U.S. Department
of Transportation
**Pipeline and Hazardous
Materials Safety Administration**

1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

The following Oil Spill Response Plan has been submitted to the Department of Transportation (DOT) Pipeline Hazardous Materials Safety Administration (PHMSA) in HyperText Markup Language (HTML) format, and has since been converted to Portable Document Format (PDF) form. Any hyperlink included in the PDF file is NOT functional, and materials referenced in the links have been attached as an addendum at the end of the document.


NuStar
Virginia Beach Terminal
Integrated Contingency Plan


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Virginia Beach Terminal
Integrated Contingency Plan


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TECHNICAL RESPONSE PLANNING
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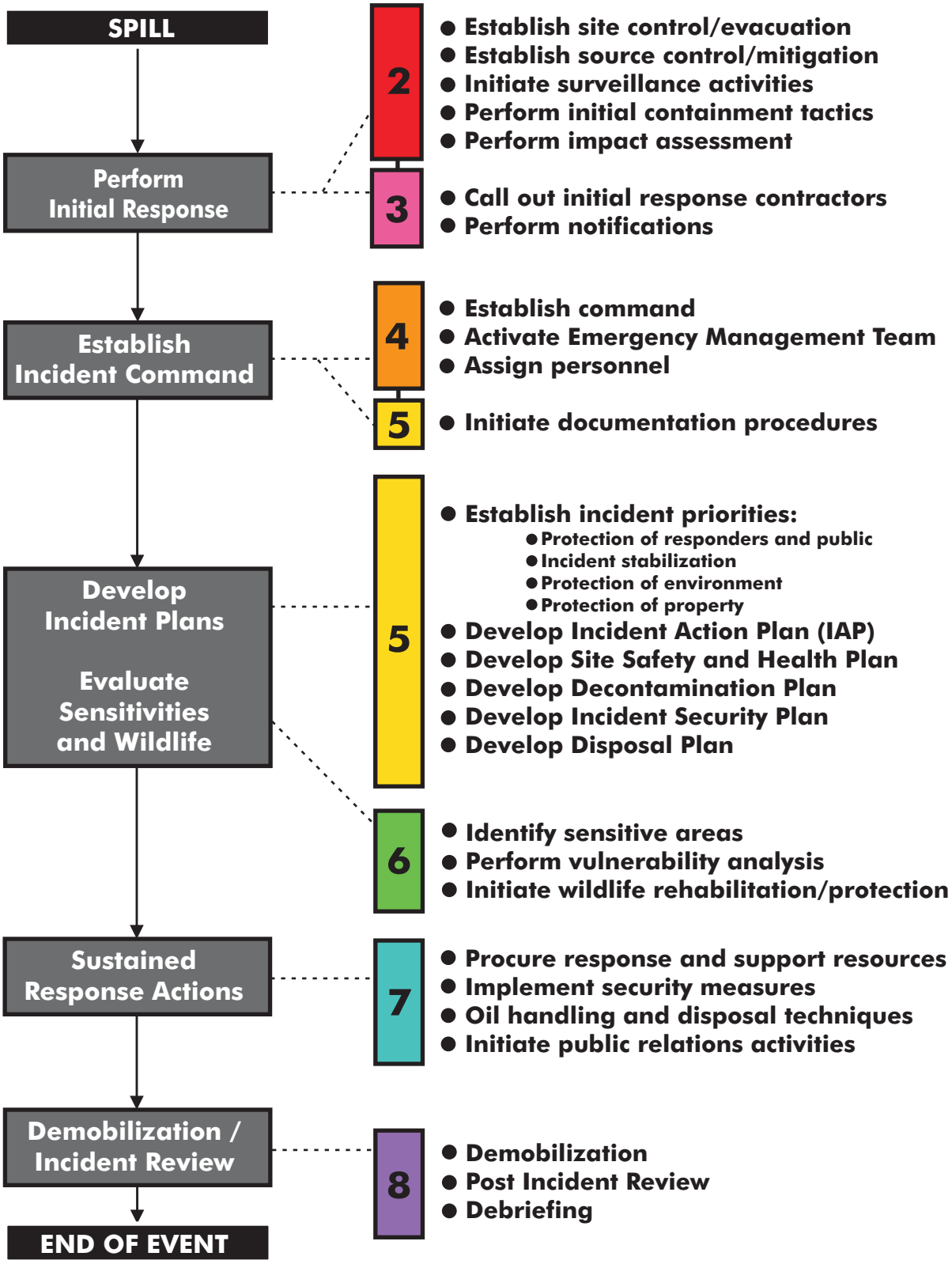
Virginia Beach Terminal, VA
Integrated Contingency Plan

Developed by:



9720 Cypresswood Drive #340 • Houston, Texas 77070 USA • Tel: 281-955-9600 • Fax: 281-955-0369 • info@trpcorp.com • www.trpcorp.com

Response Procedures Flow Chart



1. Introduction
2. Initial Response Actions
3. Notifications Phone Numbers
4. Response Team Organization
5. Incident Planning
6. Sensitive Areas Response Tactics
7. Sustained Response Actions
8. Demobilization Post Incident Review

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RECORD OF CHANGES

Changes to this Plan will be documented on this page. Plan review and modifications will be initiated and coordinated with Terminal Management.

DATE OF CHANGE	DESCRIPTION OF CHANGE	PAGE NUMBER
6/10/2008	Modified Section D.5.2 WCD Scenario Discussion to include 29 CFR 1910.120 reference	
11/20/2008	RCRA Cross Reference Updated	
11/25/2008	Figure 3.1-3 NRC notification statement updated	

12/8/2008	Appendix A - Figures A.1-4, A.1-5, and A.1-6 updated with "Other versions of this form may be used"	
12/29/2008	Updated FIGURE E-1 parts 1.5.2 and 1.7.2	
1/22/2009	Updated Figure 4.5-1	
1/22/2009	Updated Section D.5.3 - Description of Factors Affecting Response Efforts - Weather or aquatic conditions	
3/24/2009	Updated FIGURE 3.1-4 Release Notification Data Sheet	
3/25/2009	Updated SECTION 1.2 Plan Review and Update Procedure	
3/25/2009	Updated Appendix D.3 Inspection and Spill Detection	
4/7/2009	Updated Appendix E Response Plan Cover Sheet to calculate only aboveground containers in the Number of above ground oil storage tanks field	
8/6/2009	Appendix E - USCG Cross Reference parts B-4 and C-2 Updated	

RECORD OF CHANGES

Changes to this Plan will be documented on this page. Plan review and modifications will be initiated and coordinated with Terminal Management.

DATE OF CHANGE	DESCRIPTION OF CHANGE	PAGE NUMBER
12/10/2009	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-4 - Internal Notifications and Telephone Numbers	
7/20/2010	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-4 - Internal Notifications and Telephone Numbers	
7/20/2010	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-4 - Internal Notifications and Telephone Numbers	
7/20/2010	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-4 - Internal Notifications and Telephone Numbers	
4/28/2011	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-4 - Internal Notifications and Telephone Numbers	
4/28/2011	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-4 - Internal Notifications and Telephone Numbers	
6/9/2011	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-4 - Internal Notifications and Telephone Numbers	
6/10/2011	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-5 - External Notifications and	

	Telephone Numbers	
6/16/2011	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-4 - Internal Notifications and Telephone Numbers	
8/22/2011	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-5 - External Notifications and Telephone Numbers	
8/22/2011	ERAP | Emergency Response Action Plan (ERAP) | 4.0 Resources | Figure 4-3 - Regional Company and Response Contractor's Equipment List / Response Time	
8/22/2011	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-5 - External Notifications and Telephone Numbers	

RECORD OF CHANGES

Changes to this Plan will be documented on this page. Plan review and modifications will be initiated and coordinated with Terminal Management.

DATE OF CHANGE	DESCRIPTION OF CHANGE	PAGE NUMBER
8/22/2011	ERAP | Emergency Response Action Plan (ERAP) | 4.0 Resources | Figure 4-3 - Regional Company and Response Contractor's Equipment List / Response Time	
10/25/2011	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-4 - Internal Notifications and Telephone Numbers	
10/27/2011	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-5 - External Notifications and Telephone Numbers	
10/27/2011	ERAP | Emergency Response Action Plan (ERAP) | 4.0 Resources | Figure 4-3 - Regional Company and Response Contractor's Equipment List / Response Time	

SECTION 1 Last Revised: March 2009

INTRODUCTION

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Figure 1-1 - Distribution List

Figure 1-2 - **Virginia Beach Terminal** Information Summary

Figure 1-3 - **Facility** Area Map

Figure 1-4 - Facility Photograph

Figure 1-5 - Facility Site Plan

Figure 1-6 - Pipeline System Overview Map

1.1 Purpose / Scope of Plan

1.2 Plan Review and Update Procedure

1.3 Agency Submittal / Approval Letters

FIGURE 1-1 - DISTRIBUTION LIST

PLAN HOLDER	ADDRESS	NUMBER OF COPIES			
		PAPER	DISTRIBUTION DATE	ELECTRONIC	DISTRIBUTION DATE

FIGURE 1-2 - VIRGINIA BEACH TERMINAL INFORMATION SUMMARY

Owner:	NuStar Terminals Operations Partnership L.P. 2330 Loop 1604 West San Antonio, TX 78248 (210) 918-2000
Operator:	, (210) 918-2000
Facility Name:	Virginia Beach Terminal
Facility Address:	3924 North Landing Road Virginia Beach, VA 23456
Facility Latitude/Longitude:	(b) (7)(F) [redacted]
Facility Telephone/Fax:	(757) 427-1066 / (757) 427-0140
Facility EPA FRP #:	VA-FRP-084
Facility PHMSA FRP #:	NVB0
Facility USCG FRP #:	To get from Agency

FIGURE 1-2 - VIRGINIA BEACH TERMINAL INFORMATION SUMMARY

Description of Facility:	ICW Milepost Marker: 2 The Facility stores jet/kerosene and has a (b) (7)(F) [redacted]. Product is received via vessel and distributed by pipeline. Shipments are received by the Terminal via barge. Shipments are delivered to Oceana NAS by the Terminal via the Company-owned onshore transmission pipeline. The annual volume in petroleum product transfers is approximately 250,000 bbls. The Terminal has the ability to ship JP5 Jet Fuel to Oceana Naval Air Station via the Company-owned onshore transmission pipeline. The pipeline is buried in trenches to protect it from external disturbances with a 3-foot minimum cover in the right-of-ways.

	The pipeline is 8.85 miles long, with a 6.62-inch diameter, and passes along the North Landing Road and Princess Anne Road along its path from the Terminal to Oceana Naval Air Station. The pipeline is coated, and equipped with cathodic protection and leak detection systems 1963 - (b) (7)(F) re-erected on-site. 1985 - Miscellaneous (recovery) tank (200 bbls.) is installed on-site. 1992 - Product recovery tank (7 bbls. is installed on-site. 1998 - Dock house is built on dock platform; dock product recovery tank is modified. 2003 - Spill response boat and shed are installed at dock platform.
Size, Type, and Number of Vessels the Facility Can Transfer Oil to or from Simultaneously:	Only one vessel at our dock at any time. The dock is 14' x 20' and is constructed of timber. Offloading rate is 3,000 bbls/hr. Transfer hoses are made of 6" rubber and draft is 10 ft. Vessel type is a barge and length is 100' with a (b) (7)(F). Total line fill capacity is 691 bbls.

FIGURE 1-2 - VIRGINIA BEACH TERMINAL INFORMATION SUMMARY, CONTINUED

Qualified Individuals: (Refer to APPENDIX A, FIGURE A.2-3 for QI Training Records)

Facility		
Name and Contact Information	**Work Address**	**Home Address**
Kenneth Seals Terminal Manager Incident Commander (757) 427-1066 (Office) (b) (6) (757) 717-0918 (Mobile)	3924 North Landing Road Virginia Beach, VA 23456	,
Clifford Bell Terminal Specialist Team Members (757) 427-1066 (Office) (b) (6)	3924 North Landing Road Virginia Beach, VA 23456	,
Chaz Lehman Area Terminal Manager Incident Commander 301-599-5951 (Office) 908-487-7492 (Mobile)	1800 Frankfurst Avenue Baltimore, MD 21226	,
Business Unit		
Name and Contact Information	**Work Address**	**Home Address**
Chaz Lehman Area Terminal Manager Incident Commander 301-599-5951 (Office)	1800 Frankfurst Avenue Baltimore, MD	,

	908-487-7492 (Mobile)	21226	
	Steve Doyle Senior Manager Environmental & Regulatory Affairs Liaison Officer (856) 579-5063 (Office) ([redacted]) (856) 332-2424 (Mobile)	400 Grove Road West Deptford, NJ 08066	, NJ

Virginia Beach Terminal 1 - 6

FIGURE 1-2 - VIRGINIA BEACH TERMINAL INFORMATION SUMMARY, CONTINUED

<table>
<tr><td>Line Sections/ Products Handled: (Refer to Product Characteristic and Hazards, FIGURE D.9-1)</td><td>
<table>
<tr><th>SECTION</th><th>PRODUCTS</th></tr>
<tr><td>Virginia Beach Terminal to Oceana Naval Air Station; Pipe Diameter 6.62", Length 8.85 miles</td><td>JP-5 Jet Fuel</td></tr>
</table>
</td></tr>
<tr><td>Facility Data: (For date and type of substantial expansion, see Description of Facility and Tank Table in APPENDIX C)</td><td>
<table>
<tr><th>Location (Address and County)</th><th>Hours of Operations/ Manning</th><th>Throughput</th><th>Date of Startup</th><th>Wellhead Protection Area</th></tr>
<tr><td>3924 North Landing Road
Virginia Beach, , VA 23456</td><td>The Facility operates 24 hours per day, 365 days per year.</td><td>Daily throughput is approximately 76,300 barrels by all modes of transport.</td><td>December 17, 1963</td><td>No</td></tr>
<tr><td colspan="5">Current Operations</td></tr>
<tr><td colspan="5">SIC Code 4213 (Refined Petroleum Pipeline). Shipments are received by the Terminal via barge. Shipments are delivered to Oceana NAS by the Terminal via the Company-owned onshore transmission pipeline. The annual volume in petroleum product transfers is approximately 250,000 bbls. The Terminal has the ability to ship JP5 Jet Fuel to Oceana Naval Air Station via the Company-owned onshore transmission pipeline. The pipeline is buried in trenches to protect it from external disturbances with a 3-ft. minimum cover in the right-of-ways. The pipeline is 8.85 miles long, with a 6.625-inch diameter, and passes along the North Landing Road and Princess Anne Road along its path from the Terminal to Oceana Naval Air Station. The pipeline is coated, and equipped with cathodic protection and leak detection systems. The pipeline has a discharge rate of 350 gpm and an average throughput rate of 168,000 gallons of JP-5 Jet Fuel per day.</td></tr>
</table>
</td></tr>
<tr><td>Description of Zone:</td><td>The pipeline carries refined oil (including Jet Fuel) in the areas shown in <u>FIGURE 1-3</u> and <u>FIGURE 1-4</u></td></tr>
<tr><td>Response Zone</td><td></td></tr>
</table>

Consists of the Following Counties:	
Alignment Maps (Piping, Plan Profiles):	Maintained at: On-site
Worst Case Discharge:	(b) (7)(F) [redacted]
Statement of Significant and Substantial Harm:	The Piney Point pipeline system is less than 10 miles in length, therefore, in accordance with 49 CFR 194.103(c), would not be expected to cause Significant and Substantial Harm to the environment.
Spill Detection and Mitigation Procedures:	Refer to **SECTION 2.1.1**, **APPENDIX D.2.1** and **APPENDIX D.3**.
Date Prepared:	

The information contained in this Plan is intended to be used as guidelines for the spill responder. Actual circumstances will vary and will dictate the procedures to be followed, some of which may not be included in this manual.

Note: For further information on the Qualified Individuals' training and qualifications, refer to **SECTION 4.5** and **APPENDIX A.2** in this Plan.

FIGURE 1-3 - FACILITY AREA MAP

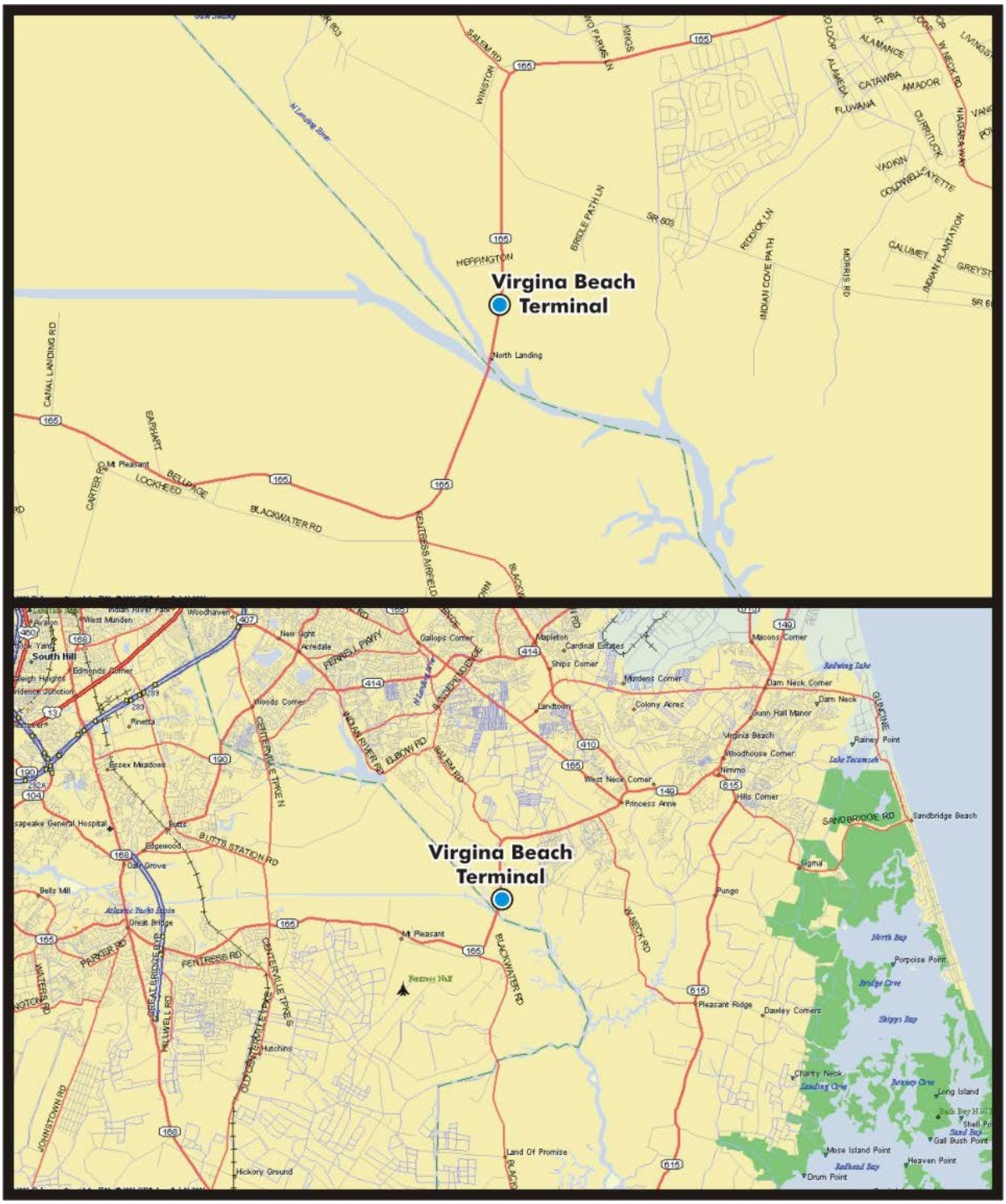


FIGURE 1-4 - FACILITY PHOTOGRAPH



FIGURE 1-5 - FACILITY SITE PLAN

Click here to view - Facility Plan

FIGURE 1-6 - PIPELINE SYSTEM OVERVIEW MAP

Click here to view overview map.

1.1 PURPOSE / SCOPE OF PLAN

The purpose of this Emergency Response Plan (Plan) is to provide guidelines to quickly, safely, and effectively respond to a spill. The Facility is owned and operated by , herein referred to as "Company."

This Plan is intended to satisfy the requirements of the Oil Pollution Act of 1990 (OPA 90), and has been prepared in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and applicable Area Contingency Plans (ACP), EPA Region III Regional Contingency Plan and USCG Oil Spill Response Plan. Specifically, this Plan is intended to satisfy:

- U.S. Environmental Protection Agency (EPA) requirements for an OPA 90 Plan (40 CFR 112.20)
- U.S. Environmental Protection Agency (EPA) requirements for a Spill Prevention Control and Countermeasures (SPCC) Plan (40 CFR 112.7)
- U.S. Coast Guard (USCG) requirements for an OPA 90 Plan (33 CFR 154.1035)
- U.S. Environmental Protection Agency (EPA) requirements for a Resource Conservation and Recovery Act (RCRA) Plan (40 CFR 265.50 through 265.56))
- Pipeline and Hazardous Materials Safety Administration (PHMSA), U.S. Department of Transportation requirements for an OPA 90 Plan (49 CFR 194)
- Occupational Safety and Health Administration (OSHA) requirements for emergency response plans (EAP and ERP) (29 CFR 1910)
- Virginia Department of Environmental Quality - ODCP - Regulations as published in 9VAC25-91-170.

1.2 PLAN REVIEW AND UPDATE PROCEDURE

In accordance with 40 CFR 112.20, this Plan will be reviewed annually and modified to address new or different operating conditions or information included in the Plan. Company internal policy states that the Plan including contact information will be reviewed at least annually and modified as appropriate. In the event the Company experiences a Worst Case Discharge, the effectiveness of the plan will be evaluated and updated as necessary. If a new or different operating condition or information would substantially affect the implementation of the Plan, the Company will modify the Plan to address such a change and, within 60 days of making such a change, submit the change to EPA.

Upon review of the response plan for each five-year period, revisions will be submitted to PHMSA provided that changes to the current plan are needed, or a letter stating will be submitted to PHMSA stating that the plan is still current.

The U.S. Coast Guard (USCG) requires that plan changes be submitted in a timely manner. The plan review must occur within one (1) month of the anniversary date of the USCG approval letter. If no changes are required, the facility shall submit a letter to the USCG stating "No Changes Required."

Examples of changes in operating conditions that would cause a significant change to the Plan include:

CONDITIONS REQUIRING REVISIONS AND SUBMISSIONS	EPA	PHMSA	USCG	RCRA
Relocation or replacement of the transportation system in a way that substantially affects the information included in the Plan, such as a change to the Worst Case Discharge volume.	x	x		
A change in the Facility's configuration that materially alters the information included in the Plan.	x		x	
A change in the type of oil handled, stored, or transferred that materially alters the required response resources.	x	x	x	
A change in key personnel (Qualified Individuals).	x	x		x
Material change in capabilities of the Oil Spill Removal Organization(s) (OSROs) that provide equipment and personnel.	x	x		x
Material change in the Facility's spill prevention and response equipment or emergency response procedures.	x		x	x
Any other changes that materially affect the implementation of the Plan.	x	x	x	x
A change in the NCP or ACP that has significant impact on the equipment appropriate for response activities.		x		
A change in the name of the Oil Spill Removal Organization (OSRO).		x	x	
A change in the Facility's operating area that includes ports or geographic area.			x	
Applicable regulations are required.				x
The Plan fails in an emergency.				x

HSE Department will coordinate with Terminal Manger to support the plan review and update procedures.

The most current version of the plan is always the electronic copy. Revisions to the site-specific information are made through the password protected maintenance interface. The date at the beginning of each Section indicates the last date that Section was revised. Any revisions made after that date need to be reprinted and inserted in to the paper copy of the plan.

