. Was corroded part of pipeline considered to be under cathodic protection prior to discovering accident?
O No O Yes, Year Protection Started: /___/___/___/___/

e. Was pipe previously damaged in the area of corrosion?
O No O Yes ⇒ Estimated time prior to accident: /___/___/ *years* /___/___/ *months* *Unknown* ☐

H2 – NATURAL FORCES

3. ☐ Earth Movement ⇒ O Earthquake O Subsidence O Landslide O Other _____
4. ☐ Lightning
5. ☐ Heavy Rains/Floods ⇒ O Washouts O Flotation O Mudslide O Scouring O Other _____
6. ☐ Temperature ⇒ O Thermal stress O Frost heave O Frozen components O Other _____
7. ☐ High Winds

H3 – EXCAVATION DAMAGE

8. ☐ Operator Excavation Damage (including their contractors/Not Third Party)
9. ☐ Third Party *(complete a-f)*

a. Excavator group
O General Public O Government O Excavator other than Operator/subcontractor

b. Type: O Road Work O Pipeline O Water O Electric O Sewer O Phone/Cable
O Landowner-not farming related O Farming O Railroad
O Other liquid or gas transmission pipeline operator or their contractor
O Nautical Operations O Other _____

c. Excavation was: O Open Trench O Sub-strata (boring, directional drilling, etc…)

d. Excavation was an ongoing activity (Month or longer) O Yes O No If Yes, Date of last contact /___/___/___/

e. Did operator get prior notification of excavation activity?
O Yes; Date received: /___/___/ mo. /___/___/ day /___/___/___/___/ yr. O No
Notification received from: O One Call System O Excavator O Contractor O Landowner

f. Was pipeline marked as result of location request for excavation? O No O Yes *(If Yes, check applicable items i - iv)*
i. Temporary markings: O Flags O Stakes O Paint
ii. Permanent markings: O
iii. Marks were (check one) : O Accurate O Not Accurate
iv. Were marks made within required time? O Yes O No

H4 – OTHER OUTSIDE FORCE DAMAGE

10. ☐ Fire/Explosion as primary cause of failure ⇒ Fire/Explosion cause: O Man made O Natural
11. ☐ Car, truck or other vehicle not relating to excavation activity damaging pipe
12. ☐ Rupture of Previously Damaged Pipe
13. ☐ Vandalism

H5 – MATERIAL AND/OR WELD FAILURES

Material

14. ☐ Body of Pipe	⇒	O Dent	O Gouge	O Bend	O Arc Burn	O Other _____
15. ☐ Component	⇒	O Valve	O Fitting	O Vessel	O Extruded Outlet	O Other _____
16. ☐ Joint	⇒	O Gasket	O O-Ring	O Threads		O Other _____

Weld

17. ☐ Butt	⇒	O Pipe	O Fabrication			O Other _____
18. ☐ Fillet	⇒	O Branch	O Hot Tap	O Fitting	O Repair Sleeve	O Other _____
19. ☐ Pipe Seam	⇒	O LF ERW	O DSAW	O Seamless	O Flash Weld	
		O HF ERW	O SAW	O Spiral		O Other _____

*Complete a-g if you indicate **any** cause in part H5.*

a. Type of failure:
O Construction Defect ⇒ O Poor Workmanship O Procedure not followed O Poor Construction Procedures
O Material Defect

b. Was failure due to pipe damage sustained in transportation to the construction or fabrication site? O Yes O No

c. Was part which leaked pressure tested before accident occurred? O Yes, *complete d-g* O No

d. Date of test: /__/__/__/__/ yr. /__/__/ mo. /__/__/ day

e. Test medium: O Water O Inert Gas O Other _____

f. Time held at test pressure: /__/__/ hr.

g. Estimated test pressure at point of accident: _____ *PSIG*

H6 – EQUIPMENT

20. ☐ Malfunction of Control/Relief Equipment	⇒	O Control valve	O Instrumentation	O SCADA	O Communications	
		O Block valve	O Relief valve	O Power failure	O Other _____	
21. ☐ Threads Stripped, Broken Pipe Coupling	⇒	O Nipples	O Valve Threads	O Dresser Couplings	O Other _____	
22. ☐ Seal Failure	⇒	O Gasket	O O-Ring	O Seal/Pump Packing	O Other _____	

H7 – INCORRECT OPERATION

23. ☐ Incorrect Operation
a. Type: O Inadequate Procedures O Inadequate Safety Practices O Failure to Follow Procedures
O Other _____

b. Number of employees involved who failed a post-accident test: drug test: /__/__/__/__/ alcohol test /__/__/__/__/

H8 – OTHER

24. ☐ Miscellaneous, *describe:* _____

25. ☐ Unknown
O Investigation Complete O Still Under Investigation *(submit a supplemental report when investigation is complete)*

PART I – NARRATIVE DESCRIPTION OF FACTORS CONTRIBUTING TO THE EVENT *(Attach additional sheets as necessary)*

Form PHMSA F 7000-1 (01-2001) *Page 4 of 4*

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RAILROAD COMMISSION OF TEXAS
OIL AND GAS DIVISION

Form H-8
(Eff. 6/4/70)

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	Check appropriate block(s): ☐ Producer ☐ Transporter ☐ Other _____	4. County
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 ☐ Crude Oil ☐ Gas Well Liquid ☐ 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 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 _____ Zip Code _____ Telephone Area Code _____ Number _____

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

Clear Form

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR ☐ Initial Report ☐ Final Report

Name of Company	Contact
Address	Telephone No.
Facility Name	Facility Type

Surface Owner	Mineral Owner	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County

Latitude_____ Longitude_____

NATURE OF RELEASE

Type of Release	Volume of Release	Volume Recovered
Source of Release	Date and Hour of Occurrence	Date and Hour of Discovery
Was Immediate Notice Given? ☐ Yes ☐ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☐ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Describe Area Affected and Cleanup Action Taken.*

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION		
Printed Name:	Approved by District Supervisor:		
Title:	Approval Date:	Expiration Date:	
E-mail Address:	Conditions of Approval:		Attached ☐
Date: Phone:			

* Attach Additional Sheets If Necessary

APPENDIX H

STATE REQUIREMENTS

Page

TEXAS GENERAL LAND OFFICE (TGLO) REQUIREMENTS

TGLO Regulated Facility Diagrams

FIGURE H.1

TEXAS CITY DOCK AND TANK FARM

FACILITY INFORMATION

GENERAL INFORMATION	
Facility Name:	Texas City Dock and Tank Farm
Discharge Prevention and Response Certificate No:	20170
Addresses:	***Physical Address*** Hwy 3 & Loop 197 Texas City, TX 77592 ***Mailing Address*** P.O. Box 551 Texas City, TX 77592
(b) (7)(F) [redacted]	
Mainline Number:	(409) 949-4555 Facility (800) 331-3381 Seaway Pipeline Emergencies
Contact Person:	Terry Hutson- Area Manager
Primary Activity:	The Facility is a marine dock terminal and pipeline breakout storage facility used for intermediate storage of crude oil prior to reinjection back into the pipeline system for transportation further down the pipeline. The Facility receives and delivers Crude Oil from numerous interstate DOT-regulated pipeline systems (2-36" and 1-42" lines).
Manned Facility (Y/N):	Yes
Storage Tanks:	Capacities of each storage tank is maintained on the TGLO Online Facility Database which is updated annually. Facility diagram is provided in this appendix.
Average Daily Throughput:	Dock – 356,000 bpd, Terminal – 280,000 bpd
Facility WCD:	See Appendix B, South Texas/Seaway, Breakout Tank WCD.
Largest oil-handling vessel which docks at Facility:	(b) (7)(F) [redacted]
Material Safety Data Sheets (MSDS):	MSDS's for common products transported by the pipeline are maintained in Appendix I. Additional MSDS's are maintained at the Facility.

FIGURE H.2

FREEPORT DOCK

FACILITY INFORMATION

GENERAL INFORMATION	
Facility Name:	Freeport Dock
Discharge Prevention and Response Certificate No:	20171
Addresses:	***Physical Address*** CR 731 off Quintana Rd. Freeport, TX 77542 ***Mailing Address*** P.O. Box 2486 Freeport, TX 77542
(b) (7)(F) [redacted]	
Mainline Number:	(979) 239-1282 Facility (800) 331-3381 Seaway Pipeline Emergencies
Contact Person:	Jimmy Nealy - Area Manager
Primary Activity:	The Facility is a marine dock terminal used to unload crude oil from marine vessels for transporation down the pipeline system. The Facility delivers Crude Oil to numerous interstate DOT-regulated pipeline systems (2-30" and 1-42" lines).
Manned Facility (Y/N):	Yes.
Storage Tanks:	Storage tanks are not present at this facility.
Average Daily Throughput:	300,000 bpd
Facility WCD:	(b) (7)(F) [redacted]
Largest oil-handling vessel which docks at Facility:	(b) (7)(F) [redacted]
Material Safety Data Sheets (MSDS):	MSDS's for common products transported by the pipeline are maintained in Appendix I. Additional MSDS's are maintained at the Facility.