1.3 AGENCY SUBMITTAL / APPROVAL LETTERS

Click here to view EPA Submittal May 2008

Click here to view EPA Update June 2008

Click here to view RCRA Contingency Plan Submittals July 2008

Click here to view PHMSA Submittal July 2008 (returned to sender)

Click here to view PHMSA Submittal July 2008 (re-send)

Click here to view USCG ICP Letter Of Approval Sept 2008

Click here to view Personnel Change Submittal Letters December 2009

Click here to view Agency Submittal Letters August 2010

Click here to view Agency Submittal Ship

Notifications August 2010

SECTION 2 Last Revised: May 2008

INITIAL RESPONSE ACTIONS

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2.1 Spill Response

Figure 2.1-1 - Spill Response Action Checklist

2.1.1 Spill Detection and Mitigation Procedures

Figure 2.1-2 - Spill Mitigation Procedures

2.1.2 Spill Surveillance Guidelines

Figure 2.1-3 - Spill Surveillance Checklist

2.1.3 Spill Volume Estimating

Figure 2.1-4 - Spill Estimation Factors

2.1.4 Estimating Spill Trajectories

2.1.5 Initial Containment Actions

2.1.6 Safety Considerations

2.2 Evacuation

2.3 Tornado

2.4 Flood

2.5 Medical

2.6 Bomb Threat

2.7 **Fire and/or Explosion**

2.8 Vapor Cloud

2.9 Third Party Vessel Owners / Operators

2.1 SPILL RESPONSE

FIGURE 2.1-1 - SPILL RESPONSE ACTION CHECKLIST

RESPONSE ACTION	
First Person to Discover Spill	
Immediately notify Terminal Management. Take appropriate action to protect life and ensure safety of personnel. Contact the appropriate local emergency responders or request the office to do so.	☐
Immediately shut down terminal operations (if applicable). (b) (7)(F) [redacted]	☐
Secure the scene. Isolate the area and assure the safety of people and the environment. Keep people away from the scene and outside the safety perimeter.	☐
Terminal Management	
Assume role of Incident Commander until relieved by upper Management (if applicable).	☐
Conduct preliminary assessment of health and safety hazards.	☐
Evacuate nonessential personnel, notify emergency response agencies to provide security, and evacuate surrounding area (if necessary).	☐
Call out Emergency Management Team and primary spill response contractors, as needed (**FIGURE 3.1-6**).	☐
Notify the Terminal Management and provide an incident briefing. Evaluate the need for activating the Regional Response Team (RRT).	☐
Notify the Regional General Manager and Regional HSE Manager.	☐
If safe to do so, direct facility responders to shut down potential ignition sources in the vicinity of the spill, including motors, electrical pumps, electrical power, flairs, etc. Keep drivers away from truck rack if spill occurs there.	☐
If safe to do so, direct facility responders to shut down and control the source of the spill. Be aware of potential hazards associated with product and ensure that lower explosive limits (LELs) are within safe levels before sending personnel into the spill area.	☐
If safe to do so, direct facility responders to stabilize and contain the situation. This may include construction of minor earthen berms and/or sorbent boom and pads.	☐
For low flash oil (<100ºF), consider applying foam over the oil, using water spray to reduce vapors, grounding all equipment handling the oil, and using non-sparking tools.	☐
If there is a potential to impact shorelines, consider lining shoreline with sorbent or diversion boom to reduce impact.	☐
Notify Local Emergency Responders. Obtain the information necessary to complete the Leak Accident Report Form (**FIGURE 3.1-2**).	☐
Make local notifications: • LEPC • Police • Fire • Sheriff	☐

HSE Regional Manager	
Make appropriate notifications: • National Response Center (800) 424-8802 • External regulatory notifications (**FIGURE 3.1-6**)	☐

FIGURE 2.1-1 - SPILL / RELEASE RESPONSE ACTION CHECKLIST, CONTINUED

RESPONSE ACTION, CONTINUED	
Emergency Management Team	
Activate all or a portion of Emergency Management Team (EMT) (as necessary). HSE Department will maintain contact with notified regulatory agencies.	☐
Mobilize spill response contractors (if necessary). It is much better to demobilize equipment and personnel if not needed than to delay contacting them if they are needed.	☐
Document all response actions taken, including notifications, agency/media meetings, equipment and personnel mobilization and deployment, and area impacted. (Refer to **SECTION 5** for documentation.)	☐
Water-based Spills: Initiate spill tracking and surveillance operations. Determine extent of pollution via surveillance aircraft or vehicle. Estimate volume of spill utilizing information in **SECTION 2.1.3**. Send photographer / videographer, if safe. Use of dispersants requires Federal or State approval.	☐
Land-based Spills: Initiate spill tracking and surveillance, if applicable.	☐
SECONDARY RESPONSE ACTIONS (Refer to EMT job descriptions in **SECTION 4.6**)	
FACILITY-SPECIFIC RESPONSE CONSIDERATIONS (Refer to **SECTION 6** for maps, tactical plans, and sensitivity information.)	

FIGURE 2.1-1 - SPILL / RELEASE RESPONSE ACTION CHECKLIST, CONTINUED

SITE SPECIFIC ACTIONS	
DOCUMENT ALL ACTIONS TAKEN	
First Priority	
Account for all personnel and visitors.	☐
Identify and assess fire/safety hazards.	☐
Second Priority	
Secure spill source, if possible.	☐
Assure all required notifications are conducted.	☐

Secure all drainage leading from Facility.	☐
Third Priority	
Facility drainage and secondary containment will be adequate to contain a spill of small or medium size, preventing it from reaching North Landing River. Once the spill has been contained, resources are present at the Facility to recover spilled product, safety conditions permitting.	☐
If unable to contain spill to Facility property, refer to SECTION 6.8 of the FRP or SECTION 9.0 of the ERAP for location of booming strategy.	☐
Once deployment of response equipment has been completed, initiate recovery of product.	☐
Upon arrival of EMT, assure all information is accurate and complete prior to being released.	☐
Assure proper documentation has been completed from initial discovery of spill to finish; reference **SECTION 5**.	☐

2.1.1 Spill Detection and Mitigation Procedures

See **APPENDIX D.5** for spill detection protocols.

Each spill mitigation situation is unique and must be treated according to the circumstance present. In every situation, however, personnel safety must be assessed as the first priority. The potential for ignition and/or toxic exposure must be promptly evaluated. Spill mitigation procedures are listed in FIGURE 2.1-3. Discharge volume calculations are provided in **APPENDIX D.**

FIGURE 2.1-2 - SPILL MITIGATION PROCEDURES

TYPE	MITIGATION PROCEDURE
Failure of Transfer Equipment	1. Personnel safety is the first priority. Evacuate nonessential personnel or personnel at high risk. 2. Terminate transfer operations and close block valves. 3. Drain product into containment areas (if possible). 4. Eliminate sources of vapor cloud ignition by shutting down all engines and motors.
Tank Overfill/Failure	1. Personnel safety is the first priority. Evacuate nonessential personnel or personnel at high risk. 2. Shut down or divert source of incoming flow to tank. 3. Shut down source of vapor cloud ignition by shutting down all engines and motors. 4. Ensure that dike discharge valves are closed. 5. Transfer fluid to another tank with adequate storage capacity (if possible). 6. Monitor diked containment area for leaks and potential capacity limitations. 7. Begin transferring spilled product to another tank as soon as possible.

Piping Rupture/Leak (under pressure and no pressure)	1. Personnel safety is the first priority. Evacuate nonessential personnel or personnel at high risk. 2. Shut down pumps. Close the closest block valves on each side of the rupture. 3. Drain the line back into contained areas (if possible). Alert nearby personnel of potential safety hazards. 4. Shut down source of vapor cloud ignition by shutting down all engines and motors. 5. If piping is leaking and under pressure, relieve pressure by draining into a containment area or back to a tank (if possible). Then repair line according to established procedures.
Fire/Explosion	1. Personnel safety is the first priority. Evacuate nonessential personnel or personnel at risk of injury. 2. Notify local fire and police departments. 3. Attempt to extinguish fire if it is in incipient (early) stage and **if it can be done safely**. 4. Shut down transfer or pumping operation. Attempt to divert or stop flow of product to the hazardous area (if it can be done safely). 5. Eliminate sources of vapor cloud ignition by shutting down all engines and motors. 6. Control fire before taking steps to contain spill. Also refer to fire/explosion response procedures in **SECTION 2.8**.
Manifold Failure	1. Personnel safety is the first priority. Evacuate nonessential personnel or personnel at high risk. 2. Terminate transfer operations immediately. 3. Isolate the damaged area by closing block valves on both sides of the leak/rupture. 4. Shut down source of vapor cloud ignition by shutting down all engines and motors. 5. Drain fluids back into containment areas (if possible).

2.1.2 Spill Surveillance Guidelines

- Surveillance of an oil spill should begin as soon as possible following discovery to enable response personnel to assess spill size, movement, and potential impact locations.
- All surveillance should be done upwind of the spill.
- Dispatch observers to crossings downstream or downgradient to determine the spill's maximum reach.
- Clouds, shadows, sediment, floating organic matter, submerged sand banks, or wind-induced patterns on the water may resemble an oil slick if viewed from a distance.
- Sorbent pads may be used to detect oil on water.
- Use surface vessels to confirm the presence of any suspected oil slicks (if safe to do

so); consider directing the vessels and photographing the vessels from the air, the latter to show their position and size relative to the slick.

- It is difficult to adequately observe oil on the water surface from a boat, dock, or shoreline.
- Spill surveillance is best accomplished through the use of helicopters or small planes; helicopters are preferred due to their superior visibility and maneuverability.
- If fixed-wing planes are to be used, high-wing types provide better visibility than low-wing types.
- All observations should be documented in writing and with photographs and/or videotapes.
- Describe the approximate dimensions of the oil slick based on available reference points (i.e., vessel, shoreline features, facilities); use the aircraft or vessel to traverse the length and width of the slick while timing each pass; calculate the approximate size and area of the slick by multiplying speed and time.
- Record aerial observations on detailed maps, such as topographic maps.
- In the event of reduced visibility, such as dense fog or cloud cover, boats may have to be used to patrol the area and to document the location and movements of the spill; however, this method may not be safe if the spill involves a highly flammable product.
- Surveillance also is required during spill response operations to gauge the effectiveness of response operations; to assist in locating skimmers; and to assess the spill's size, movement, and impact.
- A Spill Surveillance Checklist is provided in **FIGURE 2.1-3**.

FIGURE 2.1-3 - SPILL SURVEILLANCE CHECKLIST

Record your observations of spilled oil either in a notebook or directly on a chart of the area under observation. This checklist is an aid for organizing your observations.

General Information	
Date:	Tidal or river stage (flood, ebb, slack, low water):
Time:	On-scene weather (wind, sea state, visibility):
Incident name:	Platform (helicopter, fixed-wing aircraft, boat, shore):
Observer's name:	Flight path/trackline:
Observer's affiliation:	Altitude where observation taken:
Location of source (if known):	Areas not observed (i.e., foggy locations, restricted air or land spaces, shallow water areas):
Oil Observations	

Slick location(s):	Color and appearance (i.e., rainbow, dull or silver sheen, black or brown in color or mousse):
Slick dimensions:	Percent coverage:
Orientation of slick(s):	Is oil recoverable (Y/N)?:
Distribution of oil (i.e., windrows, streamers, pancakes or patches):	

Considerations
• During surveillance, travel beyond known impacted areas to check for additional oil spill sites. • Include the name and phone number of the person making the observations. • Clearly describe the locations where oil is observed and the areas where no oil has been seen.

Other Observations

Response Operations
Equipment deployment (general locations where equipment is working and whether the work is done in the heaviest concentration of oil):
Boom deployment (general locations of boom, whether the boom contains oil, and whether the oil entrains under the boom):

FIGURE 2.1-3 - SPILL SURVEILLANCE CHECKLIST, CONTINUED

Record your observations of spilled oil either in a notebook or directly on a chart of the area under observation. This checklist is an aid for organizing your observations.

Environmental Observations
Locations of convergence lines, terrain, and sediment plumes:
Locations of debris and other features that could be mistaken for oil:

Wildlife present in area (locations and approximate numbers):
Spill Sketch

2.1.3 Spill Volume Estimating

Early in a spill response, estimation of spill volume is required in order to:

- Report to agencies.
- Determine liquid recovery requirements.
- Determine personnel and equipment requirements.
- Estimate disposal and interim storage requirements.

Some rapid methods to estimate spill size are:

- Transfer operations: Multiply the pumping rate by the elapsed time that the leak was in

progress, plus the drainage volume of the line between the two closest valves or isolation points (volume loss = pump rate [bbls/min] x elapsed time [min] + line contents [bbl]).

- Tank overfills: Elapsed time multiplied by the pumping rate.
- Visual assessment of the surface area and thickness (**FIGURE 2.1-4**); the method may yield unreliable results because:
    - Interpretation of sheen color varies with different observers.
    - Appearance of a slick varies depending upon amount of available sunlight, sea-state, and viewing angle.
    - Different products may behave differently, depending upon their properties.

FIGURE 2.1-4 - SPILL ESTIMATION FACTORS

OIL THICKNESS ESTIMATIONS				
Standard Form	**Approx. Film Thickness**		**Approx. Quantity of Oil in Film**	
	inches	**mm**	**gallons/mile^2**	**liters/km^2**
Barely Visible	0.0000015	0.00004	25	44
Silvery	0.000003	0.00008	50	88
Slightly colored	0.000006	0.00015	100	179
Brightly colored	0.000012	0.0003	200	351
Dull	0.00004	0.001	666	1,167
Dark	0.00008	0.002	1,332	2,237
Thickness of light oils: 0.0010 inches to 0.00010 inches				
Thickness of heavy oils: 0.10 inches to 0.010 inches				

NOAA, 09/2000

2.1.4 Estimating Spill Trajectories

In some cases, oil spill trajectories should be estimated in order to predict direction and speed of the slick movement. Trajectory calculations provide an estimate of where oil slicks may impact shorelines and other sensitive areas, and also provide an estimate of the most effective location in which to mobilize spill response resources for protection, containment, and recovery.

Oil spill trajectories can be estimated using vector addition or with computer programs. Hand calculations typically utilize the following assumptions:

- Oil moves at approximately the same direction and speed as the water currents, unless the winds are strong.
- Wind speed can be multiplied by 0.034 to determine the effect of winds on speed and direction of spill movement.

- The combined effects of winds and currents can be added to estimate spill movement speed and direction.

More sophisticated predictions can be obtained from computer programs. Oil spill trajectory services can be obtained from:

- National Oceanic and Atmospheric Administration (NOAA) through the Federal On-Scene Commander (FOSC)
- Private consulting firms

2.1.5 Initial Containment Actions

Initial containment actions will focus on utilizing containment on-site in the most effective manner to:

- Prevent the oil from impacting water, thereby reducing the surface area and the shoreline to be cleaned.
- Concentrate the oil (when safe to do so), making physical recovery more efficient.
- Limit the environmental impact to the immediate spill area.

Selection of the appropriate location and method will depend upon:

- Length of time spill occurs before being noticed,
- Amount of spill,
- Area of coverage,
- Environmental factors such as wind speed and direction, and
- Oil's characteristics.

2.1.6 Safety Considerations

- Containment actions should not be conducted during inclement weather or unsafe conditions, such as high winds, fast currents, or unstable terrain.
- Eliminate all ignition sources.
- Avoid contact with the spilled product.
- Use respiratory protection (if trained to do so).
- Ensure that the area remains secure to air/boat/vehicular traffic.

2.2 EVACUATION

EVACUATION CHECKLIST	
TASK	
Request assistance from off-site response organizations; convey Command Post's location. Notify appropriate agencies (if appropriate).	☐
Assemble personnel at predetermined safe location: upwind/up gradient of release (assembly area).	☐
Account for Company and contractor personnel.	☐
Assess casualties (number/type/location).	☐
Determine probable location of missing personnel.	☐
Secure site, establish re-entry point and check-in/check-out procedures.	☐
Develop list of known hazards (confined spaces, electrical hazards, physical hazards, vapors, oxygen deficiency, fire/explosion, etc.).	☐
Monitor situation (weather, vapors, product migration) for significant changes.	☐
Assist in developing a Rescue Plan, if necessary.	☐

2.2 EVACUATION, CONTINUED

EVACUATION FACTORS	
FACTOR	**DESCRIPTION**
Stored material location	• Located in oil storage area • Identified in facility Plot Plan (**APPENDIX C**)
Spilled material hazards	• Hazard is fire/explosion
Water currents, tides, or wave conditions	• The water conditions at the dock should not effect the evacuation required by any incident at the non-transportation related portion of the facility.
Evacuation routes	• Routes are summarized on Evacuation Plan Diagram (**APPENDIX C**) • Criteria for determining safest evacuation routes from facility may include: wind direction, potential exposure to toxins and carcinogens, intense heat, potential for explosion/fire, and blockage of planned route by fire, debris, or released liquid
Alternate evacuation routes	• Alternate routes may exist; refer to Evacuation Plan Diagram (**APPENDIX C**)
Injured personnel transportation	• Emergency vehicles can be mobilized to the facility (**FIGURE 3.1-6**)

Alarm/Notification system location	• The facility does not have an evacuation alarm system. All employees will be notified of required evacuations and preferred routes via hand held radios issued to all operators and by intercom for office personnel.
Community evacuation plans	• Company may request local police, county sheriff, and/or state police assistance (**FIGURE 3.1-6**). Community evacuations are the responsibility of these agencies.
Spill flow direction	• South • Identified in Facility Drainage Diagram (**APPENDIX C**)
Prevailing wind direction and speed	• The prevailing winds at the facility are normally from the east. However, changing in weather condition require that the person directing any evacuation be cognizant of the wind direction and speed. A shift in the wind direction may expose personnel to smoke or fumes. An increase in wind speed may accelerate and spread a fire. • Because wind direction varies with weather conditions, consideration for evacuation routing will depend in part on wind direction
Emergency personnel/response equipment arrival route land/ waterside directions	• Response equipment will arrive at the facility from the east via North Landing Road. Response contractors are instructed to report to the qualified individual or designated field operation personnel from instruction on deployment. • Land: North Landing Road (State Route 165) • Water: North Landing River (Intracoastal Waterway) • Directions to nearest medical facility provided below

2.2 EVACUATION, CONTINUED

EVACUATION FACTORS	
FACTOR	**DESCRIPTION**
Centralized check-in area	• front entrance • Supervisor or designee is responsible for head count
Mitigation Command Center location	• Initial Command Center located at If evacuation of the Terminal is required, the initial mitigation control center will be established at the Terminal Office.

	• Mobile Command Posts may be established as necessary
Facility Shelter Location	• If the preferred evacuation procedure is to shelter in place all personnel will be directed to report to the office buildings of the terminal at which they are located. Once all personnel are accounted for the office windows and doors will be sealed and any outside air source eliminated. (i.e. HVAC make up air) • Not a safe harbor from fires, explosions, vapor clouds, or other significant emergencies; however, may be used for temporary shelter from inclement weather
Directions to nearest medical facility	Directions to The nearest hospital is Virginia Beach General Hospital, located at 1060 First Colonial Road, Virginia Beach, VA approximately 13.2 miles away. Local EMS Services or a commercial ambulance service will transport injured personnel to the hospital. : • 1. Start out going NORTH on NORTH LANDING RD / VA-165 toward HEFFINGTON DR. 2. Turn LEFT onto SALEM RD. 3. Turn RIGHT onto N LANDSTOWN RD. 4. Turn RIGHT onto DAM NECK RD. 5. Turn LEFT onto LONDON BRIDGE EXT. 6. LONDON BRIDGE EXT becomes LONDON BRIDGE RD. 7. Turn SLIGHT RIGHT. 8. Turn RIGHT onto VIRGINIA BEACH BLVD / US-58 E. Continue to follow US-58 E. 9. Turn LEFT onto FIRST COLONIAL RD / VA-408. 10. End at 1060 First Colonial Rd, Virginia Beach, VA 23454-3002

2.3 TORNADO

TORNADO CHECKLIST	
TASK	
Monitor news media reports (**FIGURE 3.1-6**). • Tornado watch means conditions are favorable for tornadoes. • Tornado warning means a tornado has been sighted.	☐
When a tornado warning is issued, immediately notify all personnel on-site. Notify off-site personnel of the situation (Control Center or Regional Management).	☐
Take shelter: • Go to an interior room on the lowest floor.	

• Get under a sturdy piece of furniture or solid structure. • Use your arms to protect head and neck.	☐
Have location personnel report to the designated area.	☐
Account for all personnel on duty.	☐
Look for funnel formations on the ground or in the clouds; listen for a roar that sounds like a jet aircraft or rail traffic.	☐
If the facility is damaged by the tornado, notify Management.	☐
Go to the scene of the incident to evaluate the situation. • Be aware of broken glass and downed power lines. • Assess the area for damaged equipment or product releases. • Check for injuries. • Use caution entering a damaged building.	☐
Update Supervisory Personnel/Management.	☐
Conduct post-emergency evaluation and report.	☐

2.4 FLOOD

FLOOD CHECKLIST	
TASK	
Perform continuous monitoring of the situation by listening to radio and/or television reports (**FIGURE 3.1-6**). • Flash flood watch means flooding is possible. • Flash flood warning means flooding is occurring or is imminent.	☐
Update Supervisory Personnel when flooding is imminent.	☐
Establish an evacuation plan (**SECTION 2.2**).	☐
Take preliminary actions to secure the facility before flooding and mandatory evacuation.	☐
Consider having sandbags brought to sites that could be affected by the flooding.	☐
Consider obtaining portable pumps and hoses from local suppliers or from other petroleum service locations in the area.	☐
Remove product from underground storage tanks (i.e., sumps and separators, if applicable) and replace with water to prevent them from floating out of the ground.	☐
If additional new product is available fill each tank to the minimum level necessary to prevent buoyancy in the event of flooding (Rule of thumb is 30% of	

the safe fill height). If additional product is not available, transfer appropriate product among tanks to prevent buoyance. If minimum levels cannot be reached through product transfer, add water bottoms.	☐
Plug all rack drains and facility drains connected to the sump.	☐
Empty all dikes of water.	☐
Ensure that tank roof drains are working properly.	☐
Anchor all bulk additive tanks, fuel barrels, empty drums, and propane tanks (if applicable).	☐
Notify Supervisory Personnel/Management that the facility will be closed. Customer should be notified.	☐
Back up computer files.	☐
Remove assets such as files, computers, spare parts, and vehicles.	☐
Shut off high voltage power and natural gas lines.	☐
Close all valves on product and additive storage tanks.	☐
Before evacuation, know where all the employees will be residing and obtain phone numbers so they can be contacted if additional emergencies occur.	☐

2.4 FLOOD, CONTINUED

FLOOD CHECKLIST	
TASK	
Conduct a post-emergency evacuation and report.	☐
Maintain hazards awareness: • Structural damage; • Equipment damage and product releases; • Downed power lines; • Leaking natural gas, water, and sewer lines; • Poisonous snakes and other wildlife sheltering in structures, vehicles, and furniture; and • Avoid direct contact with flood water, mud, and animal carcasses.	☐

2.5 MEDICAL

MEDICAL CHECKLIST	
TASK	
Summon Emergency Medical Services (EMS) to the scene (**FIGURE 3.1-6**).	☐

Do not move the patient unless a situation (such as a fire) threatens the patient's life.	☐
If trained, provide appropriate first aid for both injury and shock until the EMS arrives at the scene.	☐
As the situation warrants, try to stop the bleeding and keep the patient breathing until the EMS arrives at the scene.	☐
The rescuer's role includes: • Removing the patient from any situation threatening patient's life or the lives of rescuers. • Correcting life-threatening problems and immobilizing injured parts before transporting the patient. • Transporting the patient in a way that minimizes further damage to injured parts. • Administering essential life support while the patient is being transported. • Observing and protecting the patient until medical staff can take over. • Administering care as indicated or instructed.	☐
Notify Supervisory Personnel and/or Regional Management.	☐
Notify victim's immediate family.	☐
Complete follow-up and written reporting, as the situation demands.	☐

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2.7 FIRE AND/OR EXPLOSION

Your first consideration is always the safety of people in the immediate area, including your own.

The first responder's initial objective is site management.

FIRE AND/OR EXPLOSION CHECKLIST	
TASK	
At a manned facility	
Evaluate the situation; approach cautiously from upwind; do not rush in.	☐
Notify the local police and fire departments (Dial 911).	☐
Sound the facility alarm and push the red emergency shutdown switch (if equipped).	
Notify Qualified Individual and Operations Control (if applicable).	☐
Appropriately trained personnel may attempt to extinguish the fire if it is in the incipient (early) stage and **if it can be done safely**.	☐
In the event the fire is too large for an individual to fight alone, the individual sounding the alarm or making the phone call should stand by at a safe distance to direct the fire department to the scene of the fire and keep personnel and vehicles from entering the danger area.	☐
Alert all Facility areas of the exact location and extent of the fire.	☐
Instruct all drivers to discontinue loading, disconnect loading arms, and tell all drivers present to stand by the trucks (if safe to do so) and wait for instructions to	☐

remove same to safe area.	
Shut off all pumps.	
If the fire/explosion is a result of a pipe rupture, isolate product release by closing valves.	☐
If product is being received from pipelines, notify the appropriate pipeline personnel of the fire and request that the pipeline be shut down. The tank which is receiving product from the pipeline must not be closed until assurance is received that the pipeline is shut down, unless that tank is on fire.	
After confirmation has been received that pipelines have been shut down, close the pipeline header valves.	☐
Undertake basic site control: • Make an assessment of hazards. • Isolate the area. • Keep people away from the scene and outside the safety perimeter. • Establish safety zones and escape routes.	☐
Respond to the fire: • Establish a Command Post and lines of communication. • Maintain site control. • Establish Incident Command/Unified Command as necessary (**SECTION 4.4**).	☐
Call in additional resources if on-scene personnel and equipment are inadequate to handle the emergency.	☐
Conduct a post-emergency evaluation and report.	☐

2.7 FIRE AND/OR EXPLOSION, CONTINUED

Your first consideration is always the safety of people in the immediate area, including your own.

The first responder's initial objective is site management.

FIRE AND/OR EXPLOSION CHECKLIST, CONTINUED	
TASK	
At an unmanned facility	
Handle the call.	☐
Notify the local police and fire departments.	☐
Notify Qualified Individual and Operations Control.	☐

Go to the incident scene to evaluate the situation; approach cautiously from upwind; do not rush in.	☐
Undertake basic site control: • Make an assessment of hazards. • Isolate the area. • Keep people away from the scene and outside the safety perimeter. • Establish safety zones and escape routes.	☐
If roads or railroads are in the affected area, assist the sheriff or local emergency officials with halting traffic.	☐
Update the next level manager.	☐
If the fire/explosion is a result of a pipe rupture, isolate the product release by closing valves.	☐
Respond to the fire: • Establish a Command Post and lines of communication. • Maintain site control. • Establish Incident Command/Unified Command as necessary (**SECTION 4.4**).	☐
Call in additional resources if on-scene personnel and equipment are inadequate to handle the emergency.	☐
Conduct a post-emergency evaluation and report.	☐

2.8 VAPOR CLOUD

VAPOR CLOUD CHECKLIST	
TASK	
The person who discovers the vapor cloud will notify the facility management on duty and vacate the area.	☐
Remember: the only proper action in the presence of a vapor cloud is to get away from it. Do not shut off electrical equipment.	☐
All personnel will report to the evacuation muster point for roll call and further instructions.	☐
After all personnel have been accounted for, the Facility Management, the Facility Supervisor, or a Facility Operator will initiate the following actions as deemed necessary: • Shut down pipeline. • Evacuate adjacent property.	☐

• Only the fire department will be permitted to enter the Facility.	
Contact the appropriate agencies and potentially affected neighbors (refer to **FIGURE 3.1-6**).	☐

2.9 THIRD PARTY VESSEL OWNERS / OPERATORS

It is the responsibility of third party vessel owners/operators to have spill contingency plans developed and in place. In the event of a spill involving a third party vessel at the Facility, it is the responsibility of the vessel owner/operator to immediately respond and mitigate the spill and to coordinate response efforts with the Local Response Team.

If a spill occurs when the vessel (carrying Company cargo) is underway and within the area of the Facility, the Local Response Team will initiate first Company response to assist the vessel in containment and clean up.

SECTION 3 Last Revised: March 2009

NOTIFICATIONS / TELEPHONE NUMBERS

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3.1 Emergency Information and Notification Procedures

Figure 3.1-1 - Emergency Notification Flow Chart

Figure 3.1-2 - First Report of Incident

Figure 3.1-3 - Leak Accident Report Form

Figure 3.1-4 - Release Notification Data Sheet

Figure 3.1-5 - Internal Notifications and Telephone Numbers

Figure 3.1-6 - External Notifications and Telephone Numbers

3.1 EMERGENCY INFORMATION AND NOTIFICATION PROCEDURES

The notification sequence for a spill is as follows:

- Facility Manager will identify and control the source of a spill, if safe to do so, then will notify the Qualified Individual.
- The Qualified Individual will conduct notifications as illustrated in the Notification Flow Chart (**FIGURE 3.1-1**).

The priority of actions and response procedures will depend upon actual circumstances and will be determined by the Incident Commander.

This section also contains the following:

- FIGURE 3.1-2 provides a First Report of Incident. This form is utilized for initial notification.
- FIGURE 3.1-3 provides a Leak Accident Report Form. This form is utilized for pipeline summary of documentation.
- FIGURE 3.1-4 provides a Release Notification Data Sheet. This form is utilized for notification summary and documentation.

The Company has attempted to make the following arrangements, as appropriate for the type of hazardous waste handled at the terminal and the potential need for the services of these organizations:

- Familiarize police, fire departments, and emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to roads inside the facility, and possible evacuation routes;
- Where more than one police and fire department might respond to an emergency, agreements designating primary emergency authority to a specific police and a specific fire department, and agreements with any others to provide support to the primary emergency authority;
- Agreements with State emergency response teams, emergency response contractors, and equipment suppliers; and
- Arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illnesses which could result from fires, explosions, or releases at the facility.

FIGURE 3.1-1 - EMERGENCY NOTIFICATION FLOW CHART

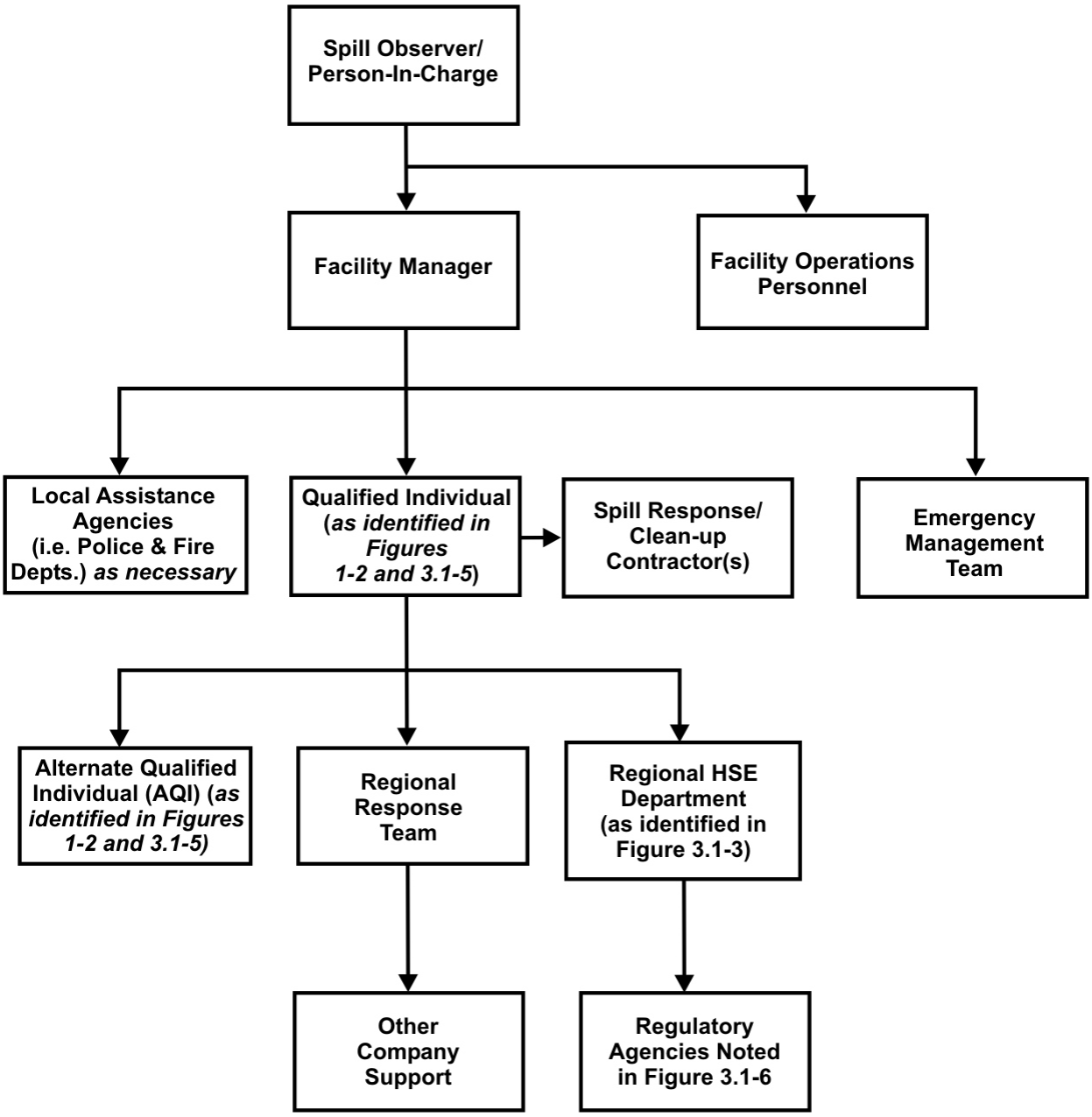


FIGURE 3.1-2 - FIRST REPORT OF INCIDENT

Original to File; Copies To: Terminal Mgr or Ops Mgr & LP HSE Group

I. Location: _____ Time: _____ Date: _____				
II. INCIDENT TYPE:				
A. Safety				**B. Environmental**
☐ Non-injury	☐ Property/Equipment Damage			☐ Spill
☐ Fire	☐ Other ____			☐ Air Upset
☐ Injury	☐ First Aid	☐ Off-site Treatment		☐ Discharge Event
☐ Near Miss	☐ Employee	☐ Contractor		☐ Other

For Safety and Environmental Departments Use Only

☐ Recordable Injury ☐ Chemical Exposure ☐ Recordable Illness ☐ Reportable to Agency
☐ PSM/RMP ☐ Other
Signature _____ **Date** _____

III. INJURED EMPLOYEE / CONTRACTOR

Name: _____ Social Security: _____
Occupation: _____ Department / Company: _____
Nature of work related injury:
_____
_____
Supervisor's Name:
_____

IV. DESCRIPTION OF INCIDENT: (Use additional sheet(s) if necessary)

Date: _____ Time: _____ Location: _____
Tank Capacity: _____
_____
_____
_____
_____

V. IMMEDIATE ACTION(s) TAKEN : (Use additional sheet(s) if necessary)

_____
_____
_____

VI. Incident Investigation Required ☐ Yes ☐ No

VII. Name of person preparing this report: _____
(Please print)

Signature: _____ Date: _____ Time: _____

Supervisor: _____ Date: _____

FIGURE 3.1-3 - LEAK ACCIDENT REPORT FORM

PL SYSTEM: _____
PL SEGMENT: _____
PRODUCTS ☐ CRUDE ☐

DISTRIBUTION:

REPORT INFORMATION: _____

Original - PIPELINE SAFETY ☐	
NOTE - Copy to the following as needed:	
MGR - ☐	SUP - ☐
ENG - ☐	ROW - ☐
ENV - ☐	☐

RECORDS RETENTION - Permanent
REPORT FREQUENCY - As Required
DUE DATES - Within 5 Days 1 day

PART A - TIME & LOCATION OF LEAK OR ACCIDENT

1. DATE (Month, Day, Year)	2. HOUR ☐ AM ☐ PM	3. LOCATION (State, County, City)

4. PHYSICAL LOCATION (Direction to site, reference highways & towns)
_____
SECTION _____ BLOCK or TOWNSHIP _____ SURVEY or RANGE _____

PART B - ORIGIN OF LIQUID OR VAPOR RELEASE

1. PART OF CARRIER'S SYSTEM INVOLVED:
LINE PIPE ☐ PUMPING STATION ☐ TANK FARM ☐ OTHER (Specify) ☐

2. ITEM INVOLVED:
LINE PIPE ☐ GIRTH WELD ☐ LONGITUDINAL WELD ☐ PUMP ☐ OTHER (Specify) ☐
TANK ☐ WELDED FITTING ☐ BOLTED FITTING ☐ VALVE ☐ OTHER (Specify) ☐

PART C - CAUSE OF LEAK ACCIDENT

CORROSION ☐ FAILED WELD ☐ FAILED PIPE ☐ INCORRECT OPERATION BY OPERATING PERSONNEL ☐
OUTSIDE FORCE DAMAGE ☐ MALFUNCTION OF CONTROL OR RELIEF EQUIP. ☐ OTHER (Specify) ☐

PART D - INJURY OR DEATH

NUMBER OF PERSONS INJURED		NUMBER OF PERSONS KILLED	
CARRIER EMPLOYEES	NON-EMPLOYEES	CARRIER EMPLOYEES	NON-EMPLOYEES

PART E - ESTIMATED DAMAGES & COSTS

1. DAMAGE TO OPERATOR	2. LAND DAMAGE	3. CLEAN-UP COST	4. PRODUCT COST

5. ITEMS DAMAGED (Specify):

PART F - COMMODITY SPILLED OR RELEASED

1. NAME OF COMMODITY SPILLED OR RELEASED:	2. CLASSIFICATION: ☐ Crude Oil ☐ Gas Oil	3. TOTAL LOSS BBLS (_) RECOVERED BBLS NET LOSS BBLS	4. WAS THERE A FIRE? YES NO	5. WAS THERE AN EXPLOSION?

	☐ MVL ☐ Non-MVL		☐ ☐	YES ☐ NO ☐

PART G - OCCURRED IN LINE PIPE (Answer sections G, H, or I ONLY if it specifically applies to the leak or accident)

1. NOMINAL DIAMETER in.	2. WALL THICKNESS in.	3. SPECIFICATION & GRADE:	4. YEAR OF INSTALLATION Before 1970 (Specify Yr.): ☐ After 1970 (Specify Yr.) ☐	5. TYPE OF JOINT: Weld ☐ Flanged ☐ Threaded ☐ Coupled ☐ Other ☐ _____

6. CONFIGURATION AT POINT OF ACCIDENT: Straight ☐ Sag ☐ Overbend ☐ Sidebend ☐	7. PIPE WAS: Coated ☐ Not Coated ☐	8. PIPE WAS: Above Ground ☐ Below Ground ☐

FIGURE 3.1-3 - LEAK ACCIDENT REPORT FORM, CONTINUED

PART G - OCCURRED IN LINE PIPE (Answer sections G, H, or I ONLY if it specifically applies to the leak or accident), Continued

9. COVER (if below ground) in.	10. MAXIMUM OPERATING PRESSURE: psig	11. PRESSURE AT TIME & LOCATION OF ACCIDENT psig	12. SYSTEM PRESSURE TEST YES ☐ NO ☐

13. TEST MEDIUM USED; (If item 12, is Yes) Water ☐ Petroleum ☐ Air ☐	14. DURATION OF TEST hrs.	15. MAXIMUM TEST PRESSURE psig	16. DATE OF LATEST TEST

PART H - CAUSED BY CORROSION

1. LOCATION OF CORROSION EXTERNAL ☐ INTERNAL ☐	2. FACILITY COATED: YES ☐ NO ☐	3. FACILITY UNDER CATHODIC PROTECTION? YES ☐ NO ☐	4. TYPE OF CORROSION: GALVANIC ☐ OTHER ☐

PART I - CAUSED BY OUTSIDE FORCES

1. ☐ DAMAGE BY OPERATOR ☐ DAMAGE BY OPERATOR'S CONTRACTOR ☐ DAMAGE BY OTHERS (Name) _____
☐ DAMAGE BY NATURAL FORCES ☐ Washout ☐ Flood ☐ Subsidence ☐ Landslide ☐ Frostheave
☐ EARTHQUAKE ☐ OTHER (Specify)_____

2. DID EXCAVATOR CALL? YES ☐ NO ☐	3. WAS PIPELINE TEMPORARILY MARKED FOR EXCAVATOR? YES ☐ NO ☐	4. DISTANCE TO NEAREST LINE MARKER: feet

1. DETAILS OF INCIDENT: (Complete description of Cause, Response, Repairs, Affected Area & Land Damages.)

Use back for any additional information

PERSON COMPLETING THIS REPORT (Name):	DATE:

NRC # = 800-424-8802

INITIAL NOTIFICATION OF NRC MUST NOT BE DELAYED PENDING COLLECTION OF ALL INFORMATION.

FIGURE 3.1-4 - RELEASE NOTIFICATION DATA SHEET

(Other versions of this form may be used)

Incident Date:		Incident Time:	
Reporters Name:		Reporter's Company:	
		Reporter's Position:	
Reporters Address:		City / State:	
Reporters Phone:		Zip:	
Name of Person who notified the reporter of the incident:			
It is not necessary to wait for all information before calling NRC. National Response Center 1-800-424-8802			
Were Materials Discharged (please circle one)	Yes	No	
Calling for Responsible Party (please circle one)	Yes	No	
Incident Description			
Facility Name:		Facility Address or driving directions:	
Responsible Party: (Name of company)		Owner's Address:	2330 Loop 1604 West San Antonio, Texas 78248
Facility Contact Name & Title:		Facility Contact Phone No's	Office
			Cell
			Other
Location of Spill:			
Material Released:			
Source or Cause of Discharge:			

Total Quantity Released:		Was surface water impacted by the spill? (yes or no)	
Total Quantity Recovered:		Total quantity into the water:	
Net Loss:		Tank Number (above/below) involved or pipe diameter:	
Container Type (AST/UST):		Tank Capacity (gallons):	

Nearest					

City:		County:		State:	
Weather conditions at time of incident (wind, rain, snow, temperature, etc.):					
Was there a fire or explosion involved?					
Number of Injuries:		Extent of Injuries, if known:			
Number of Deaths:		Numbers Evacuated (if any):			
Was there any damage:	Yes / No / Unknown (please circle one)				
	Estimate Dollars of Damage				
Additional Information:					

Response Actions

Actions taken to correct, control, or mitigate the incident:	

Notifications

Group or Agency		Persons Notified	Date & Time Notified	Notify By:	Incident No.
NRC					
State Agency					
LEPC - County					
Other:					
Other:					
Other:					
HSE Group					

Phone Numbers

	NRC	(800) 424-8802		NMED	(505) 827-9329		RRC	(512) 463-6788
	TERC	(800) 832-8224		ODEQ	(800) 522-0206		NJDEP	(877) 927-6337
	CDPHE	(877) 518-5608		OCC	(918) 367-3396			
	KSDHE	(785) 296-6370 (day)		TGLO	(800) 832-8224		LEPC	
		(785) 296-0614 (night)		OGCC	(303) 894-2100			

FIGURE 3.1-5 - INTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS
Note: Notification Forms can only be printed from the Section File (not available in the Forms Navigator)

*24-Hour Number

FACILITY RESPONSE TEAM		
NAME/TITLE	**PHONE NUMBER**	**RESPONSE TIME (hours)**
Kenneth Seals Terminal Manager **Qualified Individual**	(757) 427-1066 (Office) (b) (6) (757) 717-0918 *(Mobile)	.50
Clifford Bell Terminal Specialist **Qualified Individual**	(757) 427-1066 (Office) (b) (6)	.50
Chaz Lehman Area Terminal Manager **Qualified Individual**	301-599-5951 (Office) 908-487-7492 *(Mobile)	3.5

Refer to **APPENDIX A**, **Figure A.2-3** for personnel training records

FIGURE 3.1-5 - INTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS, CONTINUED
Note: Notification Forms can only be printed from the Section File (not available in the Forms Navigator)

*24-Hour Number

EMERGENCY RESPONSE PERSONNEL AND BUSINESS UNIT NOTIFICATIONS						
NAME/TITLE	**PHONE NUMBER**	**RESPONSE TIME (hours)**	**ICS POSITION**	**RESPONSE TRAINING TYPE[1]**		
				1	**2**	**3**
Chaz Lehman Area Terminal Manager **Qualified Individual**	301-599-5951 (Office) 908-487-7492 *(Mobile)	3.5	Incident Commander	x	x	x
Steve Doyle Senior Manager Environmental & Regulatory Affairs **Qualified Individual**	(856) 579-5063 (Office) (b) (6) (b) (6) (856) 332-2424 *(Mobile)	6	Liaison Officer	x		x
Claire Riggs Regional Public	856-579-5098 (Office) (b) (6)(b) (6)	6	Corporate Communications			x

Affairs Manager	609-504-3607 *(Mobile)					
Dan Villarreal Corporate Security Manager	(210) 918-2253 (Office) (b) (6) (b) (6) (210) 487-9953 *(Mobile)	24	Corporate Security	x		
Tom Blanchard NuStar Port Captain	(856) 224-7401 (Office) (856) 397-0569 *(Mobile)					
Steve Hays VP Planning & Economics	210-918-3591 (Office) 210-241-6893 *(Mobile)					

EMERGENCY RESPONSE TRAINING TYPE[1]

There are three different types of training described below including HAZWOPER, OPA, and Qualified Individual/Incident Command Training. An "x" has been placed in the applicable columns (type 1, 2, or 3) in the table above for the type of training completed by each individual.

TYPE[1]	DESCRIPTION
1	29 CFR 1910.120 HAZWOPER
2	OPA (Training Reference for Oil Spill Response) All Facility Personnel, SMT, QI Components
3	Qualified Individual/Incident Command Training

Note: Refer to **APPENDIX A** for training dates.

FIGURE 3.1-5 - INTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS, CONTINUED

Note: Notification Forms can only be printed from the Section File (not available in the Forms Navigator)

*24-Hour Number

EMERGENCY RESPONSE CONTRACTORS

NAME/TITLE	PHONE NUMBER	RESPONSE TIME (hours)	RESPONSIBILITY DURING RESPONSE ACTION	RESPONSE TRAINING TYPE[1]		
				1	2	3
Moran Environmental	(757)216-8836*	1		x	x	x

Recovery						
Clean Harbors Environmental Services	1-800-645-8265 757-543-9240 ext. 24	1		x	x	x

EMERGENCY RESPONSE TRAINING TYPE[1]	
There are three different types of training described below including HAZWOPER, OPA, and Qualified Individual/Incident Command Training. An "x" has been placed in the applicable columns (type 1, 2, or 3) in the table above for the type of training completed by each individual.	
TYPE[1]	**DESCRIPTION**
1	29 CFR 1910.120 HAZWOPER
2	OPA (Training Reference for Oil Spill Response) All Facility Personnel, SMT, QI Components
3	Qualified Individual/Incident Command Training

Note: Refer to **APPENDIX A** for training dates.

FIGURE 3.1-6 - EXTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS
Note: Notification Forms can only be printed from the Section File (not available in the Forms Navigator)

*24-Hour Number

AFFILIATION	PHONE NUMBER	TIME CONTACTED
Initial		
National Response Center	(800) 424-8802* (202) 267-2675* (202) 267-1322 Fax	
Occupational Safety and Health Administration (OSHA), Washington, DC - IMMEDIATE NOTIFICATION IS REQUIRED - For A FATALITY from a work-related injury, or HOSPITALIZATION of three (3) or more employees as a result of a work related incident.	1-800-321-OSHA (6742) - Emergency	
Recommended		
Federal Agencies		
EPA Region III	(215) 814-9016	
Oceana Naval Air Station (Fuel Farm)	(757) 433-5143	
U.S. Coast Guard (Sector Hampton	(757) 484-8192	

Roads) Portsmouth, VA	(757) 668-5555*	
State Agencies		
U.S. Fish & Wildlife Virginia State Office	804-693-6694 ext. 151	
Virginia Beach Fire Marshall - Virginia Beach,VA	(757) 385-4228	
Virginia Beach SPCA Wildlife Program	757-263-4762	
Virginia Department of Emergency Services - Public Affairs Office	(800) 468-8892 (804) 674-2400	
Virginia Department of Environmental Quality	(757) 518-2077*	
Virginia State Corporation Commission	(804) 351-4400*	
Virginia State Police - Norfolk, VA	(757) 424-6820*	
Local Agencies		
City of Virginia Beach Police Department	(757) 385-5000	
North Landing Bridge	(757) 482-3081	
Virginia Beach LEPC	(757) 385-4228	

FIGURE 3.1-6 - EXTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS , CONTINUED

Note: Notification Forms can only be printed from the Section File (not available in the Forms Navigator)

*24-Hour Number

AFFILIATION	PHONE NUMBER	TIME CONTACTED
Recommended		
Fire Departments		
Virginia Beach Fire Department (Station #3)	(757) 427-4228	
Hospitals		
Virginia Beach General Hospital	(757) 395-8000	
Law Enforcement		
Virginia Beach Police Marine Patrol	(757) 385-5000	

Virginia Beach Sheriff Department	(757) 385-4555	
USCG Classified OSRO's		
Clean Harbors Environmental Services Chesapeake, Virginia	1-800-645-8265 757-543-9240 ext. 24	
Moran Environmental Recovery Norfolk, VA	(757)216-8836*	
Radio Stations		
FM97	(757) 490-9797	
WCMS	(757) 424-3333	
Television Stations		
WKRT (Channel 3)	(757) 446-1000	
WVEC (Channel 13)	(757) 625-1313	
Waste Management		
C&M Industries, Inc.	(757) 543-8775	
Onyx Engineering Inc. Attn: Nathan P.	(716) 754-8231 (716) 754-0211 fax (804) 223-6980 Nathan (804) 233-6974 Nathan fax	
Weather		
National Weather Service	(757) 899-4200	

SECTION 4 Last Revised: January 2009

RESPONSE TEAM ORGANIZATION

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4.1 Description

4.2 Activation Procedures

4.3 Team Member Response Times

4.4 Incident Command System / Unified Command

4.5 Qualified Individual (QI)

4.5.1 Compliance Responsibility

Figure 4.5-1 - Emergency Management Team (EMT) Activation Procedure

Figure 4.5-2 - Emergency Management Team (EMT) Organization Chart

4.6 Emergency Management Team (EMT) Job Descriptions and Guidelines

4.1 DESCRIPTION

The Company has developed its emergency response organization around the Incident Command System (ICS), which provides the structure for effective management of response resources. The Emergency Management Team (EMT) has been created and organized to plan for and manage oil spills and other emergencies.