FIGURE H.3

JONES CREEK TANK FARM

FACILITY INFORMATION

GENERAL INFORMATION	
Facility Name:	Jones Creek Tank Farm
Discharge Prevention and Response Certificate No:	20282
Addresses:	***Physical / Mailing Address*** 6225 Highway 36 Jones Creek, TX 77541
(b) (7)(F) [redacted]	
Mainline Number:	(979) 239-1397 Facility (800) 331-3381 Seaway Pipeline Emergencies
Contact Person:	Jimmy Nealy - Area Manager
Primary Activity:	The Facility is a pipeline breakout storage facility used for intermediate storage of crude oil prior to reinjection back into the pipeline system for transportation further down the pipeline. The Facility receives and delivers products (Group 1 non-persistent oil) from numerous interstate DOT-regulated pipeline systems (3-30", 1-42" lines).
Manned Facility (Y/N):	Yes
Storage Tanks:	Capacities of each storage tank is maintained on the TGLO Online Facility Database which is updated annually. Facility diagram is provided in this appendix.
Average Daily Throughput:	300,000 bpd
Facility WCD:	(b) (7)(F) [redacted]
Largest oil-handling vessel which docks at Facility:	NA
Material Safety Data Sheets (MSDS):	MSDS's for common products transported by the pipeline are maintained in Appendix I. Additional MSDS's are maintained at the Facility.

FIGURE H.4

GALENA PARK STATION

FACILITY INFORMATION

GENERAL INFORMATION		
Facility Name:	Galena Park Station	
Discharge Prevention and Response Certificate No:	20172 **Note: This Certification applies to the pipelines leading to the station that cross the Houston Ship Channel. The Galena Park Station is not in TGLO Jurisdiction and thus not covered under this Certification.*	
Addresses:	***Physical Address*** Varies	***Mailing Address*** P.O. Box 551 Texas City, TX 77592
Facility Lat./Long.:	Varies	
Mainline Number:	(800) 331-3381 Seaway Pipeline Emergencies	
Contact Person:	Terry Hutson - Area Manager	
Primary Activity:	DOT-regulated pipeline system transporting Crude Oil consisting of 1-20" (S10) and 1-30" (S8) pipeline crossing the Houston Ship Channel. Additional line details are maintained on the TGLO Online Facility Database which is updated annually. Layouts of the lines are provided in Section 6.	
Manned Facility (Y/N):	No, TGLO and NRC Emergency Numbers are displayed.	
Storage Tanks:	NA	
Average Daily Throughput:	Varies by line.	
Facility WCD:	See Appendix B, Pipeline WCD.	
Largest oil-handling vessel which docks at Facility:	NA	
Material Safety Data Sheets (MSDS):	MSDS's for common products transported by the pipeline are maintained in Appendix I.	

FIGURE H.5

CRUDE PIPELINES

FACILITY INFORMATION

GENERAL INFORMATION		
Facility Name:	Crude Pipelines	
Discharge Prevention and Response Certificate No:	20284	
Addresses:	***Physical Address*** Varies	***Mailing Address*** P.O Box 2486 Freeport, TX 77542
Facility Lat./Long.:	Varies	
Mainline Number:	(800) 220-1058 Crude Pipeline Control Center (800) 331-3381 Seaway Pipeline Emergencies	
Contact Person:	Jimmy Nealy - Area Manager	
Primary Activity:	DOT-regulated pipeline system transporting Crude Oil consisting of 1-36" (S7) pipeline. Additional line details are maintained on the TGLO Online Facility Database which is updated annually. Layout of this line is provided in Section 6.	
Manned Facility (Y/N):	No, TGLO and NRC Emergency Numbers are displayed.	
Storage Tanks:	NA	
Average Daily Throughput:	Varies.	
Facility WCD:	See Appendix B, Pipeline WCD.	
Largest oil-handling vessel which docks at Facility:	NA	
Material Safety Data Sheets (MSDS):	MSDS's for common products transported by the pipeline are maintained in Appendix I.	

FIGURE H.6

SEALY TO VANDERBILT PIPELINE

FACILITY INFORMATION

GENERAL INFORMATION		
Facility Name:	Sealy to Vanderbilt – C11	
Discharge Prevention and Response Certificate No:	50179	
Addresses:	***Physical Address*** Varies	***Mailing Address*** P.O Box 2486 Freeport, TX 77542
Facility Lat./Long.:	Varies	
Mainline Number:	(800) 220-1058 Crude Pipeline Control Center	
Contact Person:	Jimmy Nealy - Area Manager	
Primary Activity:	DOT-regulated pipeline system transporting Crude Oil consisting of 1-8" (C11) pipeline which crosses the Lavaca River in Jackson County. Additional line details are maintained on the TGLO Online Facility Database which is updated annually. Layout of this line is provided in Section 6.	
Manned Facility (Y/N):	No, TGLO and NRC Emergency Numbers are displayed.	
Storage Tanks:	NA	
Average Daily Throughput:	Varies.	
Facility WCD:	See Appendix B, Pipeline WCD.	
Largest oil-handling vessel which docks at Facility:	NA	
Material Safety Data Sheets (MSDS):	MSDS's for common products transported by the pipeline are maintained in Appendix I.	

APPENDIX I

MATERIAL SAFETY DATA SHEETS (MSDS)

- MSDS for Crude Oil, Sweet
- MSDS for Crude Oil, Sour

ConocoPhillips

MATERIAL SAFETY DATA SHEET

Crude Oil, Sweet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Crude Oil, Sweet

Product Code: Multiple

Synonyms: Crude Oils, Desalted, Sweet
Earth Oil
Field Crude
Mahogany/Agate Crude
Petroleum Crude
Petroleum Oil
Rock Oil
Separator Crude
Sweet Crude

Chemical Family: Petroleum Hydrocarbon

Responsible Party: ConocoPhillips
P.O. Box 2197
Houston, TX
77252

For Additional MSDSs 800-762-0942

Technical Information: 918-661-9476

EMERGENCY OVERVIEW

24 Hour Emergency Telephone Numbers:
Spill, Leak, Fire or Accident
Call CHEMTREC
North America: (800)424-9300
Others: (703)527-3887 (collect)

California Poison Control System: (800) 356-3129

Health Hazards/Precautionary Measures: May contain or liberate poisonous hydrogen sulfide gas. Harmful if inhaled. Skin cancer hazard. Aspiration hazard if swallowed. Can enter lungs and cause damage. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Do not taste or swallow. Wash thoroughly after handling.

Physical Hazards/Precautionary Measures: Flammable liquid and vapor. Keep away from heat, sparks, flames, static electricity or other sources of ignition.

Appearance: Amber to black

Physical form: Oily liquid

Odor: Pungent hydrocarbon - sulfurous odor possible

NFPA Hazard Class:

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Health:       2 (Moderate)
Flammability: 3 (High)
Reactivity:   0 (Least)
```

HMIS Hazard Class

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Health:           2 (Moderate) *(Chronic)
Flammability:     3 (High)
Physical Hazard:  0 (Least)
```

*Indicates possible chronic health effects.

2. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS	% WEIGHT	EXPOSURE GUIDELINE		
		Limits	Agency	Type
Crude Oil (Petroleum) CAS# 8002-05-9	100	(See: Oil Mist, If Generated)		
Ethyl Benzene CAS# 100-41-4	<2	100 ppm	ACGIH	TWA
		125 ppm	ACGIH	STEL
		100 ppm	OSHA	TWA
		800 ppm	NIOSH	IDLH
Benzene CAS# 71-43-2	<1	0.5 ppm	ACGIH	TWA-SKIN
		2.5 ppm	ACGIH	STEL-SKIN
		1 ppm	OSHA	TWA
		5 ppm	OSHA	STEL
		500 ppm	NIOSH	IDLH
Hydrogen Sulfide CAS# 7783-06-4	Variable (<1)	10 ppm	ACGIH	TWA
		15 ppm	ACGIH	STEL
		20 ppm	OSHA	CEIL
		100 ppm	NIOSH	IDLH
		50 ppm	OSHA	10 min. peak; once per 8-hr shift

REFERENCE	EXPOSURE GUIDELINE		
	Limits	Agency	Type
Oil Mist, If Generated CAS# None	5 mg/m3	ACGIH	TWA
	10 mg/m3	ACGIH	STEL
	5 mg/m3	OSHA	TWA
	2500 mg/m3	NIOSH	IDLH
	5 mg/m3	NOHSC	TWA

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

1%=10,000 PPM.