The Company utilizes a Regional Response Team (RRT) to staff ICS positions during emergencies that exceed the capabilities of the on-site Emergency Management Team. The RRT provides enhanced assimilation with the Unified Command System during significant emergencies. Personnel from the RRT are trained to address Planning, Logistics, Administration/Finance, Information, and Liaison roles.

Job descriptions for each EMT member are provided in **SECTION 4.6**. The EMT will train by participating in exercises as noted in **APPENDIX A**. Refer to **FIGURE 3.1-1** for notification procedures.

4.2 ACTIVATION PROCEDURES

Following initial notification the IC may be able to respond without assistance from the EMT. If the situation requires more resources, additional personnel or management support may be requested from the EMT. The EMT activation procedure is provided in FIGURE 4.5-1.

In the case of a larger emergency, the RRT would be activated by the QI requesting additional resources through the General Manager. The General Manager would activate the RRT to the incident. Depending on the size of the event, the General Manager may request activation of the Corporate Emergency Response Plan (CERP). Activation of the CERP will initiate assistance from corporate personnel to provide additional resources, as needed.

4.3 TEAM MEMBER RESPONSE TIMES

See **FIGURE 3.1-5** for each team member's response time "EPA Facilities only".

4.4 INCIDENT COMMAND SYSTEM / UNIFIED COMMAND

The Incident Command System (ICS) will be used by the Company EMT for spill response. The EMT organization chart is provided in FIGURE 4.5-2. The organization can be expanded or contracted as necessary. If an OSRO or other contractor is used to staff ICS positions for the Spill Management Team, the commitment will be specified in writing.

The Unified Command System (UCS) is the accepted method of organizing key spill management entities within the Incident Command System. The primary entities include:

- Federal On-Scene Coordinator (FOSC)
- State On-Scene Coordinator (SOSC)
- Company Incident Commander

These three people share decision-making authority within the Incident Command System and are each responsible for coordinating other federal, state, and company personnel to form an effective integrated Emergency Management Team. Refer to **SECTION 4.6** for detailed checklists of the EMT roles and responsibilities as well as organizational interfaces with external parties.

4.5 QUALIFIED INDIVIDUAL (QI)

The Qualified Individual (QI) is an English-speaking representative, available on a 24-hour basis, and trained in the responsibilities outlined in this section. The QI has the following responsibilities and authorities as required by the Oil Pollution Act of 1990 (OPA 90):

- The Qualified Individual (QI) is granted full authority to implement the Facility Response Plan (FRP).
- Activate internal alarm and hazard communication systems to notify all appropriate personnel.
- Notify all response personnel and contractors (as needed).
- Identify the character, exact source, amount, and extent of the release and other necessary items needed for notifications.
- Notify and provide information to appropriate federal, state, and local authorities.
- Assess the interaction of the spilled substance with water and/or other substances stored at the facility and notify on-scene response personnel of assessment.
- Assess possible hazards to human health and the environment.
- Assess and implement prompt removal actions.
- Coordinate rescue and response actions.
- Access Company funds to initiate cleanup activities.
- Direct cleanup activities until properly relieved of the responsibility or the incident is terminated.

For further information on Qualified Individual's training, refer to **APPENDIX A**. Phone numbers for Qualified Individuals are provided in **FIGURES 1-2** and **3.1-5**.

4.5.1 Compliance Responsibility

The designated personnel accountable for Oil Spill Prevention are responsible to ensure compliance with all applicable federal, state, and local requirements for handling of solid and liquid wastes during containment and cleanup operations for a discharge event. The contact information for the current Terminal Manager and back-up personnel for the facility is included in **FIGURE 1-2**.

FIGURE 4.5-1 - EMERGENCY MANAGEMENT TEAM (EMT) AND REGIONAL RESPONSE TEAM (RRT) ACTIVATION PROCEDURE

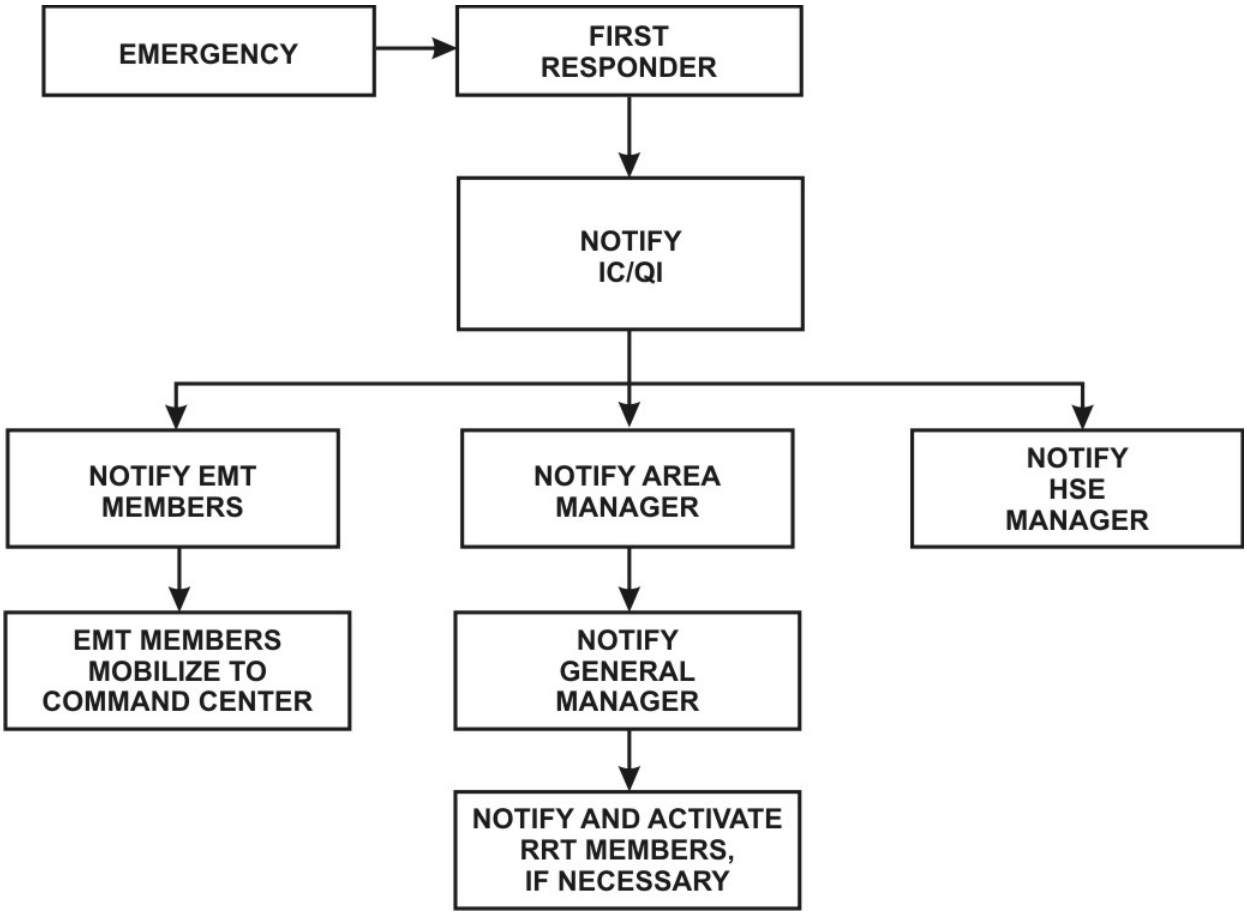
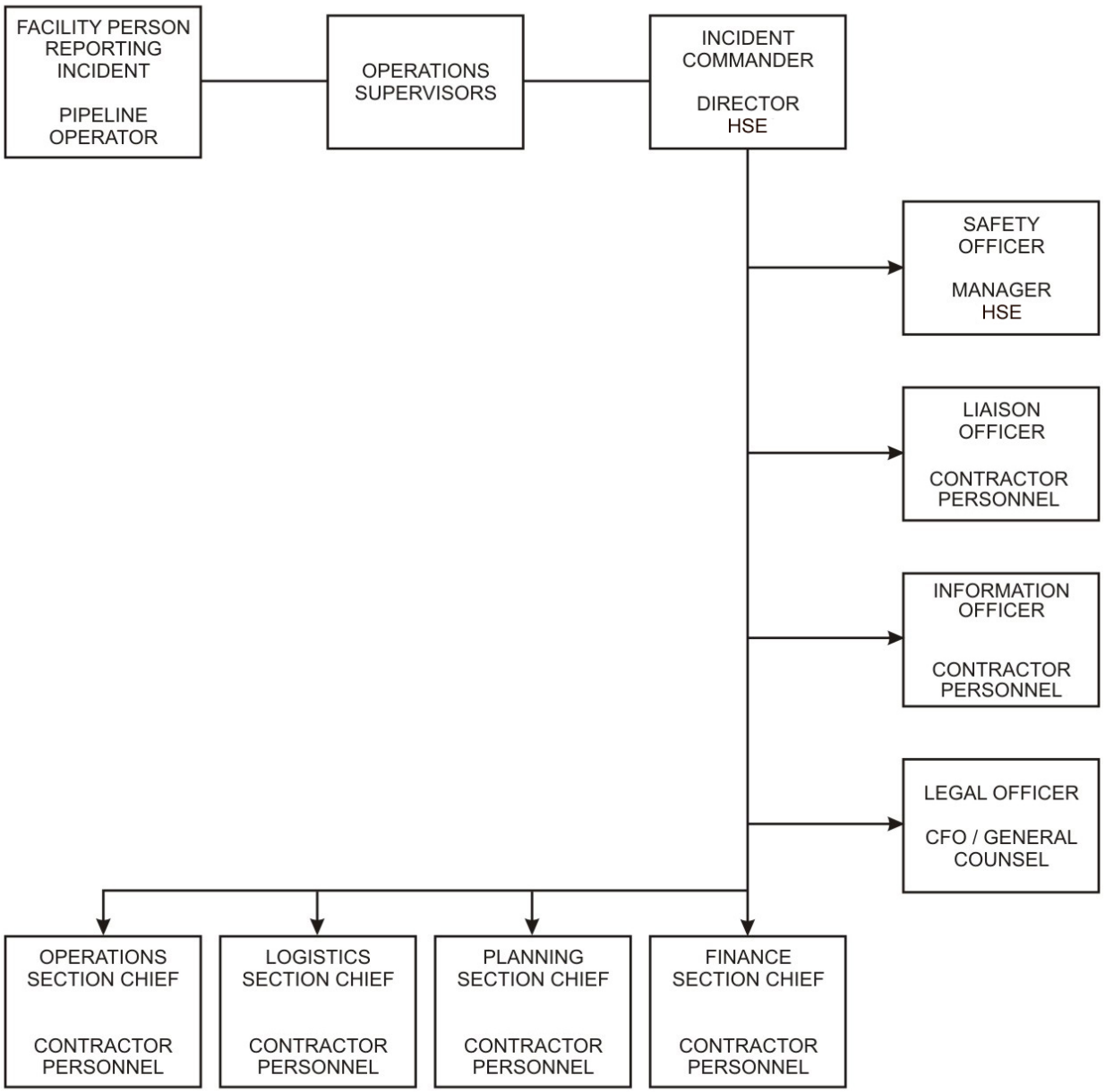


FIGURE 4.5-2 - EMERGENCY MANAGEMENT TEAM (EMT) ORGANIZATION CHART

(Click here for larger view)



4.6 EMERGENCY MANAGEMENT TEAM (EMT) JOB DESCRIPTIONS AND GUIDELINES

The following job descriptions and guidelines are intended to be used as a tool to assist EMT members in their particular positions within the Incident Command System (ICS):

- Incident Commander
- Safety Officer
- Operations Chief
- Planning Chief
- Logistics Chief
- Finance Chief

- Information Officer
- Liaison Officer

INCIDENT COMMANDER

The Incident Commander (IC) manages all activities related to an emergency response and acts as Qualified Individual (QI). As such, the Incident Commander needs to be familiar with the contents of the Facility Response Plan (FRP), Oil Spill Response Plan (OSRP), Emergency Response Action Plan (ERAP), and the Spill Prevention Control and Countermeasure Plan (SPCC). The Incident Commander (IC) must also be familiar with the operation of the Incident Command System (ICS) and the Unified Command Structure (UCS).

The primary goal of this system is to establish and maintain control of the emergency response. If the emergency involves a multi-jurisdictional response (Federal and State), the Unified Command Structure (UCS) should be established. **Realize that the Federal On-Scene Coordinator (FOSC) does have the authority to override the Incident Commander and assume control of the response**. Every effort should be made to establish a collaborative relationship to manage the incident site with the appropriate responding agencies.

As soon as possible but not later than one (1) week following an incident, the Incident Commander shall conduct a critique of the response and follow-up of action items. Participants shall include Operations Control personnel, Company supervisors, and employees and outside agencies involved in the response. An Incident Debriefing Form is provided in **SECTION 8.3**.

Responsibilities:

- ☐ Maintain Activity Log.
- ☐ Establish Incident Command/Unified Command Post.
- ☐ Activate necessary section(s) of the Incident Command System (ICS) to deal with the emergency. Fill out the appropriate section(s) of the Incident Command organization chart and post it at the Incident Command Center.
- ☐ Develop goals and objectives for response.
- ☐ Work with Safety Officer and Planning Section Chief to develop a Site Safety Plan (SSP).
- ☐ Approve, authorize, and distribute Incident Action Plan (IAP) and SSP.
- ☐ Conduct planning meetings and briefings with the section chiefs.
- ☐ As Qualified Individual coordinate actions with Federal On-Scene Coordinator (FOSC) and State On-Scene Coordinator (SOSC).
- ☐ In a multi-jurisdictional response, ensure that all agencies are represented in the ICS.
- ☐ Coordinate and approve media information releases with the FOSC, SOSC, and Public Information Officer (PIO).
- ☐ Keep management informed of developments and progress.
- ☐ Authorize demobilization of resources as they are no longer needed.
- ☐ Complete Standard Incident Debriefing Form (**FIGURE 8.3-1**).

SAFETY OFFICER

The Safety Officer is responsible for assessing and monitoring hazardous and unsafe situations at the emergency response site(s). The Safety Officer must develop measures that assure the safety of the public and response personnel. This involves maintaining an awareness of active and developing situations, ensuring the preparation and implementation of the Site Safety Plan (SSP) and assessing safety issues related to the Incident Action Plans (IAP).

Responsibilities:

- ☐ Maintain Activity Log.
- ☐ Obtain briefing from Incident Commander (IC).
- ☐ Develop, implement, and disseminate SSP with IC and section chiefs.
- ☐ Participate in planning meetings and briefings.
- ☐ Establish safety staff if necessary.
- ☐ Identify emergency contact numbers. Fill out emergency contact chart and post in the Incident Command Center.
- ☐ Conduct safety briefings with all emergency responders.
- ☐ Investigate accidents that have occurred during emergency response.
- ☐ Ensure proper hazard zones are established.
- ☐ Ensure all emergency responders have appropriate level of training.
- ☐ Ensure proper Personal Protective Equipment (PPE) is available and used.
- ☐ Advise Security/Medical Group Leader concerning PPE requirements.
- ☐ Ensure emergency alarms/warning systems are in place as needed.
- ☐ Participate in Post Incident Review (**SECTION 8.3**).

OPERATIONS CHIEF

The Operations Chief is responsible for the management of all operations applicable to the field response and site restoration activities. Operations directs field activities based on the Incident Action Plan (IAP) and Site Safety Plan (SSP).

Responsibilities:

- ☐ Maintain Activity Log.
- ☐ Obtain briefing from Incident Commander (IC).
- ☐ Participate in Incident Command planning meetings and briefings.
- ☐ Conduct planning meetings and briefings for Operations Section.
- ☐ Develop operations portion of IAP.
- ☐ Supervise the implementation of the IAP.

- ☐ Make or approve expedient changes to the IAP.
- ☐ Request resources needed to implement IAP.
- ☐ Approve list of resources to be released.
- ☐ Ensure safe tactical operations.
- ☐ Establish a staging area for personnel and equipment.
- ☐ Confirm first responder actions.
- ☐ Confirm the completion of rescue/evacuation and administering of first aid.
- ☐ Confirm site perimeters have been established.
- ☐ Coordinate activities of public safety responders, contractors, and mutual assistance organizations.
- ☐ Participate in Post Incident Review (**SECTION 8.3**).

PLANNING CHIEF

The Planning Chief is responsible for collecting, evaluating, and disseminating information related to the current and future events of the response effort. The Planning Chief must understand the current situation; predict the future course of events; predict future needs; develop response and cleanup strategies; and review the incident once complete.

The Planning Chief must coordinate activities with the Incident Commander (IC) and other Chiefs to ensure that current and future needs are appropriately handled.

Responsibilities:

- ☐ Maintain Activity Log.
- ☐ Obtain briefing from the IC.
- ☐ Establish and maintain communication with IC and other Section Chiefs.
- ☐ Advise IC on any significant changes of incident status.
- ☐ Conduct planning meetings and briefings for Planning section.
- ☐ Coordinate and provide input to the preparation of the Incident Action Plan (IAP).
- ☐ Participate in Incident Command planning meetings and briefings.
- ☐ In a multi-jurisdictional response, ensure that all agencies are represented in the Planning Section.
- ☐ Coordinate future needs for the emergency response.
- ☐ Determine response personnel needs.
- ☐ Determine personnel needs and request personnel for Planning section.
- ☐ Assign technical specialists (archaeologists, historians, biologists, etc.) where needed.
- ☐ Collect and analyze information on the situation.
- ☐ Assemble information on alternative response and cleanup strategies.
- ☐ Ensure situation status unit has a current organization chart of the Incident

Command Organization.

- ☐ Provide periodic spill movement/migration prediction.
- ☐ Participate in Post Incident Review (**SECTION 8.3**).

LOGISTICS CHIEF

The Logistics Chief is responsible for procuring facilities, services, and material in support of the emergency response effort.

Responsibilities:

- ☐ Maintain Activity Log.
- ☐ Obtain briefing from the Incident Commander (IC).
- ☐ Participate in Incident Command planning meetings and briefings.
- ☐ Conduct planning meetings and briefings for Logistics section.
- ☐ Participate in the preparation of the Incident Action Plan (IAP).
- ☐ Identify service and support requirements for planned operations.
- ☐ Identify sources of supply for identified and potential needs.
- ☐ Advise IC on current service and support requirements.
- ☐ Procure needed materials, equipment and services from sources by means consistent with the timing requirements of the IAP and Operations.
- ☐ Ensure all purchases are documented.
- ☐ Participate in Post Incident Review (**SECTION 8.3**).

FINANCE CHIEF

The Finance Chief is responsible for accounting, legal, right-of-way and risk management functions that support the emergency response effort. In this role, the primary responsibility is supporting the Command Staff and Logistics Section matters pertaining to expenses during and following the emergency response.

Responsibilities:

- ☐ Maintain Activity Log.
- ☐ Obtain briefing from Incident Commander (IC).
- ☐ Participate in Incident Command planning meetings and briefings.
- ☐ Conduct planning meetings and briefings for Finance section.
- ☐ Participate in preparation of the Incident Action Plan (IAP).
- ☐ Participate in planning meetings.
- ☐ Participate in Unified Command System (UCS) as incident warrants.

- ☐ Request assistance of corporate accounting, legal, right-of-way or risk management as needed.
- ☐ Assist with contracting administration.
- ☐ Participate in Post Incident Review (**SECTION 8.3**).

INFORMATION OFFICER

The Information Officer (IO) provides critical contact between the media/public and the emergency responders. The IO is responsible for developing and releasing information about the incident to the news media, incident personnel, appropriate agencies and public. When the response is multi-jurisdictional (involves the federal and state agencies), the IO must coordinate gathering and releasing information with these agencies.

The IO needs to communicate that the Company is conducting an effective response to the emergency. The IO is responsible for communicating the needs and concerns of the public to the Incident Commander (IC).

Responsibilities:

- ☐ Maintain Activity Log.
- ☐ Obtain briefing from IC.
- ☐ Participate in all planning meetings and briefings.
- ☐ Obtain outside information that may be useful to incident planning.
- ☐ Develop goals and objectives regarding public information.
- ☐ Arrange for necessary workspace, materials, telephones and staffing for Public Information Center (PIC).
- ☐ Establish a PIC, ensuring all appropriate agencies participate.
- ☐ Provide a single point of media contact for the IC.
- ☐ Coordinate media access to the response site as approved by the IC.
- ☐ Obtain approval for release of information from the IC.
- ☐ Arrange for meetings between media and emergency responders.
- ☐ Maintain list of all media present.
- ☐ Participate in Post Incident Review (**SECTION 8.3**)

LIAISON OFFICER

If a Unified Command Structure is not established, a Liaison Officer is appointed as the point of contact for personnel assigned to the incident from assisting or cooperating agencies.

Responsibilities:

- ☐ Maintain Activity Log.

- ☐ Obtain briefing from Incident Commander (IC).
- ☐ Participate in planning meetings and briefings.
- ☐ Identify and maintain communications link with agency representatives, assisting, and coordinating agencies.
- ☐ Identify current or potential inter-organizational issues and advise IC as appropriate.
- ☐ Coordinate with Legal Group Leader and Public Information Officer (PIO) regarding information and documents released to government agencies.
- ☐ Participate in Post Incident Review (**SECTION 8.3**).

SECTION 5 Last Revised: May 2008

INCIDENT PLANNING

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5.1 Documentation Procedures

5.2 Incident Action Plan Process and Meetings

Figure 5.2-1 Operational Period Planning Cycle

5.2.1 Incident Occurs / Notifications

5.2.2 Initial Response and Assessment

5.2.3 Unified Command Objectives Meeting

5.2.4 Tactics Meeting

5.2.5 Planning Meeting

5.2.6 Incident Action Plan (IAP) Preparation and Approval

5.2.7 Operations Briefing

5.2.8 Assess Progress

5.2.9 Initial Unified Command Meeting

5.2.10 Command Staff Meeting

5.2.11 Command and General Staff Breakfast / Supper

5.2.12 Business Management Meeting

5.2.13 Agency Representative Meeting

5.2.14 News Briefing

SECTION 5
INCIDENT PLANNING, CONTINUED

5.3 ICS Forms

5.3.1 Incident Briefing ICS 201-OS

5.3.2 Incident Action Plan (IAP) Cover Sheet

5.3.3 Incident Objectives ICS 202-OS

5.3.4 Organization Assignment List ICS 203-OS

5.3.5 Assignment List ICS 204-OS

5.3.6 Communications Plan ICS 205-OS

5.3.7 Medical Plan ICS 206-OS

5.3.8 Incident Status Summary ICS 209-OS

5.3.9 Unit Log ICS 214-OS

5.3.10 Individual Log ICS 214a-OS

5.3.11 Operational Planning Worksheet ICS 215-OS

5.4 Site Safety and Health Plan

5.5 Decontamination Plan

5.6 Disposal Plan

5.7 Incident Security Plan

5.8 Demobilization Plan

5.1 DOCUMENTATION PROCEDURES

Documentation of a spill response provides a historical record, keeps management informed, serves as a legal instrument, and is a means to account for the cleanup costs.

Documentation should begin immediately upon spill notification and continue until termination of all operations. Documentation should include the following:

- Spill origin and characteristics,
- Sampling surveys,
- Photographic surveys,
- Climatological data,
- Labor and equipment accounting, and
- Copies of all logs, contracts, contacts, and plans prepared for the incident.

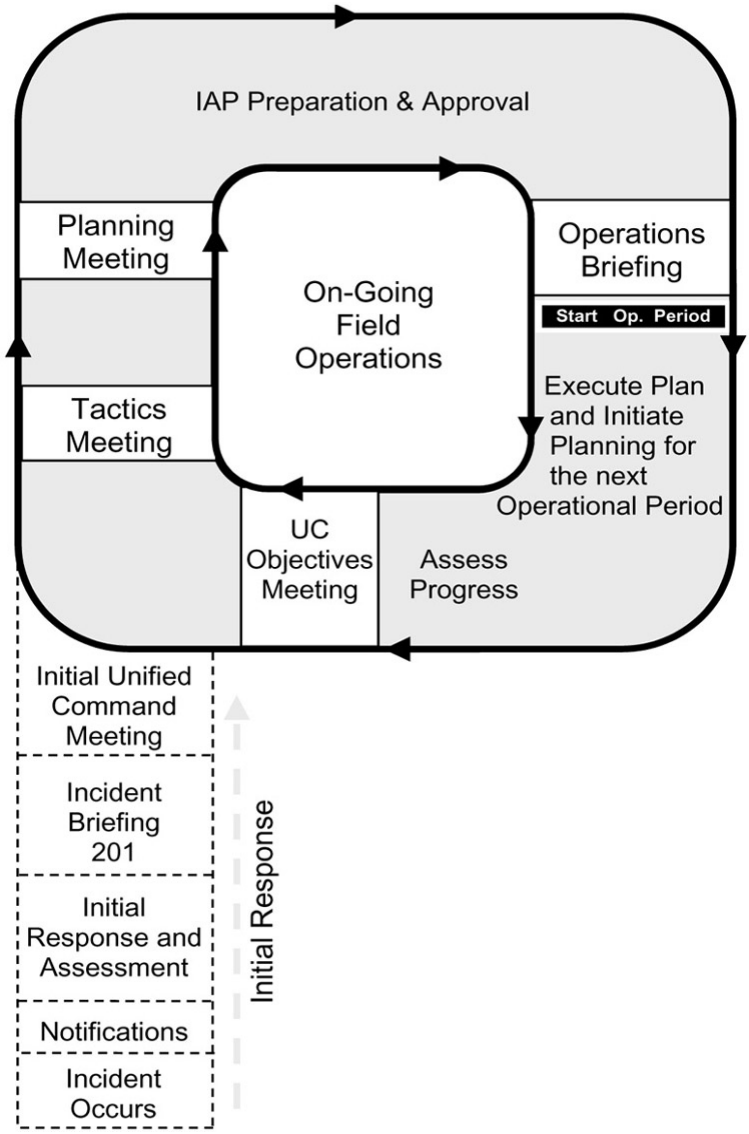
5.2 INCIDENT ACTION PLAN PROCESS AND MEETINGS

The period of INITIAL RESPONSE AND ASSESSMENT occurs in all incidents. Short-term responses (small in scope and/or duration, e.g., few resources working one operational period) often can be coordinated using only ICS 201 Briefings.