Contains benzene. If exposure concentrations exceed the 0.5 ppm action level, OSHA requirements for personal protective equipment, exposure monitoring, and training may apply (29CFR1910.1028). Also see Section 4.

All components are listed on the TSCA inventory.

3. HAZARDS IDENTIFICATION

Potential Health Effects:

Eye: Contact may cause mild eye irritation including stinging, watering, and redness.

Skin: Contact may cause mild skin irritation including redness, and a burning sensation. Prolonged or repeated contact can worsen irritation by causing drying and cracking of the skin leading to dermatitis (inflammation). No harmful effects from skin absorption are expected.

Inhalation (Breathing): Low to moderate degree of toxicity by inhalation.

May contain or liberate hydrogen sulfide - see Other Comments section below.

Ingestion (Swallowing): Low degree of toxicity by ingestion. ASPIRATION HAZARD - This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Signs and Symptoms: Effects of overexposure may include irritation of the nose and throat, irritation of the digestive tract, nausea, vomiting, diarrhea and transient excitation followed by signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue).

Cancer: Skin cancer hazard (see Sections 11 and 15).

Target Organs: Inadequate data available for this material.

Developmental: Potential hazard to the fetus (see Section 11).

Other Comments: This material may contain or liberate hydrogen sulfide, a poisonous gas with the smell of rotten eggs. The smell disappears rapidly because of olfactory fatigue so odor may not be a reliable indicator of exposure. Effects of overexposure include irritation of the eyes, nose, throat and respiratory tract, blurred vision, photophobia (sensitivity to light), and pulmonary edema (fluid accumulation in the lungs). Severe exposures can result in nausea, vomiting, muscle weakness or cramps, headache, disorientation and other signs of nervous system depression, irregular heartbeats, convulsions, respiratory failure, and death.

This material may contain polynuclear aromatic hydrocarbons (PNAs) which have been known to produce a phototoxic reaction when contaminated skin is exposed to sunlight. The effect is similar in appearance to an exaggerated sunburn, and is temporary in duration if exposure is discontinued. Continued exposure to sunlight can result in more serious skin problems including pigmentation (discoloration), skin eruptions (pimples), and possible skin cancers.

Pre-Existing Medical Conditions: Conditions aggravated by exposure may include skin disorders and respiratory (asthma-like) disorders.

4. FIRST AID MEASURES

Eye: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: Wipe material from skin and remove contaminated shoes and clothing. Cleanse affected area(s) thoroughly by washing with mild soap and water and, if necessary, a waterless skin cleanser. If irritation or redness develops and persists, seek medical attention.

Inhalation (Breathing): If respiratory symptoms or other symptoms of exposure develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek immediate medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion (Swallowing): Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

Note To Physicians: This material may contain or liberate hydrogen sulfide. In high doses hydrogen sulfide may produce pulmonary edema and respiratory depression or paralysis. The first priority in treatment should be the establishment of adequate ventilation and the administration of 100% oxygen. If unresponsive to supportive care, nitrites (amyl nitrite by inhalation or sodium nitrite IV) may be an effective antidote, if delivered within the first few minutes of exposure.

Acute aspirations of large amounts of oil-laden material may produce a serious aspiration pneumonia. Patients who aspirate these oils should be followed for the development of long-term sequelae. Inhalation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities.

Federal regulations (29 CFR 1910.1028) specify medical surveillance programs for certain exposures to benzene above the action level or PEL (specified in Section (i)(1)(i) of the Standard). In addition, employees exposed in an emergency situation shall, as described in Section (i)(4)(i), provide a urine sample at the end of the shift for measurement of urine phenol.

5. FIRE FIGHTING MEASURES

Flammable Properties:
Flash Point: <100°F/<38°C
OSHA Flammability Class: Combustible liquid
LEL%: 1.1 / UEL%: 6.0
Autoignition Temperature: 590°F/310°C

Unusual Fire & Explosion Hazards: This material is flammable and can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Fire Fighting Instructions: Long-duration fires involving crude or residual fuel oil stored in tanks may result in a boilover. The contents of the tank may be expelled beyond the containment dikes or ditches. All personnel should be kept back a safe distance when a boilover is anticipated (reference NFPA 11 or API 2021).

For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk.

Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

Flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof equipment is recommended.

Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8).

Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Use foam on spills to minimize vapors (see Section 5). Spilled material may be absorbed into an appropriate absorbent material.

Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

7. HANDLING AND STORAGE

Handling: Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharge. The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-704 and/or API RP 2003 for specific bonding/grounding requirements.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2 and 8).

Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practices.

Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

Storage: Keep container(s) tightly closed. In a tank, barge, or other closed container, the vapor space above materials that contain hydrogen sulfide (H2S) may result in concentrations immediately dangerous to life or health (IDLH). Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional engineering controls may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

Personal Protective Equipment (PPE):

Respiratory: Wear a positive pressure air supplied respirator in situations where there may be potential for airborne exposure to H2S above exposure limits (see Section 2). If exposure concentation is unknown or if conditions immediately dangerous to life or health (IDLH) exist, use a NIOSH approved self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode.

A NIOSH certified air purifying respirator with an organic vapor cartridge may be used under conditions where H2S is not detected, and airborne concentrations of hydrocarbons are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a NIOSH approved self-contained breathing apparatus (SCBA) or equivalent operated in pressure demand or other positive pressure mode if there is a potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Skin: The use of gloves impervious to the specific material handled is advised to prevent skin contact and possible irritation (see manufacturers literature for information on

permeability).

Eye/Face: Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

Other Protective Equipment: A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

Suggestions for the use of specific protective materials are based on readily available published data. Users should check with specific manufacturers to confirm the performance of their products.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).
Appearance: Amber to black
Physical State: Oily liquid
Odor: Pungent hydrocarbon - sulfurous odor possible
pH: Not applicable
Vapor Pressure (mm Hg): 0.6 - 10 lbs. (Reid)
Vapor Density (air=1): >1
Boiling Point/Range: 0 to 1000°F / -17 to 538°C
Freezing/Melting Point: No Data
Solubility in Water: Neglibible
Specific Gravity: 0.7-1.03 @ 60°F
Percent Volatile: >50%
Evaporation Rate (nBuAc=1): >1
Viscosity: Varies
Bulk Density: 7.17 lbs/gal
Flash Point: <100°F / <38°C
Flammable/Explosive Limits (%): LEL: 1.1 / UEL: 6.0

10. STABILITY AND REACTIVITY

Stability: Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Flammable liquid and vapor. Vapor can cause flash fire.

Conditions To Avoid: Avoid all possible sources of ignition (see Sections 5 and 7).

Materials to Avoid (Incompatible Materials): Avoid contact with nitric acid and strong oxidizing agents.

Hazardous Decomposition Products: Combustion can yield carbon, nitrogen and sulfur oxides, other organic compounds and possibly hydrogen sulfide.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Crude Oil (Petroleum) (CAS# 8002-05-9)

Carcinogenicity: Chronic application of crude oil to mouse skin resulted in an increased incidence of skin tumors. IARC concluded in its Crude Oil Monograph that there is limited evidence of carcinogenicity in animals, and that crude oil is not classifiable as to its carcinogenicity in humans (Group 3). It has not been listed as a carcinogen by NTP or OSHA.

Developmental: Dermal exposure to crude oil during pregnancy resulted in limited evidence of developmental toxicity in laboratory animals. Decreased fetal weight and increased resorptions were noted at maternally toxic doses. No significant effects on pup growth or other developmental landmarks were

observed postnatally.

Ethyl Benzene (CAS# 100-41-4)

Carcinogenicity: Rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study demonstrated limited evidence of kidney, liver, and lung cancer. Ethyl benzene has been listed as a possible human carcinogen by IARC. Ethyl benzene has not been listed as a carcinogen by NTP, or OSHA.

Target Organ(s): In rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study there was mild damage to the kidney (tubular hyperplasia), liver (eosinophilio foci, hypertrophy, necrosis), thyroid (hyperplasia) and pituitary (hyperplasia).

Benzene (CAS# 71-43-2)

Carcinogenicity: Benzene is an animal carcinogen and is known to produce acute myelogenous leukemia (a form of cancer) in humans. Benzene has been identified as a human carcinogen by NTP, IARC and OSHA.

Target Organ(s): Prolonged or repeated exposures to benzene vapors has been linked to bone marrow toxicity which can result in blood disorders such as leukopenia, thrombocytopenia, and aplastic anemia. All of these diseases can be fatal.

Developmental: Exposure to benzene during pregnancy demonstrated limited evidence of developmental toxicity in laboratory animals. The effects seen include decreased body weight and increased skeletal variations in rodents. Alterations in hematopoeisis have been observed in the fetuses and offspring of pregnant mice.

Mutagenicity: Benzene exposure has resulted in chromosomal aberrations in human lymphocytes and animal bone marrow cells, and DNA damage in mammalian cells in vitro.

Acute Data:
Benzene:
Dermal LD50> 9400 mg/kg (Rabbit), (Guinea Pig)
LC50= 9980 ppm (Mouse); 10000 ppm/7hr. (Rat)
Oral LD50= 4700 mg/kg (Mouse); 930 mg/kg (Rat); 5700 mg/kg (Mammal)

Crude Oil:
Dermal LD50>2g/kg (Rabbit)
LC50>5mg/l
Oral LD50>5g/kg (Rat), >10g/kg (Mice)

Ethyl Benzene:
Dermal LD50= 17800 mg/kg (Rabbit)
LC50=4000 ppm/4 hr.; 13367 ppm (Rat)
Oral LD50=3500 mg/kg (Rat)

Hydrogen Sulfide:
Dermal - No data
LCLo= 600 ppm, 30 min. (Human)
Ingestion - No data

12. ECOLOGICAL INFORMATION

Not evaluated at this time

13. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, would be a RCRA "characteristic" hazardous waste due to the characteristic(s) of ignitability (D001), benzene (D018) and possibly reactivity (D003). If the spilled or released material impacts soil, water, or other media, characteristic testing of the contaminated materials may be required prior to their disposal. Further, this material, once it becomes a waste, is subject to the land disposal restrictions in 40 CFR 268.40 and may require treatment prior to disposal to meet specific standards. Consult state and local regulations to determine whether they are more stringent than the federal requirements.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

14. TRANSPORT INFORMATION

DOT Shipping Description:	Petroleum Crude Oil,3,UN 1267,I, II, or III*
Non-Bulk Package Marking:	Petroleum crude oil, UN 1267
Non-Bulk Package Label:	Flammable
Bulk Package Placard/Marking:	Flammable/1267
Hazardous Substance/RQ	None
Packaging References	I - 49 CFR 173.201, 173.243; II - 49 CFR 173.150, 173.202, 173.242; III - 49 CFR 173.150, 173.203, 173.243*
Emergency Response Guide:	128

Note: *Packing group is dependent on flash point of the material being handled.

15. REGULATORY INFORMATION

EPA SARA 311/312 (Title III Hazard Categories):

Acute Health:	Yes
Chronic Health:	Yes
Fire Hazard:	Yes
Pressure Hazard:	No
Reactive Hazard:	No

SARA 313 and 40 CFR 372:
This material contains the following chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372:

Component	CAS Number	Weight %
Ethyl Benzene	100-41-4	<2
Benzene	71-43-2	<1
Hydrogen Sulfide	7783-06-4	Variable (<1)

California Proposition 65:

Warning: This material contains the following chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Component	Effect
Benzene	Cancer, Developmental and Reproductive Toxicant
Various Polycyclic Aromatic Hydrocarbons	Skin Cancer

Carcinogen Identification:

This material has not been identified as a carcinogen by NTP or OSHA. Crude oil has been identified as a carcinogen by IARC. See Section 11 for carcinogenicity information of individual

components.

EPA (CERCLA) Reportable Quantity:

--None--

Canada - Domestic Substances List: Listed

WHMIS Class:

B2-Flammable Liquid
D2B-Materials causing other toxic effects - Toxic Material

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION

Issue Date: 02/28/03
Previous Issue Date: 01/01/02
Product Code: Multiple
Revised Sections: 1, 2, 3, 4, 5, 8, 9, 11, 13, 14, 16
Previous Product Code: Multiple
MSDS Number: 724160
Status: Final

Disclaimer of Expressed and Implied Warranties:

The information presented in this Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. **HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE.** No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

ConocoPhillips

MATERIAL SAFETY DATA SHEET

Crude Oil, Sour

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Crude Oil, Sour

Product Code: Multiple

Synonyms: Crude Oils, Desalted, Sour
Earth Oil, Sour
Field Crude, Sour
Petroleum Crude, Sour
Petroleum Oil, Sour
Rock Oil, Sour
Sour Crude

Chemical Family: Petroleum Hydrocarbon

Responsible Party: ConocoPhillips
P.O. Box 2197
Houston, TX
77252

For Additional MSDSs 800-762-0942

Technical Information: 918-661-9476

EMERGENCY OVERVIEW

24 Hour Emergency Telephone Numbers:

Spill, Leak, Fire or Accident
Call CHEMTREC
North America: (800)424-9300
Others: (703)527-3887 (collect)

California Poison Control System: (800) 356-3129

Health Hazards/Precautionary Measures: May contain or liberate poisonous hydrogen sulfide gas. Harmful if inhaled. Skin cancer hazard. Aspiration hazard if swallowed. Can enter lungs and cause damage. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Do not taste or swallow. Wash thoroughly after handling.

Physical Hazards/Precautionary Measures: Flammable liquid and vapor. Keep away from heat, sparks, flames, static electricity or other sources of ignition.

Appearance: Amber to black

Physical form: Oily liquid

Odor: Pungent hydrocarbon - sulfurous odor possible

NFPA Hazard Class:

```
Health:       3 (High)
Flammability: 3 (High)
Reactivity:   0 (Least)
```

HMIS Hazard Class

```
Health:           3*(High)
Flammability:     3 (High)
Physical Hazard:  0 (Least)
```

*Indicates possible chronic health effects.

2. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS	% WEIGHT	EXPOSURE GUIDELINE		
		Limits	Agency	Type
Crude Oil (Petroleum) CAS# 8002-05-9	100	(See: Oil Mist, If Generated)		
Hydrogen Sulfide CAS# 7783-06-4	1-3	10 ppm	ACGIH	TWA
		15 ppm	ACGIH	STEL
		20 ppm	OSHA	CEIL
		100 ppm	NIOSH	IDLH
		50 ppm	OSHA	10 min. peak; once per 8-hr shift
Ethyl Benzene CAS# 100-41-4	<2	100 ppm	ACGIH	TWA
		125 ppm	ACGIH	STEL
		100 ppm	OSHA	TWA
		800 ppm	NIOSH	IDLH
Benzene CAS# 71-43-2	<1	0.5 ppm	ACGIH	TWA-SKIN
		2.5 ppm	ACGIH	STEL-SKIN
		1 ppm	OSHA	TWA
		5 ppm	OSHA	STEL
		500 ppm	NIOSH	IDLH

REFERENCE	EXPOSURE GUIDELINE		
	Limits	Agency	Type
Oil Mist, If Generated CAS# None	5 mg/m3	ACGIH	TWA
	10 mg/m3	ACGIH	STEL
	5 mg/m3	OSHA	TWA
	2500 mg/m3	NIOSH	IDLH
	5 mg/m3	NOHSC	TWA

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

1%=10,000 PPM.

Contains benzene. If exposure concentrations exceed the 0.5 ppm action level, OSHA requirements for personal protective equipment, exposure monitoring, and training may apply (29CFR1910.1028). Also see Section 4.

All components are listed on the TSCA inventory.

3. HAZARDS IDENTIFICATION

Potential Health Effects:

Eye: Contact may cause mild eye irritation including stinging, watering, and redness.

Skin: Contact may cause mild skin irritation including redness, and a burning sensation. Prolonged or repeated contact can worsen irritation by causing drying and cracking of the skin leading to dermatitis (inflammation). No harmful effects from skin absorption are expected.

Inhalation (Breathing): Toxic. May be harmful if inhaled. May contain or liberate hydrogen sulfide - see Other Comments section below.

Ingestion (Swallowing): Low degree of toxicity by ingestion. ASPIRATION HAZARD - This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Signs and Symptoms: Effects of overexposure may include irritation of the digestive tract, irritation of the respiratory tract, nausea, vomiting, diarrhea and transient excitation followed by signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue).

Cancer: Skin cancer hazard (see Sections 11 and 15).

Target Organs: Inadequate data available for this material.

Developmental: Potential hazard to the fetus (see Section 11).

Other Comments: This material may contain or liberate hydrogen sulfide, a poisonous gas with the smell of rotten eggs. The smell disappears rapidly because of olfactory fatigue so odor may not be a reliable indicator of exposure. Effects of overexposure include irritation of the eyes, nose, throat and respiratory tract, blurred vision, photophobia (sensitivity to light), and pulmonary edema (fluid accumulation in the lungs). Severe exposures can result in nausea, vomiting, muscle weakness or cramps, headache, disorientation and other signs of nervous system depression, irregular heartbeats, convulsions, respiratory failure, and death.