Longer-term, more complex responses, will likely require a dedicated Planning Section Chief (PSC) who must arrange for transition into the OPERATIONAL PERIOD PLANNING CYCLE. Certain meetings, briefings, and information-gathering during the Cycle lead to the Incident Action Plan (IAP) that guides operations of the next operational period. Only the meetings and events directly relevant to assembling the IAP are described. The IC/UC specifies the operational periods (e.g., 12-hour shifts, sunrise to sunset, 24-hour shifts etc.).

The SPECIAL PURPOSE meetings are most applicable to larger incidents requiring an OPERATIONAL PERIOD PLANNING CYCLE, but may have utility during INITIAL RESPONSE AND ASSESSMENT. The UNIFIED COMMAND MEETING and other special purpose meetings are briefly noted.

FIGURE 5.2-1 OPERATIONAL PERIOD PLANNING CYCLE



5.2.1 Incident Occurs / Notifications

When an incident occurs, notifications will be made to the appropriate Federal, State, and Local agencies and the initial assessment and response actions will begin.

5.2.2 Initial Response and Assessment

INCIDENT BRIEFING (ICS 201)

During the transfer of command process, an ICS 201 formatted briefing provides the incoming IC/UC with basic information regarding the incident situation and the resources allotted to the incident. Most importantly, it is the de facto Incident Action Plan (IAP) for the initial response and remains in force and continues to develop until the response ends or the Planning Section generates the incident's first IAP. It also is suitable for briefing individuals newly assigned to Command and General Staff, as well as needed assessment briefings for the staff.

When: New IC/UC; staff briefing, as required
Briefer: Current IC/UC
Attendees: Prospective IC/UC; Command, and General Staff, as required

Agenda: Using ICS 201 as an outline, included:

1. Situation (note territory, exposures, safety concerns, etc.; use map/charts).
2. Objectives and priorities.
3. Strategies and tactics.
4. Current organization.
5. Resource assignments.
6. Resources enroute and/or ordered.
7. Facilities established.

OPERATIONAL PERIOD PLANNING CYCLE
(Events most related to assembling IAP)

5.2.3 Unified Command Objectives Meeting

The IC/UC will review/identify and prioritize objectives for the next operational period for the ICS 202 form. Objectives from the previous operational period are reviewed and any new objectives are identified.

When: Prior to Tactics Meeting
Facilitator: UC Member
Attendees: UC Members; Command and General Staff, as appropriate
Agenda:

1. Review/identify objectives for the next operational period (clearly stated and attainable with the resources available, yet flexible enough to allow Operations Section Chief to choose tactics).
2. Review any open agenda items from initial/previous meetings.

5.2.4 Tactics Meeting

This 30-45 minute meeting creates the blueprint for tactical deployment during the next operational period. In preparation for the Tactics Meeting, the Planning Section Chief and Operations Section Chief review the current IAP and situation status information, as provided through the Situation Unit, to assess work progress against IAP objectives. The Operations Section Chief/Planning Section Chief will jointly develop primary and alternate strategies to meet objectives for consideration at the next Planning Meeting.

When: Prior to Planning Meeting
Facilitator: Planning Section Chief
Attendees: Planning Section Chief, Operations Section Chief, Logistics Section Chief, Resources Unit Leader, Situation Unit Leader, and Environmental Unit Leader
Agenda:

1. Review the objectives for the next operational period.
2. Develop strategies (primary and alternatives).
3. Prepare a draft of ICS 215 to identify resources that should be ordered through Logistics.

5.2.5 Planning Meeting

This meeting defines incident objectives, strategies, and tactics and identifies resource needs

for the next operational period. Depending on incident complexity, this meeting should last no longer than 45 minutes. This meeting fine-tunes objectives and priorities, identifies and solves problems, and defines work assignments and responsibilities on a completed ICS Form 215 (Operations Planning Worksheet). Meeting preparations include conducting a Tactics Meeting. Displays in the meeting room should include Objectives (ICS 202) for the next operational period, large sketch maps or charts clearly dated and timed, poster-size Operational Planning Worksheet (ICS 215), current resource inventory prepared by Resources Unit, and current situation status displays prepared by Situation Unit. After the meeting, the ICS 215 is used by the Logistics Section Chief to prepare the off-incident tactical and logistical resource orders, and used by Planning Section Chief to develop IAP assignment lists.

When: After the Tactics Meeting
Facilitator: Planning Section Chief
Attendees: Determined by IC/UC, generally IC/UC, Command Staff, General Staff, Air Operations Section Chief, Resources Unit Leader, Situation Unit Leader, Environmental Unit Leader, and Technical Specialists, as required
Agenda:

5.2.5 Planning Meeting, Continued

1. State incident objectives and policy issues. IC/UC
2. Briefing of situation, critical and sensitive areas, weather/sea forecast, resource status/availability. Planning Section Chief with Situation Unit Leader, Resources Unit Leader
3. State primary and alternative strategies to meet objectives. Operations Section Chief with Planning Section Chief, Logistics Section Chief
4. Designate Branch, Division, Group boundaries and functions, as appropriate; use maps and ICS 215. Operations Section Chief
5. Specify tactics for each Division, note limitations. Operations Section Chief, Situation Unit Leader assist
6. Specify resources needed by Divisions/Groups. Operations Section Chief, with Planning Section Chief, Logistics Section Chief
7. Specify operations facilities and reporting locations (plot on map). Operations Section Chief, Logistics Section Chief assist
8. Develop resources, support, and overhead order(s). Planning Section Chief, Logistics Section Chief
9. Consider support issues and agree on plans: communications, traffic, safety, medical, etc. Logistics Section Chief, Planning Section Chief assist
10. Assisting or cooperating agency and stakeholder group considerations regarding Incident Action Plan. Liaison Officer
11. Safety considerations regarding Incident Action Plan. Safety Officer
12. News media/public considerations regarding Incident Action Plan. Information Officer
13. Finalize, approve Incident Action Plan for next operational period. IC/UC

5.2.6 Incident Action Plan (IAP) Preparation and Approval

Immediately following the Planning Meeting, the attendees prepare their assignments for the IAP to meet the Planning Section Chief deadline for assembling the IAP components. The deadline will be early enough to permit timely IC/UC approval, and duplication of sufficient copies for the Operations Briefing and for overheads.

When: Immediately following Planning Meeting, Planning Section Chief assigns deadline

Facilitator: Planning Section Chief

Common Components:		Responsible to Prepare
1.	Incident Objectives (ICS 202)	[Resources Unit Leader]
2.	Organization List (ICS 203)	[Resources Unit Leader]
3.	Assignment List (ICS 204)	[Resources Unit Leader/Planning Section Chief]
4.	Communications Plan (ICS 205)	[Communications Unit Leader]
5.	Medical Plan (ICS 205)	[Medical Unit Leader]
6.	Incident Map	[Situation Unit Leader]

Optional Components (use as pertinent):

Optional Components (use as pertinent):		Responsible to Prepare
1.	Air Operations Summary (ICS 220)	[Air Operations Branch Director]
2.	Traffic Plan	[Ground Support Unit Leader]
3.	Demobilization Plan	[Demobilization Unit Leader]

5.2.7 Operations Briefing

This less-than-30-minute meeting conveys the IAP for the oncoming shift to the response organization. After this meeting, off-going field supervisors should be interviewed by their reliefs and by Operations Section Chief in order to further confirm or adjust the course of the new shift's IAP. Shifts in tactics may be made by the operations section supervisors. Similarly, a supervisor may reallocate resources within a division or group to adapt to changing conditions.

When: About an hour prior to each shift
Facilitator: Planning Section Chief
Attendees: IC/UC, Command Staff, General Staff, Branch Directors, Division/Group Supervisors, Task Force/Strike Team Leaders (if possible), Unit Leaders, others as appropriate.

Agenda:		Responsible to Present
1.	Review of IC/UC Objectives, changes to IAP.	[Planning Section Chief]
2.	Current response actions and last shift's accomplishments.	[Operations Section Chief]
3.	Weather and sea conditions forecast.	[Situation Unit Leader]
4.	Division/Group and air operations assignment.	[Operations Section Chief]
5.	Trajectory analysis.	[Situation Unit Leader]
6.	Transport, communications, supply updates.	[Logistics Section Chief]
7.	Safety message.	[Safety Officer]
8.	Financial report.	[Finance/Administration Section Chief]

9.	News Media report.	[Information Officer]
10.	Assisting/cooperating organization/agency reports of concern.	[Liaison Officer]
11.	Incident Action Plan endorsement and motivational remarks.	[IC/UC]

5.2.8 Assess Progress

The Operations and Planning Sections will review the incident response progress and make recommendations to the IC/UC in preparation for reviewing/identifying objectives for the next operational period. This feedback/information is gathered from various sources, including Field Observers, responder debriefs, stakeholders, etc.

SPECIAL PURPOSE MEETINGS

5.2.9 Initial Unified Command Meeting

Provides UC officials with an opportunity to discuss and concur on important issues prior to joint incident action planning. The meeting should be brief, and important points documented. Prior to the meeting, parties should review and prepare to address the agenda items. Planning Meeting participants will use the results of this meeting to guide the response efforts.

5.2.9 Initial Unified Command Meeting, Continued

When: When UC is formed, prior to the first operational period Planning Meeting
Facilitator: UC member
Attendees: Only ICs who will comprise UC
Agenda:

1. Identify jurisdictional priorities and objectives.
2. Present jurisdictional limitations, concerns, restrictions.
3. Develop collective set of incident objectives.
4. Establish and agree on acceptable priorities.
5. Adopt an overall strategy to accomplish objectives.
6. Agree on basic organizational structure and size.
7. Designate the best-qualified and acceptable Operations Section Chief.
8. Agree on General Staff personnel designations and planning, logistical, and finance agreements and procedures.
9. Agree on resource ordering procedures.
10. Agree on cost-sharing procedures.
11. Agree on informational matters.
12. Designate a Unified Command spokesperson.

5.2.10 Command Staff Meeting

Coordinate Command Staff functions, responsibilities and objectives. It is scheduled as necessary by the IC/UC. Command Staff (IC/UC, Safety Officer, Liaison Officer, Information Officer) attend.

5.2.11 Command and General Staff Breakfast / Supper

An opportunity for the Command (IC/UC, Safety Officer, Liaison Officer, Information Officer) and General Staff (Operations Section Chief, Planning Section Chief, Logistics Section Chief, Finance/Administration Section Chief) to gather under informal and relaxing conditions to share and update each other on developing issues.

5.2.12 Business Management Meeting

This under-30-minute meeting is for participants to develop and update the operating plan for finance and logistics support. The agenda could include: finance requirements and criteria imposed by contributing organizations, business operating plan for resource procurement and incident funding, cost analysis and financial summary data. Attendees include: Finance/Administration Section Chief, Cost Unit Leader, Logistics Section Chief, Supply Unit Leader, Demobilization Unit Leader. It is generally conducted before the PLANNING MEETING.

5.2.13 Agency Representative Meeting

To update agency representatives and ensure that they can support IAP. Conducted by Liaison Officer, attended by Agency Representatives. Most appropriately held after the PLANNING MEETING in order to announce plans for next operational period, yet allow for changes should the plan's expectations be unattainable by an agency.

5.2.14 News Briefing

To brief the news media and public on the most current and accurate incident facts. Set up by the Information Officer, moderated by an appropriate representative, and featuring selected spokespersons. Spokespersons should be prepared by the Information Officer to address anticipated issues. The briefing should be well planned, organized, and scheduled to meet the media’s needs.

5.3 ICS FORMS

All ICS Forms are available electronically via this Plan's Forms Navigator.

- INCIDENT BRIEFING FORM - ICS 201 (Initial Report Only)

  For use by the Command Staff to gather information on the Emergency Management Team's (EMT) efforts to implement applicable response plans. It is prepared by the initial Incident Commander (IC) for providing documentation of the initial response.

- INCIDENT ACTION PLAN

  For use by the Planning Section to plan each day's response actions. This plan consists of the portions identified on the IAP cover page and must be approved by the Incident Commander, Federal On-Scene Coordinator (FOSC), and State On-Scene Coordinator (SOSC).

  In addition, these Incident Command System (ICS) forms may be found on the U.S. Coast Guard web page: http://www.uscg.mil/pacarea/pm/icsforms/ics.htm

  - **INCIDENT ACTION PLAN (IAP) COVER SHEET**

    For use in presenting initial information, signature approval, and table of contents

of forms contained in the IAP.

- INCIDENT OBJECTIVES - ICS 202

  Describes the basic incident strategy, control objectives, and provides weather, tide and current information, and safety considerations for use during the next operational period.

- **ORGANIZATION ASSIGNMENT LIST - ICS 203**

  Provides ICS personnel with information on the units that are currently activated and the names of personnel staffing each position/unit.

- ASSIGNMENT LIST - ICS 204

  Submits assignments at the level of Division and Groups.

- COMMUNICATIONS PLAN - 205

  Is used to provide, in location, information on all radio frequency assignments down to Division/Group level for each operation period.

- MEDICAL PLAN - ICS 206

  Provides information in incident medical aid stations, transportation services, hospitals, and medical emergency procedures.

5.3 ICS FORMS, CONTINUED

All ICS Forms are available electronically via the Forms Navigator.

- **INCIDENT STATUS SUMMARY - ICS 209**

  Used to inform personnel about the status of response efforts. It is not included in the IAP.

- **UNIT LOG - ICS 214**

  Used to log activities for an entire unit.

- **INDIVIDUAL LOG - ICS 214a**

  Used to log activities for an individual.

5.3.1 Incident Briefing ICS 201-OS

1. Incident Name	2. Prepared By: (name)	

	Date: Time:	INCIDENT BRIEFING ICS 201-OS

3. Map/Sketch

(Include maps drawn here or attached, showing the total area of operations, the incident site/area, overflight results, trajectories, impacted shorelines or other graphics depicting situational and response status)

INCIDENT BRIEFING	March, 2000	ICS 201-OS (pg 1 of 4)

5.3.1 Incident Briefing ICS 201-OS, Continued

1. Incident Name	2. Prepared By: (name) Date: Time:	INCIDENT BRIEFING ICS 201-OS

4. Initial Incident Objectives

5. Summary of Current Actions

Time	Action/Note

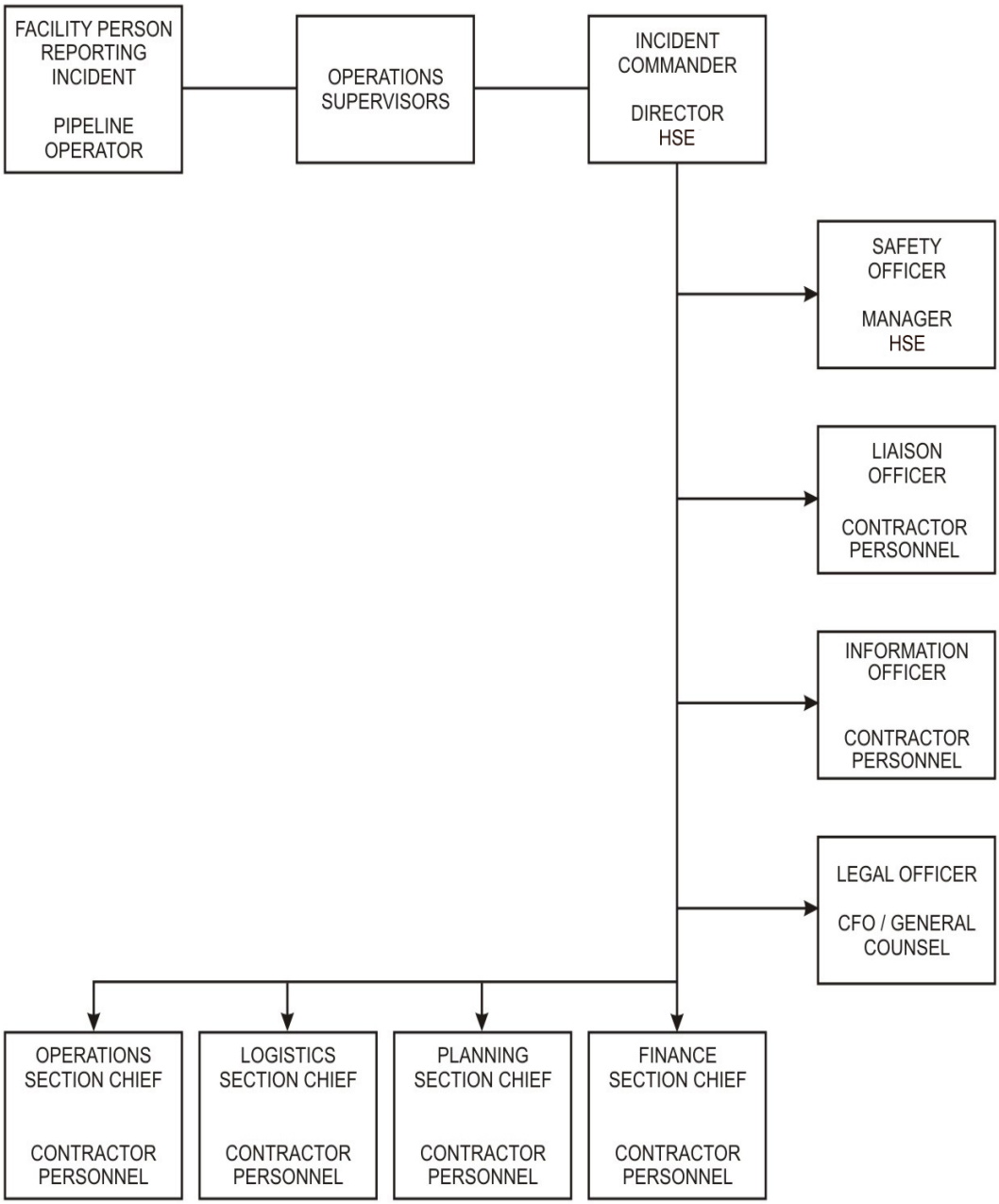
INCIDENT BRIEFING	March, 2000	ICS 201-OS (pg 2 of 4)

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5.3.1 Incident Briefing ICS 201-OS, Continued

1. Incident Name	2. Prepared By: (name) Date: Time:	INCIDENT BRIEFING ICS 201-OS

6. Current Organization



INCIDENT BRIEFING	March, 2000	ICS 201-OS (pg 3 of 4)

5.3.1 Incident Briefing ICS 201-OS, Continued

1. Incident Name	2. Prepared By: (name) Date: Time:	INCIDENT BRIEFING ICS 201-OS

7. Resources Summary

Resources Needed	Time Ordered	Resource Identifier	ETA	On Scene? (X)	Notes: (Location/Assignment/Status)

INCIDENT BRIEFING		March, 2000			ICS 201-OS (pg 4 of 4)

5.3.2 Incident Action Plan (IAP) Cover Sheet

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

3. Approved by:

FOSC

SOSC

IC

INCIDENT ACTION PLAN

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

- ☐ ICS 202-OS (Incident Objectives)
- ☐ ICS 203-OS (Organization Assignment List)
- ☐ ICS 204-OS (Assignment List)
- ☐ ICS 205-OS (Communications Plan)
- ☐ ICS 206-OS (Medical Plan)
- ☐ ICS 209-OS (Incident Status Summary)
- ☐ ICS 214-OS (Unit Log)
- ☐ ICS 214a-OS (Individual Log)
- ☐
- ☐

4. Prepared By: (Planning Section Chief)	**Date/Time:**

IAP COVER SHEET	March, 2000

5.3.3 Incident Objectives ICS 202-OS

1. Incident Name	2. Operational Period (Date/Time) From: To:	INCIDENT OBJECTIVES ICS 202-OS
3. Overall Incident Objective(s)		
4. Objectives for Specified Operational Period		
5. Safety Message for Specified Operational Period Approved Site Safety Plan Located at:		
6. Weather: See Attached Weather Sheet		
7. Tides/Currents: See Attached Tide/Current Data		
8. Time of Sunrise:	**Time of Sunset:**	
9. Attachments (check if attached) ☐ Organization List (ICS 203-OS) ☐ Assignment List (ICS 204-OS) ☐ Communications Plan (ICS 205-OS) ☐ Medical Plan (ICS 206-OS) ☐ Weather		

10. Prepared By: (Planning Section Chief)	**Date/Time:**

INCIDENT OBJECTIVES March, 2000 ICS 202-OS

5.3.4 Organization Assignment List ICS 203-OS

1. Incident Name	2. Operational Period (Date/Time) From: To:	ORGANIZATION ASSIGNMENT LIST ICS 203-OS

3. Incident Commander and Staff

	Primary	Deputy
Federal:		
State:		
IC:		

Safety Officer :

Information Officer:

Liaison Officer:

4. Agency Representatives

Agency	Name

5. Planning Section

Chief
Deputy
Resources Unit
Situation Unit
Environmental Unit
Documentation Unit
Demobilization Unit
Technical Specialists

6. Logistics Section

Chief
Deputy
Time Unit
Procurement Unit
Compensation Unit
Cost Unit

a. Support Branch

Director
Supply Unit

7. Operations Section

Chief
Deputy

a. Branch I - Division/Groups

Branch Director
Deputy
Division / Group
Division / Group
Division / Group
Division / Group
Division / Group

b. Branch II - Division/Groups

Branch Director
Deputy
Division / Group
Division / Group
Division / Group
Division / Group
Division / Group

c. Branch III - Division/Groups

Branch Director
Deputy
Division / Group
Division / Group
Division / Group
Division / Group
Division / Group

d. Air Operations Branch

Air Operations Br. Dir.
Air Tactical Supervisor
Air Support Supervisor
Helicopter Coordinator
Fixed-wing Coordinator

8. Finance Section

Facilities Unit		Chief	
Transportation Unit		Deputy	
Vessel Support Unit		Time Unit	
Ground Support Unit		Procurement Unit	
b. Service Branch		Compensation Unit	
Director		Cost Unit	
Communications Unit			
Medical Unit			
Food Unit			

9. Prepared by: (Resources Unit)	Date/Time	
ORGANIZATION ASSIGNMENT LIST	March, 2000	ICS 203-OS

5.3.5 Assignment List ICS 204-OS

1. Incident Name	2. Operational Period (Date/Time) From: To:	ASSIGNMENT LIST ICS 204-OS
3. Branch	4. Division/Group	

5. Operations Personnel	**Name**	**Affiliation**	**Contact # (s)**
Operations Section Chief:			
Branch Director:			
Division/Croup Supervisor:			

6. Resources Assigned This Period	"X" indicates 204a attachment with special instructions			
Strike Team/Task Force/ Resource Identifier	**Leader**	**Contact Info. #**	**# of Persons**	**Notes/Remarks**

7. Assignments

8. Special Instruction for Division/Group

9. Communications (radio and/or phone contact numbers needed for this assignment)			
Name/Function	**Radio: Freq./System/ Channel**	**Phone**	**Pager**
Emergency Communications			
Medical	Evacuation	Other	
10. Prepared By (Resources Unit Leader)	Date/Time	**11. Approved By** (Planning Section Chief)	Date/Time
ASSIGNMENT LIST	June, 2000		ICS 204-OS

5.3.6 Communications Plan ICS 205-OS

1. Incident Name	2. Operational Period (Date/Time) From: To:	COMMUNICATIONS PLAN ICS 205-OS

3. Basic Radio Channel Use

SYSTEM/CACHE	CHANNEL	FUNCTION	FREQUENCY	ASSIGNMENT	REMARKS

4. Prepared By (Communications Unit)	Date/Time

COMMUNICATIONS PLAN	March, 2000	ICS 205-OS

5.3.7 Medical Plan ICS 206-OS

1. Incident Name	2. Operational Period (Date/Time) From: To:	MEDICAL PLAN ICS 206-OS

3. Medical Aid Stations

Name	Location	Contact #	Paramedics On Site (Y/N)