This material may contain polynuclear aromatic hydrocarbons (PNAs) which have been known to produce a phototoxic reaction when contaminated skin is exposed to sunlight. The effect is similar in appearance to an exaggerated sunburn, and is temporary in duration if exposure is discontinued. Continued exposure to sunlight can result in more serious skin problems including pigmentation (discoloration), skin eruptions (pimples), and possible skin cancers.

Pre-Existing Medical Conditions: Conditions aggravated by exposure may include skin disorders and respiratory (asthma-like) disorders.

4. FIRST AID MEASURES

Eye: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: Wipe material from skin and remove contaminated shoes and clothing. Cleanse affected area(s) thoroughly by washing with mild soap and water and, if necessary, a waterless skin cleanser. If irritation or redness develops and persists, seek medical attention.

Inhalation (Breathing): Immediately move victim away from exposure and into fresh air. If respiratory symptoms or other symptoms of exposure develop, seek immediate medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion (Swallowing): Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

Note To Physicians: This material may contain or liberate hydrogen sulfide. In high doses hydrogen sulfide may produce pulmonary edema and respiratory depression or paralysis. The first priority in treatment should be the establishment of adequate ventilation and the administration of 100% oxygen. If unresponsive to supportive care, nitrites (amyl nitrite by inhalation or sodium nitrite IV) may be an effective antidote, if delivered within the first few minutes of exposure.

Acute aspirations of large amounts of oil-laden material may produce a serious aspiration pneumonia. Patients who aspirate these oils should be followed for the development of long-term

sequelae. Inhalation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities.

Federal regulations (29 CFR 1910.1028) specify medical surveillance programs for certain exposures to benzene above the action level or PEL (specified in Section (i)(1)(i) of the Standard). In addition, employees exposed in an emergency situation shall, as described in Section (i)(4)(i), provide a urine sample at the end of the shift for measurement of urine phenol.

5. FIRE FIGHTING MEASURES

Flammable Properties: Flash Point: <100°F/<38°C
OSHA Flammability Class: Combustible liquid
LEL%: 1.1 / UEL%: 6.0
Autoignition Temperature: 590°F/310°C

Unusual Fire & Explosion Hazards: This material is flammable and can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Fire Fighting Instructions: Long-duration fires involving crude or residual fuel oil stored in tanks may result in a boilover. The contents of the tank may be expelled beyond the containment dikes or ditches. All personnel should be kept back a safe distance when a boilover is anticipated (reference NFPA 11 or API 2021).

For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk.

Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

Flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof equipment is recommended.

Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8).

Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Use foam on spills to minimize vapors (see Section 5). Spilled material may be absorbed into an appropriate absorbent material.

Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining

shorelines, notify the National Response Center (phone number 800-424-8802).

7. HANDLING AND STORAGE

Handling: Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharge. The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-704 and/or API RP 2003 for specific bonding/grounding requirements.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2 and 8).

Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practices.

Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

Storage: Keep container(s) tightly closed. In a tank, barge, or other closed container, the vapor space above materials that contain hydrogen sulfide (H2S) may result in concentrations immediately dangerous to life or health (IDLH). Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional engineering controls may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

Personal Protective Equipment (PPE):

Respiratory: Wear a positive pressure air supplied respirator in situations where there may be potential for airborne exposure to H2S above exposure limits (see Section 2). If exposure concentation is unknown or if conditions immediately dangerous to life or health (IDLH) exist, use a NIOSH approved self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode.

A NIOSH certified air purifying respirator with an organic vapor cartridge may be used under conditions where H2S is not detected, and airborne concentrations of hydrocarbons are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a NIOSH approved self-contained breathing apparatus (SCBA) or equivalent operated in pressure demand or other positive pressure mode if there is a potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Skin: The use of gloves impervious to the specific material handled is advised to prevent skin contact and possible irritation (see manufacturers literature for information on permeability).

Eye/Face: Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

Other Protective Equipment: A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

Suggestions for the use of specific protective materials are based on readily available published data. Users should check with specific manufacturers to confirm the performance of their products.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).
Appearance: Amber to black
Physical State: Oily liquid
Odor: Pungent hydrocarbon - sulfurous odor possible
pH: Not applicable
Vapor Pressure (mm Hg): 0.6 - 10 lbs. (Reid)
Vapor Density (air=1): >1
Boiling Point/Range: 0 to 1000°F / -17 to 538°C
Freezing/Melting Point: No Data
Solubility in Water: Neglibible
Specific Gravity: 0.7-1.03 @ 60°F
Percent Volatile: >50%
Evaporation Rate (nBuAc=1): >1
Viscosity: Varies
Bulk Density: 7.17 lbs/gal
Flash Point: <100°F / <38°C
Flammable/Explosive Limits (%): LEL: 1.1 / UEL: 6.0

10. STABILITY AND REACTIVITY

Stability: Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Flammable liquid and vapor. Vapor can cause flash fire.

Conditions To Avoid: Avoid all possible sources of ignition (see Sections 5 and 7).

Materials to Avoid (Incompatible Materials): Avoid contact with nitric acid and strong oxidizing agents.

Hazardous Decomposition Products: Combustion can yield carbon, nitrogen and sulfur oxides, other organic compounds and possibly hydrogen sulfide.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Crude Oil (Petroleum) (CAS# 8002-05-9)

Carcinogenicity: Chronic application of crude oil to mouse skin resulted in an increased incidence of skin tumors. IARC concluded in its Crude Oil Monograph that there is limited evidence of carcinogenicity in animals, and that crude oil is not classifiable as to its carcinogenicity in humans (Group 3). It has not been listed as a carcinogen by NTP or OSHA.

Developmental: Dermal exposure to crude oil during pregnancy resulted in limited evidence of developmental toxicity in laboratory animals. Decreased fetal weight and increased resorptions were noted at maternally toxic doses. No significant effects on pup growth or other developmental landmarks were observed postnatally.

Ethyl Benzene (CAS# 100-41-4)

Carcinogenicity: Rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study demonstrated limited evidence of kidney, liver, and lung cancer. Ethyl benzene has been listed as a possible human carcinogen by IARC. Ethyl benzene has not been listed as a carcinogen by NTP, or OSHA.

Target Organ(s): In rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study there was mild damage to the kidney (tubular hyperplasia), liver (eosinophilio foci, hypertrophy, necrosis), thyroid (hyperplasia) and pituitary (hyperplasia).

Benzene (CAS# 71-43-2)

Carcinogenicity: Benzene is an animal carcinogen and is known to produce acute myelogenous leukemia (a form of cancer) in humans. Benzene has been identified as a human carcinogen by NTP, IARC and OSHA.

Target Organ(s): Prolonged or repeated exposures to benzene vapors has been linked to bone marrow toxicity which can result in blood disorders such as leukopenia, thrombocytopenia, and aplastic anemia. All of these diseases can be fatal.

Developmental: Exposure to benzene during pregnancy demonstrated limited evidence of developmental toxicity in laboratory animals. The effects seen include decreased body weight and increased skeletal variations in rodents. Alterations in hematopoeisis have been observed in the fetuses and offspring of pregnant mice.

Mutagenicity: Benzene exposure has resulted in chromosomal aberrations in human lymphocytes and animal bone marrow cells, and DNA damage in mammalian cells in vitro.

Acute Data:
Benzene:
Dermal LD50> 9400 mg/kg (Rabbit), (Guinea Pig)
LC50= 9980 ppm (Mouse); 10000 ppm/7hr. (Rat)
Oral LD50= 4700 mg/kg (Mouse); 930 mg/kg (Rat); 5700 mg/kg (Mammal)

Crude Oil:
Dermal LD50>2g/kg (Rabbit)
LC50>5mg/l
Oral LD50>5g/kg (Rat), >10g/kg (Mice)

Ethyl Benzene:
Dermal LD50= 17800 mg/kg (Rabbit)
LC50=4000 ppm/4 hr.; 13367 ppm (Rat)
Oral LD50=3500 mg/kg (Rat)

Hydrogen Sulfide:
Dermal - No data
LCLo= 600 ppm, 30 min. (Human)
Ingestion - No data

12. ECOLOGICAL INFORMATION

Not evaluated at this time

13. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, would be a RCRA "characteristic" hazardous waste due to the characteristic(s) of ignitability (D001), benzene (D018) and reactivity (D003). If the spilled or released material impacts soil, water, or other media, characteristic testing of the contaminated materials may be required prior to their disposal. Further, this material, once it becomes a waste, is subject to the land disposal restrictions in 40 CFR 268.40 and may require treatment prior to disposal to meet specific standards. Consult state and local regulations to determine whether they are more stringent than the federal requirements.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

14. TRANSPORT INFORMATION

DOT Shipping Description:	Petroleum Crude Oil,3,UN 1267,I, II, or III*
Non-Bulk Package Marking:	Petroleum crude oil, UN 1267
Non-Bulk Package Label:	Flammable
Bulk Package Placard/Marking:	Flammable/1267
Hazardous Substance/RQ	None
Packaging References	I - 49 CFR 173.201, 173.243; II - 49 CFR 173.150, 173.202, 173.242; III - 49 CFR 173.150, 173.203, 173.243*

Note: *Packing group is dependent on flash point of the material being handled.

15. REGULATORY INFORMATION

EPA SARA 311/312 (Title III Hazard Categories):

Acute Health:	Yes
Chronic Health:	Yes
Fire Hazard:	Yes
Pressure Hazard:	No
Reactive Hazard:	No

SARA 313 and 40 CFR 372:

This material contains the following chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372:

Component	CAS Number	Weight %
Hydrogen Sulfide	7783-06-4	1-3
Ethyl Benzene	100-41-4	<2
Benzene	71-43-2	<1

California Proposition 65:

Warning: This material contains the following chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Component	Effect
Benzene	Cancer, Developmental and Reproductive Toxicant
Various Polycyclic Aromatic Hydrocarbons	Skin Cancer

Carcinogen Identification:

This material has not been identified as a carcinogen by NTP or OSHA. Crude oil has been identified as a carcinogen by IARC. See Section 11 for carcinogenicity information of individual components.

EPA (CERCLA) Reportable Quantity:

--None--

Canada - Domestic Substances List: Listed

WHMIS Class:

B2-Flammable Liquid
D1A-Materials causing immediate and serious toxic effects - Very Toxic Material
D2B-Materials causing other toxic effects - Toxic Material

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION

Issue Date: 02/28/03
Previous Issue Date: 12/28/00
Product Code: Multiple
Revised Sections: 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 14
Previous Product Code: None
MSDS Number: 733721
Status: Final

Disclaimer of Expressed and Implied Warranties:

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REGULATORY CROSS REFERENCE

PAGE

DOT/PHMSA 49 CFR PART 194 CROSS REFERENCE

§ 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…	§ 6.8
(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;	§ 3.0, App B, F
(b)(2)(ii)	Identify environmentally and economically sensitive areas;	§ 6.0
(b)(2)(iii)	Describe the responsibilities of the operator and 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.	§ 6.8
(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
(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)(vii)	Training procedures,	App D

DOT/PHMSA 49 CFR PART 194 CROSS REFERENCE (Cont'd)		
§ 194.107	**BRIEF DESCRIPTION**	**LOCATION in PLAN**
(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 OPS 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.	Integrated
(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
§ 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
(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
(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
(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 CROSS REFERENCE (Cont'd)		
§ 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	§ 4.0
(a)(1)(ii)	The name and address of, and the procedure for contacting, the operator on a 24-hour basis	§ 2.0, Fig 2.2
(a)(1)(iii)	The name of, and procedures for contacting, the qualified individual on a 24-hour basis	§ 2.0, Fig 1.1, 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, Fig. 3.3, App I
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. Theses 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

DOT/PHMSA 49 CFR PART 194 CROSS REFERENCE (Cont'd)		
§ 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...	-----

Texas Oil Spill Prevention and Response Act of 1991
31 TAC Section 19.12 through 19.13 - Major Facilities

§ 19.12	DESCRIPTION OF GUIDELINE ITEM	LOCATION IN PLAN
(C)	For corporate applications, the application must be signed by an officer of at least the rank of vice-president. For partnerships...signed by a partner. All applications must also be signed by the person responsible for operation...(i.e. the facility manager or area manager).	Foreword
§ 19.13	**DESCRIPTION OF GUIDELINE ITEM**	**LOCATION IN PLAN**
(a)	Applicability....	-----
(b)	Implementation of plans....	Entire Plan
(c)	Required elements of discharge prevention and response plans....include the following information:	-----
(1)	the owner and operator of the facility;	Fig. 1.1
(2)	the person or persons in charge of the facility, as required by §19.16 of this title (relating to Person in Charge);	Fig. 1.1, App H
(3)	the name and address (both physical and mailing) of the facility;	Fig. 1.1, App H
(4)	a description of the facility, including:	-----
(A)	The location of the facility by latitude and longitude;	Fig. 1.1, App H
(B)	The facility's primary activity;	Fig. 1.1, App H
(C)	The types of oil handled, whether material safety data sheets (MSDS) have been prepared for them, and the location where the MSDS are maintained;	App I, App H
(D)	The storage capacity of each tank used for storing oil;	TGLO Online Facility Database*
(E)	The diameter of all lines through which oil is transferred;	TGLO Online Facility Database*, App H
(F)	The average daily throughput of oil at the facility; and	TGLO Online Facility Database*, App H
(G)	The dimensions and capacity in barrels of the largest oil-handling vessel which docks at the facility.	TGLO Online Facility Database*, App H
(5)	For a facility which normally does not have personnel on-site, a commitment to maintain in a prominent location a sign or placard....	App H
(6)	A general description of measures taken by the facility to prevent unauthorized discharges of oil;	App C
(7)	A plan to conduct an annual oil spill drill that entails notifying the GLO and National Response Center and keeping a log at the facility....	App D
(8)	If oil is transferred at the facility, emergency transfer procedures to be implemented if an actual or threatened unauthorized discharge of oil occurs at the facility;	§ 2.0, § 3.0
(9)	Strategic plans to contain and clean up unauthorized discharges of oil from the facility;	§ 3.0, § 6.0, App F
(10)	A statement that all facility personnel who might be involved in an oil spill response have been informed that detergents or other surfactants are proh bited....	App A
(11)	A description of any secondary containment or diversionary structures...including the methodology for determining that the structures or equipment are adequate....	App C
(d)	Additional requirements for facilities classified as intermediate....	N/A
(e)	Additional requirements for facilities classified as large.....	-----
(1)	Maps showing vehicular access to the facility, pipelines to and from the facility, and nearby residential or other populous areas;	Fig. 6.2
(2)	A site plan of the facility showing:	-----

* The TGLO Online Facility Database is reviewed annually for each regulated facility and updated as necessary.

Texas Oil Spill Prevention and Response Act of 1991
31 TAC Section 19.12 through 19.13 - Major Facilities (Cont'd)

§ 19.13	DESCRIPTION OF GUIDELINE ITEM	LOCATION IN PLAN
(A)	The location of all structures in which oil is stored;	App H
(B)	The location of all areas where oil is transferred at the facility; and	App H
(C)	Drainage and diversion systems at the facility, such as sewers, outfalls, catchment or containment systems or basins, sumps, and all watercourses into which surface runoff from the facility drains (all of which bay be shown on the site plan or maps);	App H
(3)	A plan to conduct an annual oil spill drill that includes the following elements:	-----
(A)	Notifying the GLO and National Response Center;	§ 2.0, App D
(B)	Notifying any third parties, such as discharge cleanup organizations, which have agreed to respond….	§ 2.0, App D
(C)	If the facility has spill response equipment stored on-site, deployment of a representative portion of the equipment which would be used to respond to the type of discharge most likely to occur at the facility; and	App A, App D
(D)	A log documenting when the annual drill was conducted and the facility personnel who participated in it;	App G
(4)	A detailed description of the facility's discharge prevention and response capability, including:	-----
(A)	Leak detection and safety systems to prevent accidental discharges of oil, including a description of equipment and procedures;	App C
(B)	Schedules, methods, and procedures for testing, maintaining, and inspecting storage tanks, pipelines, and other equipment used for handling oil;	App C
(C)	Schedules, methods, and procedures for conducting accidental discharge response drills;	App D
(D)	Whether the facility's oil spill response capability will primarily be based on contracts or agreements with third parties or on the facility's own personnel and equipment;	App A
(E)	Planned response actions, the chain of command, lines of communication, and procedures for notifying the GLO, emergency response and public safety entities, other agencies, and neighboring facilities in the event of an unauthorized discharge of oil;	§ 2.0, § 3.0, § 4.0
(F)	Oil spill response equipment and supplies located at the facility, their ownership and location, and the time required to deploy them;	App A
(G)	If the facility owns and maintains oil spill response equipment, the schedules, methods, and procedures for maintaining the equipment in a state of constant readiness for deployment;	App A
(H)	If the operator has entered into any oil spill response or cleanup contract or basic ordering agreements with a discharge cleanup organization, copies of the contracts or agreements or a narrative description of their terms;	App A
(I)	The worst case unauthorized discharge of oil reasonably likely to occur at the facility and the rationale used to determine the worst case unauthorized discharge;	App B, App H
(J)	A description and map of environmentally sensitive areas that would be impacted by the worst case unauthorized discharge and plans for protecting these areas if an oil spill occurs at the facility;	§ 6.0
(K)	A description of response strategies that would be implemented to contain and clean up the worst case unauthorized discharge;	§ 3.0, App A, App F
(L)	Information on the facility's program for training facility personnel on accidental discharge prevention and response;	App D
(M)	Information on facility personnel who have been specifically designated to respond to an oil spill, including any training they have received and where the training records are maintained;	Fig. 2.2, App D

Texas Oil Spill Prevention and Response Act of 1991
31 TAC Section 19.12 through 19.13 - Major Facilities (Cont'd)

§ 19.13	DESCRIPTION OF GUIDELINE ITEM	LOCATION IN PLAN
(N)	Plans for transferring oil during an emergency; plans for recovering, storing, separating, transporting, and disposing of oily waste materials generated during an oil spill response; and	App F
(O)	Plans for providing emergency medical treatment, site safety, and security during an oil spill.	§ 3.0

GLOSSARY OF TERMS / ACRONYMS

PAGE

This glossary contains definitions of terms that will be used frequently during the course of response operations.