4. Transportation

Ambulance Service	Address	Contact #	Paramedics On Board (Y/N)

5. Hospitals

Hospital Name	Address	Contact #	Travel Time		Burn Ctr?	Heli-Pad?
			Air	Ground		

6. Special Medical Emergency Procedures

7. Prepared By (Medical Unit Leader)	Date/Time	8. Reviewed By (Safety Officer)	Date/Time

MEDICAL PLAN March, 2000 ICS 206-OS

5.3.8 Incident Status Summary ICS 209-OS

1. Incident Name	**2. Period Covered By Report** From: To:	Time of Report	INCIDENT STATUS SUMMARY ICS 209-OS

3. Spill Status (Estimated, in Barrels)	[OPS/EUL/SSC]
Source Status:	Remaining Potential (bbl):
	Rate of Spillage (bbl/hr):

Secured	☐	Unsecured	☐

	Since Last Report	Total
Volume Spilled		
Mass Balance/Oil Budget		
Recovered Oil		
Evaporation		
Natural Dispersion		
Chemical Dispersion		
Burned		
Floating, Contained		
Floating, Uncontained		
Onshore		
Total Spilled Oil Accounted For:		

4. Waste Management (Estimated)	**[OPS/Disposal]**		
	Recovered	Stored	Disposed
Oil (bbl)			
Oily Liquids (bbl)			
Liquids (bbl)			

7. Safety Status	[Safety Officer]
Since Last Report	Total
Responder Injury	
Public Injury	

8. Equipment Resources			[RUL]	
Description	Ordered	Available / Staged	Assigned	Out of Service
Spill Resp. Vsls				
Fishing Vessels				
Tugs				
Barges				
Other Vessels				
Skimmers				
Boom (ft.)				
Sbnt/Snr Bm. (ft.)				
Vacuum Trucks				
Helicopters				
Fixed Wing				

Oily Solids (tons)			
Solids (tons)			

5. Shoreline Impacts (Estimated, in miles) **[PSC/EUL/SSC]**

Degree of Oiling	Affected	Cleaned	To Be Cleaned
Light			
Medium			
Heavy			
Total			

6. Wildlife Impacts **[OPS/Wildlife Br.]**

Numbers in ( ) indicate subtotal that are threatened / endangered species.					Died in Facility	
	Captured	Cleaned	Released	DOA	Euth.	Other
Birds						
Mammals						
Reptiles						
Fish						
Total						

9. Personnel Resources **[RUL]**

Description	People in Cmd. Post	People in the Field	Total People On Scene
Federal			
State			
Local			
RP			
Contract Personnel			
Volunteers			
Total Response Personnel From All Organizations:			

10. Special Notes

11. Prepared By (Situation Unit Leader)	Date/Time

INCIDENT STATUS SUMMARY March, 2000 ICS 209-OS

5.3.9 Unit Log ICS 214-OS

1. Incident Name	2. Operational Period (Date / Time) From: To:	UNIT LOG ICS 214-OS
3. Unit Name	4. Unit Leader (Name and ICS Position)	

5. Personnel Assigned

Name	ICS Position	Home Base

6. Activity Log (Continue on Reverse)	
Time	Major Events

7. Prepared by:	Date / Time

UNIT LOG	June 2000	ICS 214-OS

5.3.9 Unit Log ICS 214-OS, Continued

1. Incident Name	2. Operational Period (Date / Time) From: To:	UNIT LOG(Cont) ICS 214-OS
3. Unit Name	4. Unit Leader (Name and ICS Position)	

5. Personnel Assigned		
Name	ICS Position	Home Base

6. Activity Log (Continue on Reverse)	
Time	Major Events

7. Prepared by:	Date / Time

UNIT LOG	June 2000	ICS 214-OS

5.3.10 Individual Log ICS 214a-OS

1. Incident Name	2. Operational Period (Date / Time) From: To:	INDIVIDUAL LOG **ICS 214a-OS**

3. Individual Name	**4. ICS Section**	**5. Assignment / Location**

6. Activity Log	Page	of

TIME	MAJOR EVENTS

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

INDIVIDUAL LOG	June 2000	ICS 214a-OS

5.3.11 Operational Planning Worksheet ICS 215-OS

1. Incident Name	2. Operational Period: (Date / Time) From: To:	OPERATIONAL PLANNING WORKSHEET ICS 215-OS

3. Division / Group or Location	**4. Work Assignments**	**5. Resource / Equipment**					**6. Notes / Remarks**	**7. Reporting Location**	**8. Requested Arrival Time**	**9. "X" here if 204a Needed**
		Resource								
		Req.								☐
		Have								
		Need								
		Req.								☐
		Have								
		Need								
		Req.								☐
		Have								
		Need								
		Req.								☐
		Have								
		Need								
		Req.								☐
		Have								
		Need								
		Req.								☐
		Have								

		Need							
		Req.							
		Have							☐
		Need							
		Req.							
		Have							☐
		Need							
		Req.							
		Have							☐
		Need							
		Req.							
		Have							☐
		Need							
		Req.							
		Have							☐
		Need							
10. Total Resources Required						13. Prepared by:			
11. Total Resources On Hand						Date:		Time:	
12. Total Resources Needed									
OPERATIONAL PLANNING WORKSHEET						June 2000			ICS 215-OS

5.4 SITE SAFETY AND HEALTH PLAN

PLAN REVIEW:		
Incident Safety Officer:		
APPROVALS:		
Incident Commander:		
Operations Officer:		
Haz Mat Division Officer:		
PLAN PREPARED:	DATE:	TIME:
Incident Location:		
Incident Number:		
HAZARDOUS SITUATION:	(Known or suspected; contaminated media; type storage container; type occupancy; obvious leaks, spills, or	

	breaches; physical damage)
RESPONDING AGENCIES:	
Agency:	Name:
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

All government and contractor personnel who enter the exclusion zones or use air purifying respirators must be enrolled in a medical monitoring program.

5.4 SITE SAFETY AND HEALTH PLAN, CONTINUED

GENERAL SAFETY RULES AND EQUIPMENT:

1. There will be no eating, drinking, or smoking in the exclusion zone or the contamination reduction zone.

2. All personnel must pass through the contamination reduction zone to enter or exit the exclusion zone (hot zone).

3. At a minimum, Decontamination Team members must be in one (1) level of protection lower than that of the entry teams.

4. All decontamination equipment and systems must be in place before an entry can be made.

5. Entry team will consist of a minimum of two members with the same number of personnel assigned to a backup team. All entry personnel will adhere to the buddy system.

6. At the end of the incident, or directly after a possible exposure, each entry team member will take a full body shower and launder any personal clothing used at the scene.

7. All breathing air shall be certified as Grade D or better.

8. Where practical, all tools shall be of the nonsparking type.

9. Fire equipment shall be on hand when the situation warrants such support. At a minimum, fire extinguishers shall be available on scene.

10. Since incident evacuation may be necessary if an explosion, fire, or other event occurs; an individual shall be assigned to sound, alert, and notify the responsible command personnel and public officials (if required). The evacuation signal shall be four short blasts on an air horn every 30 seconds until all personnel are known to be evacuated.

11. An adequately stocked Emergency Medical Services (EMS) Unit shall be on-site at all times.

12. The location and telephone number of the nearest medical facility shall be posted and known to all personnel.

GENERAL SAFETY BRIEFING:

Before any incident actions are taken, a briefing from the Command Staff will be accomplished with all personnel present. Personnel will sign a log sheet, attesting to being present at the briefing. Topics discussed should include, but not limited to known and suspected hazards along with the operation's goals and objectives.

5.4 SITE SAFETY AND HEALTH PLAN, CONTINUED

EMERGENCY ACTION CONDITIONS:

Code Green All conditions are normal and incident work may continue.

Code Red All or specific work activities must cease at once due to one of the following:

- Indications of emissions from the incident such as CGI readings of 25% or greater, less than 19.5% oxygen, or one Mr/Hr of ionizing radiation are present.
- Current or projected meteorological data indicates that a probable impact on working conditions could occur.
- If background readings obtained during cessation of activities worsen, reassessment of the findings should be confirmed; actions to lower levels of

contaminant or contingencies for further incident monitoring must take place.

- If this condition exists, incident personnel will immediately notify command staff.

Officials making evacuation/public health decisions will address the need for a public health advisory to potentially affected areas. This is because incident control methods may or may not reduce the source of contamination or threat to the general public.

If needed, a temporary sheltering or evacuation plan should be considered until levels of contamination are reduced or contained to levels deemed safe by all responsible authorities. Confirmation of these levels will be done by generally approved monitoring methods agreed to by the authorities in charge.

Sheltering/Evacuation Plan:
Ordered By:

5.4 SITE SAFETY AND HEALTH PLAN, CONTINUED

LIST OF ACCESS AUTHORIZED PERSONNEL (Outside Agencies):
SPECIALIZED TASK ASSIGNMENTS:
LEVELS OF PROTECTION SELECTED:

Initial Site Survey:	A	B	C	D
Entry Team:	A	B	C	D
Backup Team:	A	B	C	D
Decon Team:	A	B	C	D

Level A - To be selected when the greatest level of skin, respiratory, and eye protection is required.

Level B - The highest level of respiratory protection is necessary but a lesser level of skin protection is needed.

Level C - The concentration(s) and type(s) of airborne substance(s) is known and the criteria for using air purifying respirators are met.

Level D - A work uniform affording minimal protection: used for nuisance contamination only.

SKETCH OR ATTACH PLOT PLAN HERE:

5.4 SITE SAFETY AND HEALTH PLAN, CONTINUED

RESPONSE SAFETY CHECK-OFF SHEET

TYPE OF RESPONSE:	
Highway	Industrial
Railway	Marine
Residential	Other
Specify:	
TYPE OF SAFETY PLAN:	
Federal	State
Local	Other
Specify:	
SUSPECTED CHEMICAL(S) INVOLVED:	
1.	2.
3.	4.
5.	6.
7.	8.
9.	10.

INITIAL LEVEL OF PROTECTION: (If level D you must justify)			
A	B	C	D
INITIAL MEDICAL SCREENING COMPLETE: ☐ Yes ☐ No			
If no, justify:			
In the event of fire or explosion:			
In the event of potential or actual ionizing radiation exposure:			

5.4 SITE SAFETY AND HEALTH PLAN, CONTINUED

In the event migration and contamination beyond the boundaries of the incident:
EMERGENCY SERVICES:
Emergency medical facility:
Ambulance service:
Poison Control Center:
Chemical manufacturer's representative:

EMERGENCY PROCEDURES (in the event of personnel exposure):
EMERGENCY PROCEDURES (in the event of personnel injury):
HAZARD ASSESSMENT:
Attach Hazardous Materials Safety Data Sheets (MSDS), or other reference materials, for chemicals involved to this document.
MONITORING PROCEDURES:
Monitoring the incident to identify concentration of contaminants in all media. List the instruments to be used and what areas to be monitored.
Hot Zone (Excursion Zone)
Warm Zone (Contamination Reduction Zone)
Cold Zone (Support Zone)

5.4 SITE SAFETY AND HEALTH PLAN, CONTINUED

MEDICAL MONITORING: (Procedures to be used to monitor personnel for evidence of personal exposure.)
PERSONNEL POTENTIALLY EXPOSED TO HAZARDOUS MATERIALS:

NAME	POSITION	DATE/TIME

DECONTAMINATION PROCEDURES:
(Contaminated personnel, surfaces, materials, instruments, other equipment.)

DECONTAMINATION SOLUTIONS USED:

DISPOSAL PROCEDURES:

Authorized By:

5.4 SITE SAFETY AND HEALTH PLAN, CONTINUED

POST RESPONSE:

Level of protection used:

A B C D

Rationale:

EQUIPMENT DECONTAMINATION:

	Clothing	SCBA/Resp.	Monitoring
Disposed:			
Cleaned:			
No Action:			

Specify:

TOTAL APPROXIMATE TIME IN HOT ZONE:	Days	Hours
DATE PREPARED:	PREPARED BY:	
Reviewed By:		
Assistance in preparing this safety plan can be obtained from Haz Mat personnel.		

5.4 SITE SAFETY AND HEALTH PLAN, CONTINUED

HEALTH AND SAFETY / RESPONSE PLAN

APPLIES TO SITE:					
DATE:					
PRODUCTS:					(ATTACH MSDS)
SITE CHARACTERIZATION	☐ Marine vessel	☐ Pipeline	☐ Storage facility		
	☐ Truck/Rail car	☐ Other			
Water	☐ Shoreline	☐ Wetlands	☐ Other		
	☐ Rocky	☐ Sandy	☐ Muddy	☐ Other	
	☐ River	☐ Creek	☐ Canal	☐ Bay	☐ Ocean
Land	☐ Mountains	☐ Hills	☐ Brushland	☐ Forest	☐ Grassland
	☐ Other				
Use	☐ Public	☐ Government	☐ Residential	☐ Commercial	
	☐ Recreational	☐ Industrial	☐ Farmland	☐ Other	
Weather	☐ Temp _____Â°F	☐ Wind/Dir. _____ mph		☐ Rain	
	☐ Snow	☐ Ice		☐ Other	
Pathways for Dispersion	☐ Air	☐ Water	☐ Land	☐ Other	
Site Hazards					
☐ Chemical hazards	☐ Boats				
☐ Slips, trips, falls	☐ Helicopters				
☐ Heat stress	☐ Noise				
☐ Cold stress	☐ Pumps, hoses				
☐ Weather	☐ Steam, hot water				
☐ Drowning	☐ Fire/Explosion				
☐ Heavy equipment	☐ Poor visibility				
☐ Drum handling	☐ Motor vehicles				
☐ Wildlife/plants	☐ Confined spaces (see attachment/appendix)				
☐ Hand/power tools	☐ Ionizing radiation				
☐ Lifting	☐ Other				

Air Monitoring			
% LEL	% O_2	PPM Benzene	PPM H_2S
☐ Other (specify)			

☐ See attachment - Monitoring Results/Methods

CONTROL MEASURES:
Engineering Controls

☐ Source of release secured ☐ Valve(s) closed ☐ Facility shut down
☐ Site secured
☐ Other

Personal Protective Equipment (PPE) HAZWOPER Coordination with OSRO

☐ PVC suits	☐ PE/TYVEK suits	☐ Respirator
☐ Site secured	☐ PVC gloves	☐ Other
☐ Other	☐ Hard hats	☐ Eye protection

5.4 SITE SAFETY AND HEALTH PLAN, CONTINUED

HEALTH AND SAFETY / RESPONSE PLAN

CONTROL MEASURES (cont'd):
Decontamination

☐ Stations established (see site map)

Sanitation

☐ Facilities provided per OSHA 1910.120(n)

Illumination

☐ Facilities provided per OSHA 1910.120(m)

Medical Surveillance

☐ Facilities provided per OSHA 1910.120(f)

WORK PLAN: (buddy system must be used.)

☐ Booming	☐ Skimmers	☐ Vac. trucks	☐ Pumping	☐ Excavation
☐ Heavy equipment	☐ Sorbent pads	☐ Patching	☐ Hot work	☐ Shoring

☐ Appropriate permits issued
☐ Other (describe):

TRAINING (HAZWOPER training program):
☐ Verified site workers trained per OSHA 1910.120

ORGANIZATION (See Incident Command System chart.):

EMERGENCY PLAN (See site map and Daily Medical Plan - ICS 206.):

(b) (7)(F)

[redacted]

DATE/TIME/PLAN COMPLETED: By:

5.4 SITE SAFETY AND HEALTH PLAN, CONTINUED

SITE DIAGRAM

GENERAL DIAGRAM INSTRUCTIONS

1. Site Diagram should include the following (label the items drawn with corresponding letter):

   A. Sketch with major feature locations (buildings, drainage paths, roads, etc.)
   B. Hazardous substance location
   C. Work zones (exclusion, contamination reduction, support)
   D. Command center and decontamination area
   E. Access and access restrictions
   F. Routes of entry
   G. Wind direction
   H. Emergency evacuation routes
   I. Assembly points
   J. First aid locations
   K. Communication system

5.5 DECONTAMINATION PLAN

Incident Name:	Location:
Effective Date of Plan:	Effective Time Period of Plan:
Spill Location:	Plan Prepared By:

- Work Zones:

  - Support (cold) zone
  - Contamination reduction (warm) zone
  - Exclusion (hot) zone

  These zones are identified by signs, barrier tape or other means. Decontamination is performed in the contamination reduction zone. When responders exit the exclusion zone they must be decontaminated.

  Crews are available to assist in decontamination procedures as needed. The crews must wear appropriate personal protective equipment (PPE), and are responsible for packaging and labeling of contaminated PPE.

- Decontamination Stations:

  Decontamination is performed within the contamination reduction zone, which is appropriately lined to prevent the spread of contaminants. Dikes are installed under the lining to contain runoff.

5.5 DECONTAMINATION PLAN, CONTINUED

Procedures for these stations are as follows:

MAXIMUM MEASURES FOR DECONTAMINATION		
STATION 1	Segregated equipment drop	Deposit equipment used on site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, a cool down station may be set up within this area.
STATION 2	Boot cover and glove wash	Scrub outer boot cover and gloves with decontamination solution or detergent and water.
STATION 3	Boot cover and glove rinse	Rinse off decontamination solution from Station 2 using copious amounts of water.
STATION 4	Tape removal	Remove tape around boots and gloves and deposit in container with plastic liner.
STATION 5	Boot cover removal	Remove boot covers and deposit in containers with plastic liner.
STATION 6	Outer glove removal	Remove outer gloves and deposit in container with plastic liner.
STATION 7	Suit and boot wash	Wash splash suit, gloves, and safety boots. Scrub with long-handled scrub brush and decontamination solution.
STATION 8	Suit, boot, and glove rinse	Rinse off decontamination solution using water. Repeat as many times as necessary.
STATION 9	Canister or mask change	If worker leaves exclusion zone to change canister or this is the last step in the decontamination procedure; worker's canister is exchanged, new outer gloves and boot covers are donned, joints are taped, and the worker returns to duty.
STATION 10	Safety boot removal	Remove safety boots and deposit in container with plastic liner.
STATION 11	Splash suit removal	With assistance of helper, remove splash suit. Deposit in container with plastic liner.
STATION 12	Inner glove wash	Wash inner gloves with decontamination solution.
STATION 13	Inner glove rinse	Rinse inner gloves with water.
STATION 14	Face piece removal	Remove face piece. Deposit in container with plastic liner. Avoid touching face with fingers.
STATION 15	Inner glove removal	Remove inner gloves and deposit in lined container.
STATION 16	Inner clothing removal	Remove clothing soaked with perspiration and place in lined container. Do not wear inner clothing off-site since there is a possibility that small amounts of contamination might have been transferred in removing the protective suit.

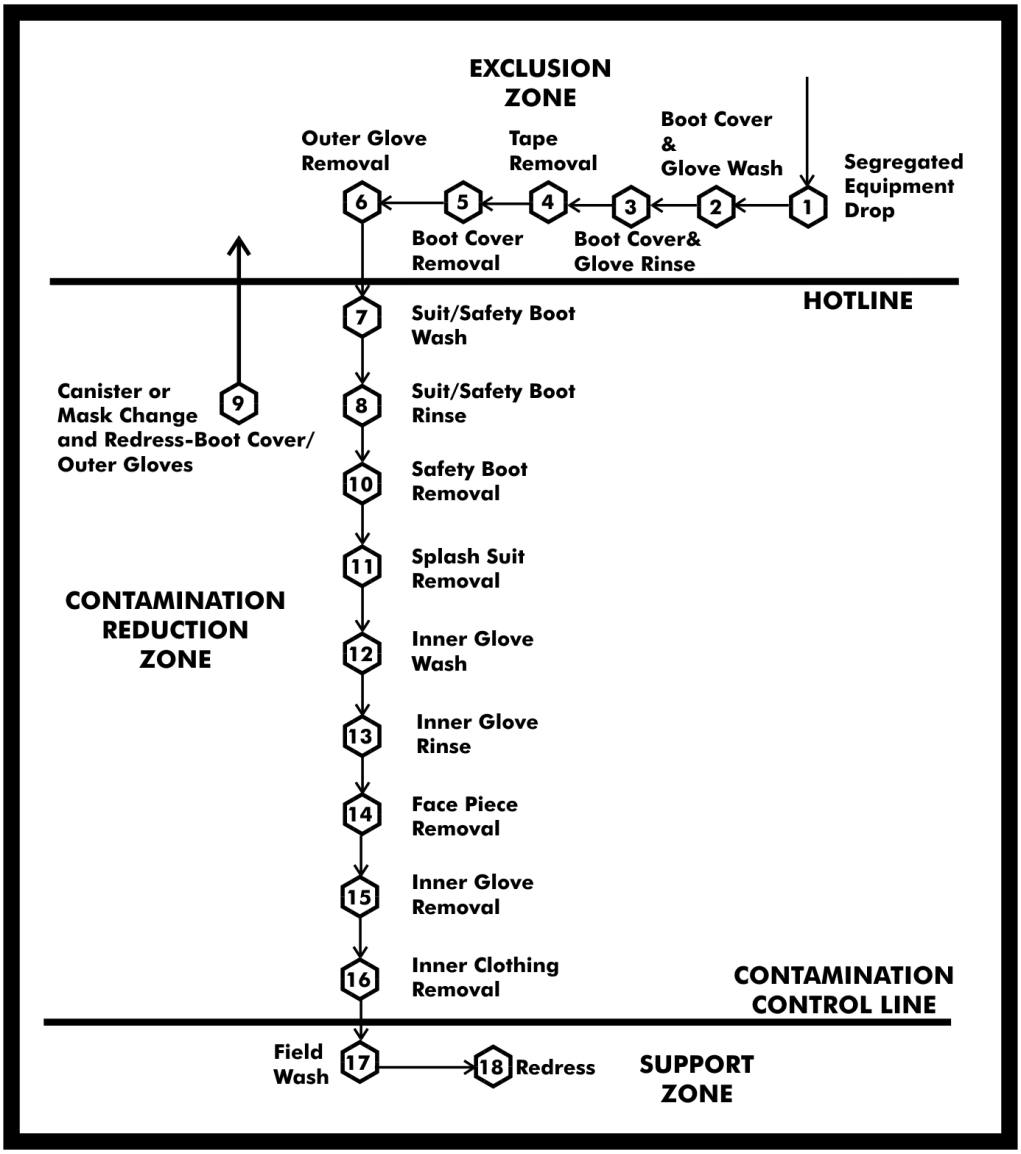
5.5 DECONTAMINATION PLAN, CONTINUED

Procedures for these stations are as follows:

MAXIMUM MEASURES FOR DECONTAMINATION, CONTINUED		
STATION 17	Field wash	Shower if highly toxic, skin-corrosive or skin-absorbable materials are known or suspected to be present. Wash hands and face if shower is not available.
STATION 18	Re-dress	Put on clean clothes.