Abandon Pipeline: A pipeline or pipeline segment which has met the criteria of an Out-Of-Service pipeline (purged, sealed and disconnected from an operating system) but will not be maintained to minimum USDOT inspection and maintenance standards.

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.

Active Pipeline: A pipeline or pipeline segment which is in service whether or not the pipeline is fully operational. This includes pipelines which may have been utilized to transport hazardous liquids but are currently static or unused.

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.

Alert: Means an incident has occurred at the terminal which has the potential to affect off-site locations.

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.

Breakout Tank: Means a tank used to (a) relieve surges in a hazardous liquid pipeline system or (b) receive and store hazardous liquid transported by a pipeline for reinjection and continued transportation by pipeline.

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.

Captain of the Port Zone (COTP): Means a zone specified in 33 CFR Part 3 and the seaward extension of that zone to the outer boundary of the exclusive economic zone (EEZ).

CERCLA: Means the Comprehensive Environmental Response, Compensation Liability Act regarding hazardous substance releases into the environment and the cleanup of inactive hazardous waste disposal sites.

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.

CHEMTREC: Means the Chemical Transportation Emergency Center operated by Chemical Manufacturers Association. Provides information and/or assistance to emergency responders. Can be reached 24 hours a day by calling 800-424-9300.

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 form 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: (1) A document used by federal, state, and local agencies to guide their planning and response procedures regarding spills of oil, hazardous substances, or other emergencies; and/or (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.

Diversion 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.

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 Planning Zone: Means the area designated by the jurisdiction boundaries of those communities which are within a radial distance of one-half mile from the terminal.

Emergency Response: Means the response to any occurrence which results, or is likely to result, in a release of a hazardous substance due to an event.

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.

Emulsion: Suspension of oil in water.

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 any other area protected or managed for its natural resource value.

Exclusive Economic Zone: Means the zone contiguous to the territorial sea of the United States extending to a distance up to 200 nautical miles from the baseline from which the breadth of the territorial sea is measured.

Facility (DOT): Means new and existing pipe, rights-of-way and any equipment, facility, or building used in the transportation of hazardous liquids or carbon dioxide.

Facility (EPA/USCG): 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 That Could Reasonably Be Expected To Cause Significant And Substantial Harm: Means any fixed MTR on-shore facility (including piping and any structures that are used for the transfer of oil between a vessel and a facility) that is capable of transferring oil, in bulk, to or from a vessel of 250 barrels or more, and a deepwater port. This also includes any facility specifically identified by the COTP.

Facility That Could Reasonably Be Expected To Cause Substantial Harm: Means any mobile MTR facility that is capable of transferring oil to or from a vessel with a capacity of 250 barrels or more. This also includes any facility specifically identified by the COTP.

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 (RRT): 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.

General Emergency: Means an incident has occurred and the affected community is implementing protective actions.

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 Chemicals: Means all chemicals which constitute a physical hazard or a health hazard as defined by 29 CFR 1910.1200, with the exceptions listed in section 311(e). This term comprises approximately 90 percent of all chemicals.

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 designated 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

Health Hazard: Means a chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principals that acute or chronic health effects may occur in exposed employees.

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 the necessary 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: means the area shoreward of the boundary lines defined in 46 CFR part 7; 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.

Internally Reported Event: An incident that does not meet the reporting criteria established for notification of off-site authorities. No evacuation has occurred.

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.

Line Section: Means a continuous run of pipe between adjacent pressure pump stations, between a pressure pump station and terminal or breakout tanks, between a pressure pump station and a block valve, or between adjacent block valves.

Light Oil Terminal Operations: Means the storage and distribution of gasoline and diesel fuel to wholesale customers.

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.

Marine Transportation Related Facility (MTR FACILITY): Means an on-shore facility, including piping and any structure used to transfer oil to or from a vessel, subject to regulation under 33 CFR Part 154 and any deepwater port subject to regulation under 33 CFR Part 150.

Maximum Extent Practicable: Means the planning values derived from the planning criteria used to evaluate the response described in the response plan to provide the on-water recovery capability and the shoreline protection and cleanup capability to conduct response activities for a worst case discharge from a facility in adverse weather.

Maximum Most Probable Discharge: Means a discharge of the lesser of 1,200 barrels or 10 percent of the volume of a worst case discharge.

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); the entity established by the Secretary of the Department of Transportation through which the USCG, operating from Elizabeth City, North Carolina, is responsible for 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 lease 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).

Oil Spill Removal Organization (OSRO): Means an entity that provides response resources.

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.

Operating Area: Refers to the rivers and canals, inland, nearshore, Great Lakes, or offshore geographic location(s) in which a facility is handling, storing, or transporting oil.

Operating Environment: Refers to rivers and canals, inland, Great Lakes, or ocean. These terms are used to define the conditions in which response equipment is designed to function.

Out of Service (OOS) Pipeline: A pipeline or pipeline segment which has been effectively cleaned of all hazardous liquids, filled with water or inert gas and blinded or otherwise isolated from an active pipeline system.

Owner or Operator: Any person, partnership, corporation, association, governmental unit or public or private organization of any character that owns, operates pipelines, facilities, or is involved in the transportation of oil.

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

Pipeline System: Means all parts of a pipeline facility through which a hazardous liquid or carbon dioxide moves in transportation, including but not limited to, line pipe, valves, and other appurtenances connected to line pipe, pumping units, fabricated assemblies associated with pumping units, metering and delivery stations and fabricated assemblies therein, and breakout tanks.

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 phase of a response performed after the immediate threat of a release has been stabilized or eliminated and cleanup of the sites has 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 contractor(s), 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 a easy to use format; (2) using decision trees, flowcharts, and checklists to ensure 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 Emergency: Means an incident has occurred and the entire terminal, with the exception of critical employees has been sheltered on-site or evacuated.

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.

Substantial Threat of a Discharge: Means any incident or condition involving a facility that may create a risk of discharge of fuel or cargo oil. Such incidents include, but are not limited to storage tank or piping failures, above ground or underground leak, fires, explosions, flooding spills contained within the facility, or other similar occurrences.

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 oil 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.

Toxic Substances: Any substances which have the capacity to produce personal injury or illness to man through ingestion, inhalation, or absorption through any body surface.

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.

Unusual Event: Means an incident has occurred which is noticeable and dramatic from the Terminal perimeter; however, no outside assistance is required and no evacuation outside the incident scene has occurred.

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 U.S. - See Navigable Waters, page G-11.

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.