5.5 DECONTAMINATION PLAN, CONTINUED

DECONTAMINATION PROCEDURES, MAXIMUM DECONTAMINATION LAYOUT

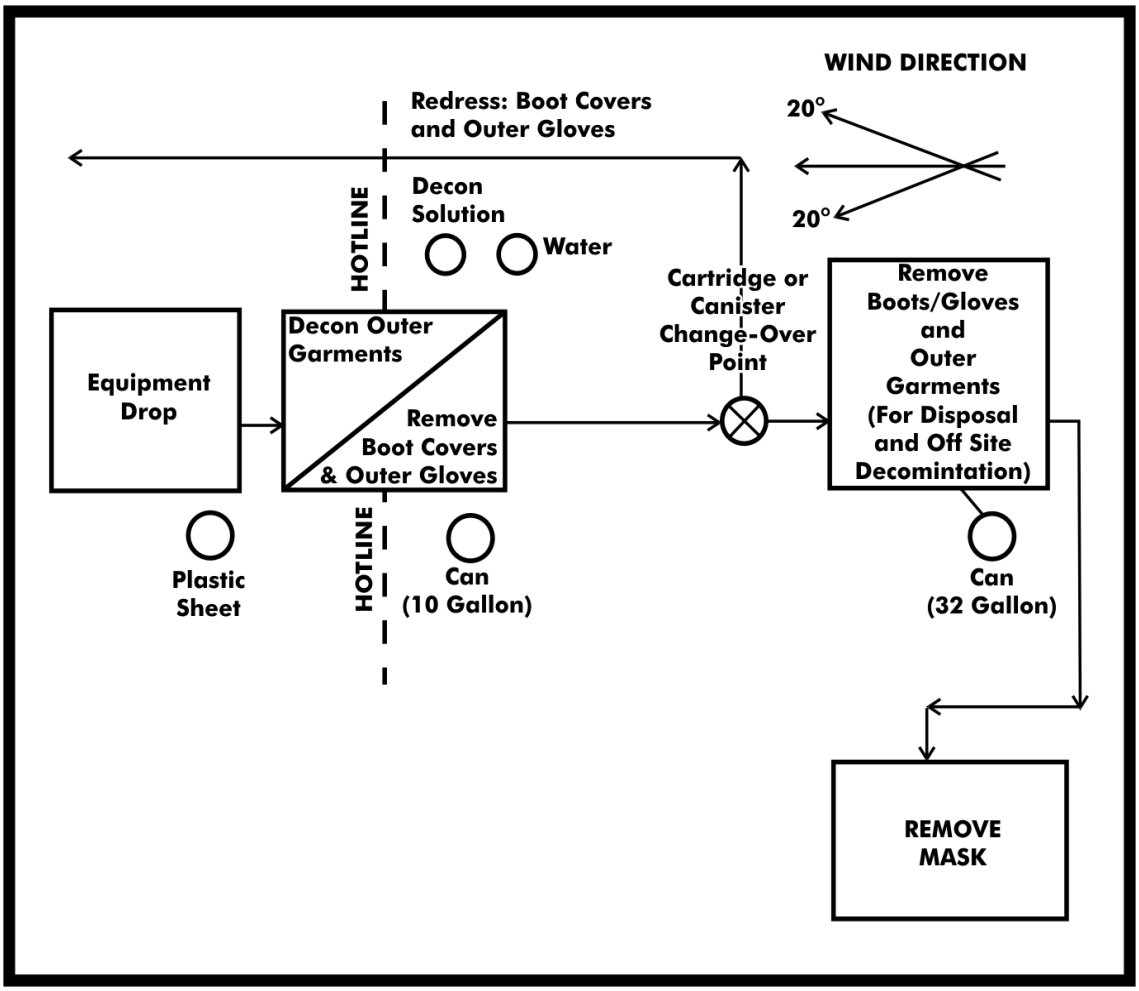


5.5 DECONTAMINATION PLAN, CONTINUED

MINIMUM MEASURES FOR DECONTAMINATION		
STATION 1	Equipment drop	Deposit equipment used on site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, a cool down station may be set up within this area.
STATION 2	Outer garment, boots and gloves wash and rinse	Scrub outer boots, outer gloves, and splash suit with decontamination solution or detergent and water. Rinse off using copious amounts of water.
STATION 3	Outer boot and glove removal	Remove outer boots and gloves. Deposit in container with plastic liner.
STATION 4	Canister or mask change	If worker leaves exclusion zone to change canister (or mask) or this is the last step in the decontamination procedures; worker's canister is exchanged, new outer gloves and boot covers are donned, joints are taped, the worker returns to duty.
STATION 5	Boot, gloves, and outer garment removal	Boots, chemical-resistant splash suit, inner gloves removed and deposited in separate containers lined with plastic.
STATION 6	Face piece removal	Face piece is removed. Avoid touching face with fingers. Face piece deposited on plastic sheet.
STATION 7	Field wash	Hands and face are thoroughly washed. Shower as soon as possible.

5.5 DECONTAMINATION PLAN, CONTINUED

DECONTAMINATION PROCEDURES, MINIMUM DECONTAMINATION LAYOUT



5.6 DISPOSAL PLAN

Date:	Location:
Source of release:	
Amount of release:	
Incident name:	
State On-Scene Coordinator:	
Federal On-Scene Coordinator:	
Time required for temporary storage:	
Proposed storage method:	

Disposal priorities:

Sample date:	Sample ID:
Analysis required (type):	
Laboratory performing analysis:	

Disposal options:

	Available	Likely	Possible	Unlikely

Landfill:				
In-situ/ bio-remediation:				
In-situ burn:				
Pit burning:				
Hydrocyclone:				
Off-site incineration:				
Reclaim:				
Recycle:				

Resources required for disposal options:

General information:

Generator name:	U.S. EPA ID#:
Waste properties:	Waste name:
U.S. EPA waste code:	State waste code:
EPA hazardous waste:	
Waste storage and transportation:	
Proposed storage method:	
Proposed transportation method:	

5.6 DISPOSAL PLAN, CONTINUED

Permits required for storage:
Permits required for transportation:
Estimated storage capacity:
Number and type of storage required:
Local storage available for temporary storage of recovered oil:

PPE required for waste handling:

Waste coordinator:	Date:

Resources required for disposal options:

Incident name:	
Sample number:	Date sent:
Source of sample:	
Date sample data received:	
Waste hazardous:	Non-hazardous:
Permits/variances requested:	
Approval received on waste profile:	
Date disposal can begin:	
Disposal facilities:	
Profile number:	
Storage contractors:	
Waste transporters:	
PPE designated and agrees with Site Safety and Health Plan:	

5.6 DISPOSAL PLAN, CONTINUED

Additional information:
Waste coordinator:

(b) (7)(F)

[redacted]

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[redacted]

5.8 DEMOBILIZATION PLAN

Incident name:	**Location:**
Effective date of plan:	**Effective time period of plan:**
Spill location:	**Plan prepared by:**

Demobilization procedures:

- Operations Section will determine which resources are ready for release from a specific collection site.

- The Planning Section will provide guidance on release priorities and demobilization recommendations.
- Information maintained by the Planning Section will be utilized to assist in the prioritization.
- Each incident will require a Decontamination Area.
- Decontaminated equipment will be returned to appropriate staging area for release or re-deployment.
- Transports for equipment will be required if remote from staging area.
- The Planning Section will document all demobilization and decontamination activities.
- Equipment designated for re-assignment will be mobilized to the appropriate staging area.
- The Supervisor will ensure a log is maintained documenting that proper decontamination procedures are performed for each piece of equipment.
- The Operations Section will ensure that redeployed personnel receive proper rest prior to returning to duty.
- The Planning Section Chief will monitor personnel redeployment activities to ensure number of hours worked is within acceptable guidelines.
- The Operations Section Chief must approve the Demobilization Plan before decontamination, release, or redeployment of any resources.

SECTION 6 Last Revised: May 2008

SENSITIVE AREAS / RESPONSE TACTICS

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6.1 Area Description

6.2 Spill Containment / Recovery

Figure 6.2-1 - Response Tactics for Various Shorelines

6.3 Sensitive Area Protection

Figure 6.3-1 - Sensitive Area Protection Implementation Sequence

Figure 6.3-2 - Summary of Shoreline and Terrestrial Cleanup Techniques

6.4 Wildlife Protection and Rehabilitation

6.5 Endangered and Threatened Species By State

6.6 Vulnerability Analysis (Detailed)

6.7 Tactical Overview Map

6.8 Tactical Plan Index

6.9 Tactical Plans

6.10 Sensitivity Maps

6.11 Groundwater Characterization Study

6.1 AREA DESCRIPTION

Site specific maps and response tactics are included in **SECTION 6.7** and **SECTION 6.9**. Description of shoreline types and specific shoreline protection and cleanup techniques are presented in **FIGURE 6.2-1 and FIGURE 6.3-2.** The strategies and response examples are guidelines and must be evaluated during the response to ensure that the selected response methods are appropriate for the situation.

6.2 SPILL CONTAINMENT / RECOVERY

Containment and recovery refer to techniques that can be employed to contain and recover terrestrial and aquatic petroleum spills.

Terrestrial spills typically result from pipeline or tank leaks. The Company is equipped with secondary containment systems for areas with non-pressurized storage tanks. Spills occurring within the secondary containment area or along pipeline and piping areas should be contained at or near their source to minimize the size of the cleanup area and quantity of soil affected.

Containment is most effective when conducted near the source of the spill, where the oil has not spread over a large area and the contained oil is of sufficient thickness to allow effective recovery and/or cleanup. The feasibility of effectively implementing containment and recovery techniques is generally dependent upon the size of the spill, available logistical resources, implementation time, and environmental conditions or nature of the terrain in the spill area.

For terrestrial spills, trenches and earthen berms or other dams are most often used to contain oil migration on the ground surface. Recovery of free oil is best achieved by using pumps, vacuum sources, and/or sorbents.

Spills that reach water spread faster than those on land. They also have greater potential to contaminate water supplies, to affect wildlife and populated areas, and to impact manmade structures and human activities. Responses on water should therefore emphasize stopping the spill, containing the oil near its source, and protecting sensitive areas before they are impacted.

Sorbents are used to remove minor on-water spills. For larger spills, booming is used to protect sensitive areas and to position oil so it can be removed with skimmers or vacuum trucks.

Due to entrainment, booming is not effective when the water moves faster than one knot or waves exceed 1.5 feet in height. Angling a boom will minimize entrainment. Using multiple, parallel booms will also improve recovery in adverse conditions. A summary of booming techniques is provided on the following page.

Containment/Diversion Berming	• Berms are constructed ahead of advancing surface spills to contain spill or divert spill to a containment area. • May cause disturbance of soils and some increased soil penetration.
Blocking/Flow-	• Construct dam in drainage course/stream bed to block and

Through Dams	contain flow of spill. Cover with plastic sheeting. If water is flowing, install inclined pipes during dam construction to pass water underneath dam. • May increase soil penetration.
Culvert Blocking	• Block culvert with plywood, sandbags, sediments, etc., to prevent oil from entering culvert.
Interception Trench	• Excavate ahead of advancing surface spill to contain spill and prevent further advancement; cover bottom and gradients with plastic. • May cause disturbance of soils and increased soil penetration.
Containment Booming	• Boom is deployed around free oil. • Boom may be anchored or left to move with the oil.
Diversion Booming	• Boom is deployed at an angle to the approaching oil. • Oil is diverted to a less sensitive area. • Diverted oil may cause heavy oil contamination to the shoreline downwind and down current. • Anchor points may cause minor disturbance to the environment.
Exclusion Booming	• Boom is placed around a sensitive area or across an inlet, a river mouth, a creek mouth, or a small bay. • Approaching oil is contained or deflected (diverted) by the boom. • Anchor points may cause minor disturbance to the environment.

Sorbent Booming	• Used only on quiet water with minor oil contamination. • Boom is anchored along a shoreline or used in a manner described

above.

- May use boom made of sorbent material or may pack sorbent material between multiple booms placed parallel to each other.

Other cleanup methods include natural recovery, manual removal/scraping, low-pressure flushing, warm water washing, and burning. Berms and dams are also used in shallow waterways to protect areas.

Cleanup methods are provided in the appropriate Area Contingency Plan (ACP), NOAA's "Shoreline Assessment Manual," and NOAA's "Options for Minimizing Environmental Impacts of Freshwater Spill Response." (See http://www.response.restoration.noaa.gov for the latter two.)

FIGURE 6.2-1 - RESPONSE TACTICS FOR VARIOUS SHORELINES

TYPES	DESCRIPTION	PREDICTED OIL IMPACT	RECOMMENDED CLEANUP ACTIVITY

Developed/ Unforested land	• This class includes towns, cities, farms, pastures, fields, reclaimed wetlands, and other altered areas
	• Organisms and algae may be common in riprap structures and on pilings
		• Oil would percolate easily between the gravel and boulders of riprap structures
		• Oil would coat the intertidal areas of solid structures
		• Biota would be damaged or killed under heavy accumulations
			• May require high pressure spraying:
			  • To remove oil
			  • To prepare substrate for recolonization of barnacle and oyster communities
			  • For aesthetic reasons

Freshwater Flat	• Mud or organic deposits located along the shore or in shallow portions of nontidal freshwater lakes and ponds • They are exposed to low wave and current energy • They are often areas of heavy bird use	• Oil is expected to be deposited along the shoreline • Penetration of spilled oil into the water-saturated sediments of the flat will not occur • When sediments are contaminated, oil may persist for years	• These areas require high priority for protection against oil contamination • Cleanup of freshwater flats is nearly impossible because of soft substrate • Cleanup is usually not even considered because of the likelihood of mixing oil deeper into the sediments during the cleanup effort • Passive efforts, such as sorbent boom can be used to retain oil

			as it is naturally removed

Fresh Marsh	• Found along freshwater ponds and lakes
	• These marshes have various types of vegetative cover, including floating aquatic mats, vascular submerged vegetation, needle and broad-leaved deciduous scrubs and shrubs, and broad-leaved evergreen scrubs and shrubs
	• Birds and mammals extensively use fresh marshes for feeding and breeding purposes
		• Small amounts of oil will contaminate the outer marsh fringe only; natural removal by wave action can occur within months
		• Large spills will cover more area and may persist for decades
		• Oil, particularly the heavy fuel oils, tends to adhere readily to marsh grasses
			• Marshes require the highest priority for shoreline protection
			• Natural recovery is recommended when:
			  • A small extent of marsh is affected
			  • A small amount of oil impacts the marsh fringe
			• The preferred cleanup method is a combination of low-pressure flushing, sorption, and vacuum pumping performed from boats
			• Any cleanup activities should be supervised closely to avoid excessive disturbances of the marsh surface or roots
			• Oil wrack and other debris may be removed by hand

Swamp	• Swamps are freshwater wetlands having varying water depths with vegetation types ranging from shrubs and scrubs to poorly drained forested wetlands. Major vegetative types include: scrubs, shrubs, evergreen trees, and hardwood forested woodlands • Birds and mammals use swamps during	• Even small amounts of spilled oil can spread through the swamp • Large spills will cover more area and may persist for decades since water-flushing rates are low • Oil, particularly the heavy fuel oils, will adhere to swamp vegetation • Unlike mangroves, the roots of swamp forest trees are not exposed; thus, little damage to trees is expected. Any	• No cleanup recommended under light conditions • Under moderate to heavy accumulations, to prevent chronic oil pollution of surrounding areas placement of sorbent along fringe swamp forest (to absorb oil as it is slowly released) may be effective under close scientific supervision • Proper strategic boom placement may be highly effective in trapping large quantities of oil, thus

	feeding and breeding activities	underbrush vegetation, however, would be severely impacted	reducing oil impact to interior swamp forests • Oil trapped by boom can be reclaimed through the use of skimmers and vacuums

FIGURE 6.2-1 - RESPONSE TACTICS FOR VARIOUS SHORELINES, CONTINUED

TYPES	DESCRIPTION	PREDICTED OIL IMPACT	RECOMMENDED CLEANUP ACTIVITY
Open water	• Have ocean like waves and currents • Weather changes effect on-water conditions • River mouths present problems • Thermal stratification occurs	• Most organisms are mobile enough to move out of the spill area • Aquatic birds are vulnerable to oiling • Human usage (such as transportation, water intakes, and recreational activities) may be restricted	• Booming, skimming, vacuuming, and natural recovery are the preferred cleanup methods • Should not use sorbents, containment booming, skimming, and vacuuming on gasoline spills • Cleanup options include physical herding, sorbents, and debris/vegetation removal
Large rivers	• May have varying salinities, meandering channels, and high flow rates • May include manmade structures (such as dams and locks) • Water levels vary seasonally • Floods generate high suspended sediment and debris loads	• Fish and migratory birds are of great concern • Under flood conditions, may impact highly sensitive areas in floodplains • Human usage may be high • When sediments are contaminated, oil may persist for years	• Booming, skimming, and vacuuming are the preferred cleanup methods • Should not use sorbents, containment booming, skimming, and vacuuming on gasoline spills • Cleanup options include natural recovery, physical herding, sorbents, and debris/vegetation removal
Small lakes and ponds	• Water surface can be choppy • Water levels can fluctuate widely	• Wildlife and socioeconomic areas likely to be impacted	• Booming, skimming, vacuuming, and sorbents are the preferred cleanup

	• May completely freeze in winter • Bottom sediments near the shore can be soft and muddy • Surrounding area may include wet meadows and marshes	• Wind will control the oil's distribution	methods • Should not use containment booming, vacuuming, sorbents, and skimming on gasoline spills • Cleanup options include physical herding, sorbents, and debris/vegetation removal
Small rivers and streams	• Wide range of water bodies - fast flowing streams to slow moving bayous with low muddy banks and fringed with vegetation • May include waterfalls, rapids, log jams, mid-channel bars, and islands • Weathering rates may be slower because spreading and evaporation are restricted	• Usually contaminate both banks and the water column, exposing a large number of biota to being oiled • Water intakes for drinking water, irrigation, and industrial use likely to be impacted	• Booming, skimming, vacuuming, sorbents, barriers, and berms are the preferred cleanup methods • Should not use containment booming, sorbents, vacuuming, and skimming on gasoline spills • Cleanup options include physical herding, natural recovery, debris removal, vegetation removal, and in-situ burn

6.3 SENSITIVE AREA PROTECTION

Protection refers to the implementation of techniques or methods to prevent oil from making contact with a shoreline or aquatic area that is determined to be sensitive for environmental, economic, cultural, or human use reasons. Implementation of sensitive area protection techniques must consider a number of factors such as sensitive features, priorities for areas to be protected, and potential degree of impact. In the event a product spill reaches a major area waterway, it may be necessary to protect downstream sensitive areas if it appears that local containment and recovery efforts will not be sufficient to control the entire spill. Major waterways and specific sensitive areas located downstream of the Facility are provided in SECTION 6.7.

FIGURE 6.3-1 - SENSITIVE AREA PROTECTION IMPLEMENTATION SEQUENCE

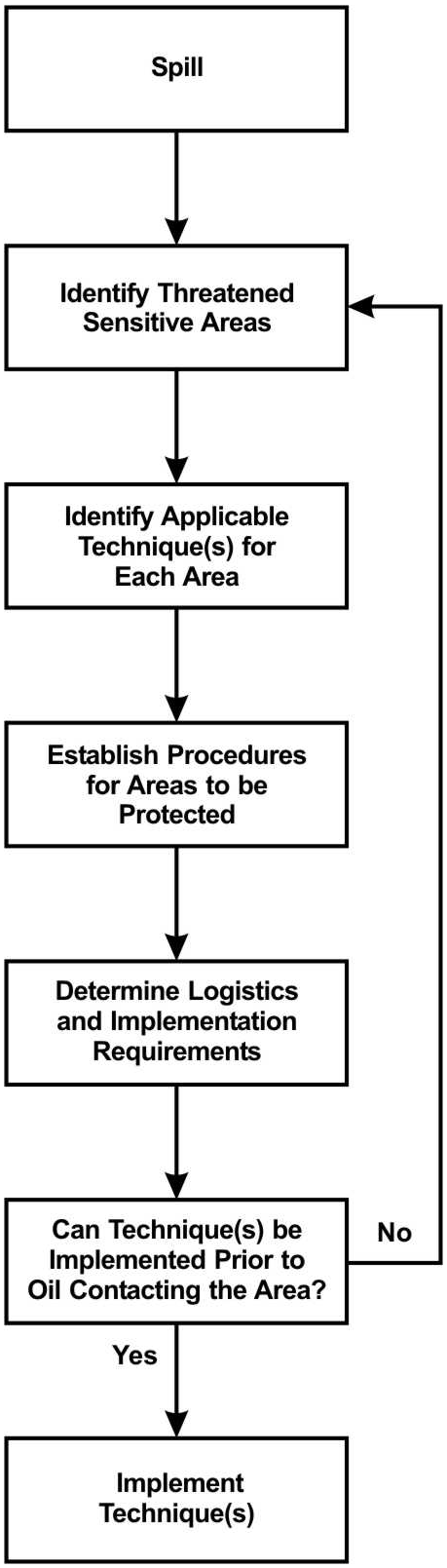


FIGURE 6.3-2 - SUMMARY OF SHORELINE AND TERRESTRIAL CLEANUP TECHNIQUES

TECHNIQUE	DESCRIPTION	RECOMMENDED EQUIPMENT	APPLICABILITY	POTENTIAL ENVIRONMENTAL

				EFFECTS
Removal				
1. Manual Removal	Hand tool (scrapers, wire brushes, shovels, cutting tools, wheel barrows, etc.) are used to scrape oil off surfaces or recover oiled sediments, vegetation, or debris where oil conditions are light or sporadic and/or access is limited.	Equipment misc. hand tools Personnel 10-20 workers	• Can be used on all habitat types • Light to moderate oiling conditions for stranded oil or heavy oils that have formed semi-solid to solid masses • In areas where roosting or birthing animals cannot or should not be disturbed	• Sediment disturbance and erosion potential
2. Mechanical Removal	Mechanical earthmoving equipment is used to remove oiled sediments and debris from heavily impacted areas with suitable access.	Equipment motor grader, backhoe, dump truck elevating scrapers Personnel 2-4 workers plus equipment operators	• On land, wherever surface sediments are accessible to heavy equipment • Large amounts of oiled materials	• Removes upper 2 to 12 inches of sediments
3. Sorbent Use	Sorbents are applied manually to oil accumulations, coatings, sheens, etc. to remove and recover the oil.	Equipment misc. hand tools misc. sorbents Personnel 2-10 workers	• Can be used on all habitat types • Free-floating oil close to shore or stranded on shore, secondary treatment method after gross oil removal • Sensitive areas where access is	• Sediment disturbance and erosion potential • Trampling of vegetation and organisms • Foot traffic can work oil deeper into soft sediments

			restricted	
4. Vacuum / Pumps / Skimmers	Pumps, vacuum trucks, skimmers are used to remove oil accumulations from land or relatively thick floating layers from the water.	Equipment 1-2 50- to 100-bbl vacuum trucks w/ hoses 1-2 nozzle screens or skimmer heads Personnel 2-6 workers plus truck operators	• Can be used on all habitat types • Stranded oil on the substrate • Shoreline access points	• Typically does not remove all oil • Can remove some surface organisms, sediments, and vegetation
Washing				
5. Flooding	High volumes of water at low pressure are used to flood the oiled area to float oil off and out of sediments and back into the water or to a containment area where it can be recovered. Frequently used with flushing.	Equipment 1-5 100- to 200-gpm pumping systems 1 100-ft perforated header hose per system 1-2 200-ft containment booms per system 1 oil recovery device per system Personnel 6-8 workers per system	• All shoreline types except steep intertidal areas • Heavily oiled areas where the oil is still fluid and adheres loosely to the substrate • Where oil has penetrated into gravel sediments • Used with other washing techniques	• Can impact clean downgradient areas • Can displace some surface organisms if present • Sediments transported into water can affect water quality

FIGURE 6.3-2 - SUMMARY OF SHORELINE AND TERRESTRIAL CLEANUP TECHNIQUES, CONTINUED

TECHNIQUE	DESCRIPTION	RECOMMENDED EQUIPMENT	APPLICABILITY	POTENTIAL ENVIRONMENTAL EFFECTS
Washing, Continued				
6. Flushing	Water streams at low to moderate pressure, and possibly elevated temperatures, are used to remove	Equipment 1-5 50- to 100-gpm/ 100-psi pumping systems with manifold 1-4 100-ft hoses	• Substrates, riprap, and solid man-made structures • Oil stranded	• Can impact clean downgradient areas • Will displace many surface

	oil from surface or near-surface sediments through agitation and direct contact. Oil is flushed back into the water or a collection point for subsequent recovery. May also be used to flush out oil trapped by shoreline or aquatic vegetation.	and nozzles per system 1-2 200-ft containment booms per system 1 oil recovery device per system Personnel 8-10 workers per system	onshore • Floating oil on shallow intertidal areas	organisms if present • Sediments transported into water can affect water quality • Hot water can be lethal to many organisms • Can increase oil penetration depth
7. Spot (High Pressure Washing)	High pressure water streams are used to remove oil coatings from hard surfaces in small areas where flushing is ineffective. Oil is directed back into water or collection point for subsequent recovery.	Equipment 1-5 1,200- to 4,000-psi units with hose and spray wand 1-2 100-ft containment booms per unit 1 oil recovery device per unit Personnel 2-4 workers per unit	• Bedrock, man-made structures, and gravel substrates • When low-pressure flushing is not effective • Directed water jet can remove oil from hard to reach sites	• Will remove most organisms if present • Can damage surface being cleaned • Can affect clean downgradient or nearby areas
In Situ				
8. Passive Collection	Sorbent/snare booms or other sorbent materials are anchored at the waterline adjacent to heavily oiled areas to contain and recover oil as it leaches from the sediments.	Equipment 1,000-2,000 ft sorbent/snare boom 200-400 stakes or anchor systems Personnel 4-10 workers	• All shoreline types • Calm wave action • Slow removal process	• Significant amounts of oil can remain on the shoreline for extended periods of time
9. Sediment Tilling	Mechanical equipment or hand tools are used to till lightly to moderately oiled surface	Equipment 1 tractor fitted with tines, dicer, ripper blades, etc. or 1-4 rototillers or 1 set of hand tools Personnel	• Any sedimentary substrate that can support heavy equipment • Sand and	• Significant amounts of oil can remain on the shoreline for extended periods of time • Disturbs surface

	sediments to maximize natural degradation processes.	2-10 workers	gravel beaches with subsurface oil • Where sediment is stained or lightly oiled • Were oil is stranded above normal high waterline	sediments and organisms

FIGURE 6.3-2 - SUMMARY OF SHORELINE AND TERRESTRIAL CLEANUP TECHNIQUES, CONTINUED

TECHNIQUE	DESCRIPTION	RECOMMENDED EQUIPMENT	APPLICABILITY	POTENTIAL ENVIRONMENTAL EFFECTS
In Situ, Continued				
10. In Situ Bioremediation	Fertilizer is applied to lightly to moderately oiled areas to enhance microbial growth and subsequent biodegradation of oil.	Equipment 1-2 fertilizer applicators 1 tilling device if required Personnel 2-4 workers	• Any shoreline habitat type where nutrients are deficient • Moderate to heavily oiled substrates • After other techniques have been used to remove free product on lightly oiled shorelines • Where other techniques are destructive or ineffective	• Significant amounts of oil can remain on the shoreline for extended periods of time • Can disturb surface sediments and organisms
11. Log/Debris Burning	Oiled logs, driftwood, vegetation, and debris are	Equipment 1 set of fire control equipment 2-4 fans	• On most habitats except dry muddy	• Heat may impact local near-surface organisms

	burned to minimize material handling and disposal requirements. Material should be stacked in tall piles and fans used to ensure a hot, clean burn.	1 supply of combustion promoter Personnel 2-4 workers	substrates where heat may impact the biological productivity of the habitat • Where heavily oiled items are difficult or impossible to move • Many potential applications on ice	• Substantial smoke may be generated • Heat may impact adjacent vegetation
12. Natural Recovery	No action is taken and oil is allowed to degrade naturally.	None required	• All habitat types • When natural removal rates are fast • Degree of oiling is light • Access is severely restricted or dangerous to cleanup crews • When cleanup actions will do more harm than natural removal	• Oil may persist for significant periods of time • Remobilized oil or sheens may impact other areas • Higher probability of impacting wildlife

FIGURE 6.3-2 - SUMMARY OF SHORELINE AND TERRESTRIAL CLEANUP TECHNIQUES, CONTINUED

TECHNIQUE	DESCRIPTION	RECOMMENDED EQUIPMENT	APPLICABILITY	POTENTIAL ENVIRONMENTAL EFFECTS
In Situ, Continued				
13. Dispersants	Dispersants are used to reduce	Dispersants Boat or aircraft	• Water bodies with	• Use in shallow water could

(All facility personnel who might be involved in an oil spill response 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 responses; and Dispersants are not authorized for use in EPA Region V)	the oil/water interfacial tension thereby decreasing the energy needed for the slick to break into small particles and mix into the water column. Specially formulated products containing surface-active agents are sprayed from aircraft or boats onto the slick.		sufficient depth and volume for mixing and dilution • When the impact of the floating oil has been determined to be greater than the impact of dispersed oil on the water-column community	affect benthic resources • May adversely impact organisms in the upper 30 feet of the water column • Some water-surface and shoreline impacts could occur
1 - Per 1000 feet of shoreline or oiled area				

Cleanup methods are provided in the appropriate Area Contingency Plan (ACP), NOAA's "Shoreline Assessment Manual," and NOAA's "Options for Minimizing Environmental Impacts of Freshwater Spill Response." (See http://response.restoration.noaa.gov for the latter two.)