AC - Area Committee
ACP - Area Contingency Plan
ADAPTS - Air Deliverable Anti-Pollution Transport
AFFF - Aqueous Film Forming Foam
AGT - Any Gross Tonnage (TONS)
AOR - Area of Responsibility
API - American Petroleum Institute
AQI - Alternate Qualified Individual
ARPA - Automatic Radar Plotting Aid
AST - Aboveground Storage Tank
ASTM - American Society for Testing and Materials
AT - Airtight
ATSDR - Agency for Toxic Substances and Disease Registry
AWG - American Wire Gauge
B - Beam
BIA - Bureau of Indian Affairs
BBL - Barrel (Unit of Volume Equal to 42 Gallons)
BLM - Bureau of Land Management
BPD - Barrels Per Day
BPH - Barrels Per Hour
BOD - Biological Oxygen Demand
BOM - Bureau of Mines
C - Degrees Centigrade
C3 - Command, Control, and Communications
C & R - Cargoes and Restriction (List)
CAER - Community Awareness and Emergency Response
CERCLA - Comprehensive Environmental Response, Compensation and Liability Act
CCR - California Code of Regulations
CDB - Continuous Discharge Book
CDG - Subcommittee on the Carriage of Dangerous Goods
CEQ - Council on Environmental Quality
CFM - Cubic Feet per Minute
CFR - Code of Federal Regulations
CG or USCG - Coast Guard
CGA - Compressed Gas Association
CH - Cargo Hold
CHEMTREC - Chemical Transportation Emergency Center
CHRIS - Chemical Hazards Response Information System
CMA - Chemical Manufacturers Association
CNG - Compressed Natural Gas
CO - Commanding Officer
COA - Certificate of Adequacy
COC - Certificate of Compliance
COE - U. S. Army Corps of Engineers
COF - Certificate of Fitness
COFR - Certificate of Financial Responsibility
COI - Certificate of Inspection
COIL - Central Oil Identification Laboratory
COMDTINST - Commandant Instruction
COMDTNOTE- Commandant Notice
COMDTPUB - Commandant's Publication
CONUS - Continental United States
COPH - Cargoes of Particular Hazard
CORE - Contingency Response
COTP - Captain of the Port Zone
COW - Crude Oil Washing
CRZ - Contamination Reduction Zone
CS - General Cargo Ship
CSA - Canada Standards Association
CSC - International Convention for Safe Containers, 1972
CT - Cargo Tank
C/V - Container Vessel
CVS - Commercial Vessel Safety Program
CWA - Clean Water Act (Federal - Public Law 100-4)
CWS - Community Water System
CZM - Coastal Zone Management
DECON - Decontamination
DEQ - Department of Environmental Quality
DL - Decision Letters
DOC - Department of Commerce

DOD	-	Department of Defense
DOE	-	Department of Energy
DOI	-	Department of Interior
DOJ	-	Department of Justice
DOL	-	Department of Labor
DOS	-	Department of State
DOSC		Deputy On-Scene Coordinator
DOT	-	Department of Transportation
DSHO	-	Designated Safety and Health Official
DWT	-	Deadweight Tons
EBS	-	Emergency Broadcast System
EEBA	-	Emergency Escape Breathing Apparatus
EEI	-	Essential Elements of Information
EERU	-	Environmental Emergency Response Unit
EG	-	Emergency Generator Room
EHS	-	Extremely Hazardous Substance
EIS	-	Environmental Impact Statement
EMA	-	Emergency Management Agency
EMS	-	Emergency Medical Service
EMT	-	Emergency Medical Technician
EO	-	Executive Order
EOC	-	Emergency Operations Center
EOD		Explosive Ordinance Disposal
EP	-	Estimated Position
EPA	-	U. S. Environmental Protection Agency
EPCRA	-	The Emergency Planning and Right-to-Know Act of 1986 (Title III of SARA)
EQ	-	Environmental Quality
ERT	-	Environmental Response Team
ESA	-	Endangered Species Act
ESD	-	Emergency Shutdown
ETA	-	Estimated Time of Arrival
ETF	-	Emergency Task Force
FAA	-	Federal Aviation Administration
FAX	-	Facsimile Machine
FCC	-	Federal Communications Commission
FCL	-	Flammable Cryogenic Liquid
FEMA	-	Federal Emergency Management Agency
FMC	-	Federal Maritime Commission
FOIA	-	Freedom of Information Act
FOIL	-	Field Oil Identification Laboratory
FOSC	-	Federal On-Scene Coordinator
FP	-	Flashpoint
FPN	-	Federal Project Number
FR	-	Federal Register
FRDA	-	Freshwater Resource Damage Assessment
FRF	-	Federal Revolving Fund
FT	-	Fuel Tank
FTJ	-	Failure to Join
FWPCA	-	Federal Water Pollution Control Act (as amended) (33 U.S.C. 1251 et seq.)
GIS	-	Geographic Information System
GMT	-	Greenwich Mean Time
GPM	-	Gallons Per Minute
GSA	-	General Services Administration
GT	-	Gross Tons
HAZMAT	-	Hazardous Materials
HAZWOPER	-	Hazardous Waste Operations and Emergency Response
HHS	-	Department of Health and Human Services
HP	-	High Pressure
IC	-	Incident Commander
ICS	-	Incident Command System
IDLH	-	Immediately Dangerous to Life or Health
IG	-	Inert Gas
IGS	-	Inert Gas System
IOPP	-	International Oil Pollution Prevention Convention
IS	-	Intrinsically Safe
JRT	-	Joint Response Team
KW	-	Kilowatt
LEL	-	Lower Explosive Limit
LEPC	-	Local Emergency Planning Committee
LFL	-	Lower Flammable Limit
LNG	-	Liquefied Natural Gas
LOA	-	Length Overall
LOC	-	Letter of Compliance

LOP - Line of Position
LOSC - Local On-Scene Coordinator
LOX - Liquefied Oxygen
LP - Low Pressure
LPG - Liquefied Petroleum Gas
LRT - Local Response Team
MAWP - Maximum Allowable Working Pressure
MBL - Mobile
MEP - Marine Environmental Protection
MOU - Memorandum of Understanding
MSDS - Material Safety Data Sheet
MSO - Marine Safety Office
MSU - Marine Safety Unit
N/A - Not Applicable
NC - Not Certified
NCP - National Contingency Plan
NCWS - Non-Community Water System
NEPA - National Environmental Policy Act
NIIMS - National Interagency Incident Management System
NIOSH - National Institute for Occupational Safety and Health
NLS - Noxious Liquid Substances
NM - Nautical Mile
NMFS - National Marine Fisheries Service
NMT - Not More Than
NOAA - National Oceanic and Atmospheric Administration (Department of Commerce)
NPDES - National Pollution Discharge Elimination System
NPFC - National Pollution Funds Center
NPRM - Notice of Proposed Rulemaking
NPS - National Park Service
NRC - National Response Center
NRDA - Natural Resource Damage Assessment
NRS - National Response System
NRT - National Response Team
NSF - National Strike Force
NSFCC - National Strike Force Coordination Center
NTNCWS - Non -Transient Non-Community Water System
OPA - Oil Pollution Act
OPS - Office of Pipeline Safety (DOT)
ORB - Oil Record Book
OSC - On-Scene Coordinator
OSHA - Occupational Safety and Health Administration (USDL)
OSLTF - Oil Spill Liability Trust Fund
OSPRA - Oil Spill Prevention and Response Act
OSRL - Oil Spill Response Limited
OSRO - Oil Spill Response Organization
OT - Oil Tight
OVA - Organic Vapor Analyzer
OWS - Oily Water Separator
PCB - Polychlorinated Biphenyls
PFD - Personal Flotation Device
PGR - Pager
PHMSA - Pipeline and Hazardous Materials Safety Administration (replaces RSPA)
PIAT - Public Information Assist Team
POLREP - Pollution Report
PPE - Personal Protective Equipment
PPM - Parts Per Million
PSD - Prevention of Significant Deterioration
QDC - Quick Disconnect Coupling
QI - Qualified Individual
RACT - Reasonably Achievable Control Technology
RCP - Regional Contingency Plan
RCRA - Resource Conservation and Recovery Act
RECON - Reconnaissance
RQ - Reportable Quantity
RSPA - Research and Special Programs Administration (DOT - OPS) (replaced by PHMSA)
SARA - Superfund Amendments and Reauthorization Act
SCBA - Self Contained Breathing Apparatus
SDWA - Safe Drinking Water Act
SERC - State Emergency Response Commission

SI - Surface Impoundment
SIC - Standard Industrial Classification
SKIM - Spill Cleanup Equipment Inventory
SMT - Spill Management Team
SONS - Spill of National Significance
SOP - Standard Operating Procedure
SPCC - Spill Prevention Control and Countermeasures
SSC - Scientific Support Coordinator (NOAA)
STEL - Short Term Exposure Limits
SUPSALV - United States Navy Supervisor of Salvage
SWD - Salt Water Disposal
TLV - Threshold Limit Value
TSCA - Toxic Substances Control Act
TSDF - Treatment, Storage or Disposal Facility
UCS - Unified Command System
U.S. - United States
USACOE - U.S. Army Corps of Engineers
U.S.C. - United States Code
USCG - U.S. Coast Guard
USDA - U.S. Department of Agriculture
USDL - U.S. Department of Labor
USDOD - U.S. Department of Defense
USDOE - U.S. Department of Energy
USDW - Underground Source of Drinking Water
USFWS - U. S. Fish and Wildlife Services
USGS - U. S. Geological Survey
USPCI - United States Pollution Control, Incorporated
UST - Underground Storage Tank
WCD - Worst Case Discharge
WT - Water Tight

REGULATORY AGENCY CORRESPONDENCE AND OTHER AGENCY REQUIREMENTS