6.4 WILDLIFE PROTECTION AND REHABILITATION

- The Company will support wildlife protection and rehabilitation efforts during the response, and assist in these efforts in alignment with local, state, and federal authorities and certified contractors.

- Company personnel will not attempt to rescue or clean affected wildlife, because such actions may cause harm to the individuals or may place the animals at further risk.

- Federal and state agencies responsible for wildlife capture and rehabilitation will typically coordinate capturing and rehabilitating oiled wildlife; a list of these agencies is included in **FIGURE 3.1-6**.

- Wildlife rehabilitation specialists may be utilized to assist in capturing and rehabilitating oiled animals as well as deterring unaffected animals away from the spill site.

6.5 ENDANGERED AND THREATENED SPECIES BY STATE

COMMON NAME	SCIENTIFIC NAME	HABITAT	STATUS	STATE
Bat, gray	*Myotis grisescens*	Caves and mines; rivers adjacent to forests	E	Virginia
Bat, Indiana	*Myotis sodalis*	Caves, mines, upland forests	E	Virginia
Bat, Virginia big-eared	*Corynorhinus (=Plecotus) townsendii virginianus*	Caves dominated by oak-hickory or beech-maple-hemlock forest	E	Virginia
Bean, Cumberland (pearlymussel) Entire Range; Except where listed as Experimental Populations	*Villosa trabalis*	Sand, gravel, and cobble substrates in moderate to swift currents	E	Virginia
Bean, purple	*Villosa perpurpurea*	Creeks to medium-sized rivers and occasionally headwaters	E	Virginia
Bittercress, small-anthered	*Cardamine micranthera*	Seepages, wet rock crevices, streambanks, and sandbars	E	Virginia
Blossom, green (pearlymussel)	*Epioblasma torulosa gubernaculum*	Sand and gravel substrates with moderate to fast current	E	Virginia
Bulrush, Northeastern	*Scirpus ancistrochaetus*	Open, tall herb-dominated wetlands	E	Virginia

Butterfly, Mitchell's satyr	*Neonympha mitchellii mitchellii*	Sedge swamps, marshes	E	Virginia
Chaffseed, American	*Schwalbea americana*	Acidic, sandy or peaty soils in open pine flatwoods	E	Virginia
Combshell, Cumberlandian Entire Range; Except where listed as Experimental Populations	*Epioblasma brevidens*	Large creeks to large rivers	E	Virginia
Coneflower, smooth	*Echinacea laevigata*	Openings in woods, such as cedar barrens and clear cuts, and on dry limestone bluffs	E	Virginia
Darter, duskytail Entire	*Etheostoma percnurum*	Gravel and rubble pools and riffles of large creeks and small to medium rivers	E	Virginia
Fanshell	*Cyprogenia stegaria*	Medium to large streams	E	Virginia
Harperella	*Ptilimnium nodosum*	Rocky or gravelly shoals of clear, swift-flowing streams	E	Virginia

E - Endangered
T - Threatened

6.5 ENDANGERED AND THREATENED SPECIES BY STATE, CONTINUED

COMMON NAME	SCIENTIFIC NAME	HABITAT	STATUS	STATE
Isopod, Lee County cave	*Lirceus usdagalun*	Submerged, small rocks in subterranean streams; sometimes among gravels	E	Virginia

Lichen, rock gnome	*Gymnoderma lineare*	Shady rock or shady moss-covered rock	E	Virginia
Logperch, Roanoke	*Percina rex*	Deep, fast-flowing chutes and pools	E	Virginia
Mallow, Peter's Mountain	*Iliamna corei*	Shallow soil of the Clinch sandstone outcrops	E	Virginia
Monkeyface, Appalachian (pearlymussel)	*Quadrula sparsa*	Fast-flowing, headwaters sections of rivers in shallow riffles and runs	E	Virginia
Monkeyface, Cumberland (pearlymussel) Entire Range; Except where listed as Experimental Populations	*Quadrula intermedia*	Shallow riffle and shoal areas of headwater streams and bigger rivers	E	Virginia
Mucket, pink (pearlymussel)	*Lampsilis abrupta*	Sand and gravel substrates	E	Virginia
Mussel, oyster Entire Range; Except where listed as Experimental Populations	*Epioblasma capsaeformis*	Large creeks and rivers	E	Virginia
Pearlymussel, birdwing Entire Range; Except where listed as Experimental Populations	*Conradilla caelata*	Riffle areas with sand and gravel substrates in moderate to fast currents	E	Virginia
Pearlymussel, cracking Entire Range; Except where listed as Experimental Populations	*Hemistena lata*	Sand, gravel, and cobble substrates in swift currents or mud	E	Virginia
Pearlymussel, dromedary Entire Range; Except where listed as Experimental Populations	*Dromus dromas*	Riffle, at shoals with sand and gravel and moderate current velocities	E	Virginia

Pearlymussel, littlewing	*Pegias fabula*	Riffle, in and below on sand and gravel	E	Virginia
Pigtoe, finerayed Entire Range; Except where listed as Experimental Populations	*Fusconaia cuneolus*	Clear, high gradient streams in firm cobble and gravel substrates	E	Virginia
Pigtoe, rough	*Pleurobema plenum*	Medium to large rivers in sand, gravel, and cobble substrates in shoals	E	Virginia
Pigtoe, shiny Entire Range; Except where listed as Experimental Populations	*Fusconaia cor*	Shoals and riffles in clear streams	E	Virginia

E - Endangered
T - Threatened

6.5 ENDANGERED AND THREATENED SPECIES BY STATE, CONTINUED

COMMON NAME	SCIENTIFIC NAME	HABITAT	STATUS	STATE
Rabbitsfoot, rough	*Quadrula cylindrica strigillata*	Medium sized to large rivers in moderate to swift current	E	Virginia
Riffleshell, tan	*Epioblasma florentina walkeri (=E. walkeri)*	Sand and gravel substrates usually found in headwaters, riffles and shoals	E	Virginia
Rock-cress, shale barren	*Arabis serotina*	Shale barrens with hard, small shale soil fragments	E	Virginia
Salamander, Shenandoah	*Plethodon shenandoah*	Steep, northerly facing talus slopes in forested situations of Shenadoah National Park	E	Virginia
Sea turtle, hawksbill	*Eretmochelys imbricata*	Clear offshore waters off the mainland and on island shelves	E	Virginia

Sea turtle, Kemp's ridley	*Lepidochelys kempii*	Shallow areas with sandy and muddy bottoms	E	Virginia
Sea turtle, leatherback	*Dermochelys coriacea*	Warm sands of tropical beaches	E	Virginia
Snail, Virginia fringed mountain	*Polygyriscus virginianus*	Fragments of weathered dolomite in loose clay-like soil	E	Virginia
Spider, spruce-fir moss	*Microhexura montivaga*	Forest - conifer	E	Virginia
Spinymussel, James	*Pleurobema collina*	Waters with slow to moderate current and relatively hard water on sand and gravel substrates	E	Virginia
Squirrel, Carolina northern flying	*Glaucomys sabrinus coloratus*	Coniferous and mixed forests; hardwoods	E	Virginia
Squirrel, Delmarva Peninsula fox Entire, except Sussex Co., DE	*Sciurus niger cinereus*	Edges of mixed pine-hardwood forests	E	Virginia
Sturgeon, shortnose	*Acipenser brevirostrum*	Rivers, estuaries, and the sea	E	Virginia
Sumac, Michaux's	*Rhus michauxii*	Sandy or rocky open woods	E	Virginia
Tern, roseate northeast U.S. nesting pop.	*Sterna dougallii dougallii*	Coastal islands and beaches	E	Virginia

E - Endangered
T - Threatened

6.5 ENDANGERED AND THREATENED SPECIES BY STATE, CONTINUED

COMMON NAME	SCIENTIFIC NAME	HABITAT	STATUS	STATE
Wedgemussel, dwarf	*Alasmidonta heterodon*	Slow moving, sandy rivers	E	Virginia

Whale, finback	*Balaenoptera physalus*	Offshore ocean waters	E	Virginia
Whale, humpback	*Megaptera novaeangliae*	Surface of the ocean	E	Virginia
Whale, right	*Balaena glacialis (incl. australis)*	Surface of the ocean	E	Virginia
Woodpecker, red-cockaded	*Picoides borealis*	Open pine forests with large, widely-spaced older trees	E	Virginia
Amaranth, seabeach	*Amaranthus pumilus*	Dunes, overwash fans and other areas of bare sand	T	Virginia
Birch, Virginia round-leaf	*Betula uber*	Creek in Smyth County in southwest Virginia	T	Virginia
Chub, slender	*Erimystax cahni*	Medium to fairly large, usually clear, warm rivers of moderate gradient	T	Virginia
Chub, spotfin Entire	*Erimonax monacha*	Cool and warm, typically clear, large creeks or medium-sized rivers	T	Virginia
Dace, blackside	*Phoxinus cumberlandensis*	Small upland streams with moderate flows	T	Virginia
Isopod, Madison Cave	*Antrolana lira*	Deep, subterranean lakes within the Cave Hill aquifer	T	Virginia
Joint-vetch, sensitive	*Aeschynomene virginica*	Freshwater to slightly brackish tidal marshes	T	Virginia
Madtom, yellowfin except where EXPN	*Noturus flavipinnis*	Medium-sized and large creeks and small rivers that are unpolluted, warm or warm to cool	T	Virginia
Orchid, eastern prairie fringed	*Platanthera leucophaea*	Mesic to wet praries	T	Virginia
Pink, swamp	*Helonias bullata*	Acidic wetlands	T	Virginia

E - Endangered
T - Threatened

6.5 ENDANGERED AND THREATENED SPECIES BY STATE, CONTINUED

COMMON NAME	SCIENTIFIC NAME	HABITAT	STATUS	STATE
Plover, piping except Great Lakes watershed	*Charadrius melodus*	Sandy beaches, islands	T	Virginia
Pogonia, small whorled	*Isotria medeoloides*	Cidic soils, in dry to mesic second-growth	T	Virginia
Sea turtle, green except where endangered	*Chelonia mydas*	Coasts, open sea	T	Virginia
Sea turtle, loggerhead	*Caretta caretta*	Estuaries, coastal streams and salt marshes	T	Virginia
Sneezeweed, Virginia	*Helenium virginicum*	Seasonally inundated ponds	T	Virginia
Spiraea, Virginia	*Spiraea virginiana*	Flood-scoured banks of high-gradient mountain streams, point bars, and natural levees	T	Virginia
Tiger beetle, northeastern beach	*Cicindela dorsalis dorsalis*	Coastal beaches	T	Virginia

E - Endangered
T - Threatened

6.6 VULNERABILITY ANALYSIS (DETAILED)

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

The environmental and socio-economic sensitivities in the vicinity of the Facility can be divided into a number of categories. The following environmental/socio-economic sensitivity summary describes these categories, which may be impacted by a discharge and should be addressed in the response:

Wetlands or Other Sensitive Environments:

- Environmentally sensitive areas are prevalent throughout any marine and/or terrestrial environment and may be affected by any potential discharge incident.
- Environmentally sensitive areas subjected to stress and sudden change may be severely damaged. All means of exclusion/diversion should be utilized during a response effort to minimize the impact on these areas.

Historical Areas:

- Properties listed in the National Register of Historic Places & Natural Landmarks are included in this category.
- These areas may need to be boomed off or otherwise protected to minimize impact.

Major Recreational Areas:

- A discharge affecting these areas may pose a public safety/health risk during a response effort.
- Shoreline access for personnel and equipment deployment (boats, boom, etc.) is typically available in these areas.

Marinas:

- These areas have a high degree of public exposure (personal and property) and should be boomed for protection.
- Boats and other water-deployed equipment can often be deployed and/or obtained in these areas.

Residential Areas:

- These are areas with high public impact and may warrant evacuation in extreme cases.
- Cleanup must be performed with extreme caution due to extensive public exposure.

Commercial Farming/Ranching Areas:

- Commercial Farming/Ranching Areas have the potential of human and livestock impact, as well as socio-economic impact in the potential loss of crops or loss of property use.

(b) (7)(F)

- (b) (7)(F)
-

Wildlife Management Areas and Refuges:

- These areas have a high degree of exposure to threatened/endangered species, flora and fauna.

Protection booming and clean-up efforts are high priority in these areas.

6.6 VULNERABILITY ANALYSIS (DETAILED), CONTINUED

VULNERABILITY ANALYSIS (DETAILED)
Water Intakes:
(b) (7)(F)
Schools:
There are no schools located in close proximity that a spill from this Facility would impact.
Medical Facilities:
There are no medical facilities located in close proximity that a spill from this Facility would impact.
Residential Areas:
There are no residential areas located in close proximity that a spill from this Facility would impact.

6.6 VULNERABILITY ANALYSIS (DETAILED), CONTINUED

VULNERABILITY ANALYSIS (DETAILED)
Businesses:
There are no businesses within the response zone of the Facility.
Wetlands or Other Sensitive Environments:
In general, the shoreline types are categorized mainly as marshes for the shoreline sections

along the North Landing River. Marshes are highly sensitive to oil impacts, and they provide a nursery ground for numerous fish species, along with crabs and bird life. Other sensitive environments include West Neck Creek, Northwest River, Tull Bay and Back Bay. These areas contain sensitive shorelines, consisting of marshes and are also habitats for various shorebirds, gulls and tern and wading birds.

6.6 VULNERABILITY ANALYSIS (DETAILED), CONTINUED

VULNERABILITY ANALYSIS (DETAILED)
Fish and Wildlife:
The wildlife population is limited.
Lakes and Streams:
A spill at the dock would flow into the North Landing River. The river is tidally influenced in this area. North of the Terminal: Albemarle & Chesapeak Canal, Stump Lake South of the Terminal: West Neck Creek, Blackwater Creek, Northwest River, Tull Bay, Back Bay

6.6 VULNERABILITY ANALYSIS (DETAILED), CONTINUED

VULNERABILITY ANALYSIS (DETAILED)
Endangered Flora and Fauna:
Flora and fauna are always present and are sensitive to the effects of a pollution incident. All environmental areas deserve protection from pollution, but they must be prioritized during a response so as to protect the most sensitive and susceptible areas to pollution. See SECTION 6.5 for a list of endangered and threatened species in the state.
Recreational Areas:
South of the Terminal: West Neck Marina (2 miles) and North Landing River. North of the Terminal: Mercer Boat Landing (on North Landing), Albemarle & Chesapeake Canal (at the City of Chesapeake, VA), and Princess Anne Park (pipeline segment located on the intersection of Dam Neck Road and Princess Anne Road)
Transportation Routes (Air, Water, Land):
Depending on the magnitude of the spill, waterway traffic could potentially be impacted on the North Landing River (ICW); a pipeline spill may impact North Landing Road and Princess Anne Road.
Utilities:

There are no utilities within one mile of the Facility.
Other Applicable Areas:
There are no other applicable areas of economic within one mile of the Facility.

6.7 TACTICAL OVERVIEW MAP

6.8 TACTICAL PLAN INDEX

SITE #	SITE NAME

6.9 TACTICAL PLANS

Click here for Tactical Plan

6.10 SENSITIVITY MAPS

Click here for ESI Index

6.10 SENSITIVITY MAPS

Click here for ESI Legend

6.10 SENSITIVITY MAPS

Click here for ESI Map Data

6.10 SENSITIVITY MAPS

Click here for Terminal USGS Quad

6.10 SENSITIVITY MAPS

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6.10 SENSITIVITY MAPS

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6.10 SENSITIVITY MAPS

Click here for ESI Map 4

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6.10 SENSITIVITY MAPS

Click here for PHMSA Sensitivity Maps

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6.11 GROUNDWATER CHARACTERIZATION STUDY

Click here for Groundwater Characterization Study

SECTION 7 Last Revised: May 2008

SUSTAINED RESPONSE ACTIONS

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7.1 Response Resources

7.1.1 Facility Response Equipment

Figure 7.1-1 - Regional Company and Response Contractor's Equipment List / Response Time

7.1.2 Response Equipment Inspection and Maintenance

7.1.3 Contracts, Contractor Equipment, and Labor

7.1.4 Command Post

Figure 7.1-2 - Command Post Checklist

7.1.5 Staging Area

7.1.6 Communications Plan

Figure 7.1-3 - Communications Checklist

7.2 Public Affairs

Figure 7.2-1 - Incident Fact Sheet

7.3 Site Security Measures

Figure 7.3-1 - Site Security Checklist

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7.4 Waste Management

Figure 7.4-1 - Waste Management Flow Chart

Figure 7.4-2 - General Waste Containment and Disposal Checklist

SECTION 7
SUSTAINED RESPONSE ACTIONS, CONTINUED

7.4.1 Waste Storage

Figure 7.4-3 - Temporary Storage Methods

7.4.2 Waste Transfer

7.4.3 Waste Disposal

Figure 7.4-4 - Facility-Specific Disposal Locations

7.1 RESPONSE RESOURCES

7.1.1 Facility Response Equipment

BOOM					
TYPE/MODEL/YEAR	QUANTITY	SIZE	CONTAINMENT AREA (sq ft)	STORAGE LOCATION	
Bantam Floating boom #BT-P10/225T w/ 8" Direct Skirt	600 ft.			Spill Response Storage Building	
Harbor Floating Boom w/ 8" Direct Skirt	400 ft.			Spill Response Storage Building	
SORBENTS					
TYPE/YEAR	QUANTITY	ABSORPTION CAPACITY (gal)	STORAGE LOCATION	OPERATIONAL STATUS	
Dica-Sorb - Sorbent Pads	2 Bales		Spill Response Storage Building	Operational	
HAND TOOLS					
TYPE/YEAR	QUANTITY	STORAGE LOCATION	OPERATIONAL STATUS		
Long Handled Shovels	2	Spill Response Storage Building	Operational		
COMMUNICATIONS EQUIPMENT					
TYPE/YEAR	QUANTITY	STORAGE LOCATION/NUMBER	OPERATIONAL STATUS		
Motorola Radios-Model HT1000	4	Manager's Office	Operational		
FIRE FIGHTING AND PERSONNEL PROTECTIVE EQUIPMENT					
TYPE/YEAR	QUANTITY	STORAGE LOCATION	OPERATIONAL STATUS		
20# CO2 Extinguisher	1	Dock House	Operational		
20# ABC Extinguisher	1	Office Building	Operational		
20# Dry Chem. Extinguisher	1	Office Building	Operational		
20# Dry Chem. Extinguisher	1	Tool Shed	Operational		
100# Dry Chem. Extinguisher	1	Dock	Operational		
OTHER					
TYPE/YEAR	QUANTITY	STORAGE LOCATION	OPERATIONAL STATUS		
14-Foot Polaris Craft "John Boat" w/ 25 HP	1	Spill Response Storage Building	Operational		

Motor				

***Note:** Response equipment is tested and deployed as described in **FIGURE A.1-2** and **FIGURE A.1-4**.

Facility response equipment is located on-site and is accessible within 30 minutes of a spill.

FIGURE 7.1-1 - REGIONAL COMPANY AND RESPONSE CONTRACTOR'S EQUIPMENT LIST / RESPONSE TIME

* USCG Classified OSRO for facility

COMPANY/CONTRACTOR	EQUIPMENT	RESPONSE TIME
*Moran Environmental Recovery Norfolk, VA	Full Response Capability	1 hours
*Clean Harbors Environmental Services Chesapeake, Virginia	Full Response Capability	1 hours

*Note: Response times are based on 35 mph for land (five knots for water) and take into account traffic, weather, and other environmental conditions that could restrict response efforts.

7.1.2 Response Equipment Inspection and Maintenance

Company response equipment is tested and inspected as noted below. The Manager of Operations is responsible for ensuring that the following response equipment and testing procedures are implemented. These consist of:

Containment boom During semiannual boom deployment exercises, boom will be inspected for signs of structural deficiencies. If tears in fabric or rotting is observed, boom will be repaired or replaced. In addition, end connectors will be inspected for evidence of corrosion. If severe corrosion is detected, equipment will be repaired or replaced.

Miscellaneous equipment Other response equipment identified in this Plan will be inventoried and tested on a semiannual basis to ensure that the stated quantities are in inventory and in proper working order. The equipment inspection and deployment exercises are recorded and maintained at the facility and retained for a period of five years. Exercise requirements are listed in **APPENDIX A.1**. A Spill/Exercise Documentation form is in **FIGURE A.1-3**. **FIGURE A.1-4** provides a log for response equipment testing and deployment drills.

7.1.3 Contractors, Contractor Equipment, and Labor

- The Company's primary response contractors' names and phone numbers, as well as other companies who can provide spill response services are provided in **FIGURE 3.1-6**.
- The Company has ensured by contract the availability of private personnel and equipment necessary to respond, to the maximum extent practicable, to the worst case discharge or the substantial threat of such discharge.
- Contractors without USCG classification deploy and inspect boom to meet PREP guidelines. Company requires that these exercises are completed annually.
- **APPENDIX B** contains evidence of contracts for the Company's primary response contractors and equipment lists of contractors without USCG classification.

7.1.4 Command Post

In the event of a major spill or other emergency, both a Company off-site EMT Command Center and a Command Post (located close to but at a safe distance back from the incident scene) may be established. For a minor emergency, only a Command Post may be established. Refer to **FIGURE 7.1-2** for guidelines in establishing a Command Post.

FIGURE 7.1-2 - COMMAND POST CHECKLIST

COMMAND POST CHECKLIST	INITIALS	DATE/TIME STARTED	DATE/TIME COMPLETED
Ensure adequate space for size of staff.			
Ensure 24-hour accessibility.			
Ensure personal hygiene facilities.			
Ensure suitability of existing communications resources (phone/fax/radio).			
Ensure suitability of private conference and briefing rooms.			
Identify Command Post security requirements, safe location.			
Notify other parties of Command Post location; provide maps/driving directions.			
Determine staging areas and incident base locations.			
Identify future need to move, upgrade facilities.			

Command Posts for this facility are located at "list location":The command post would be in the facility office this is a small facility and the office is centrally located

7.1.5 Staging Area

According to the incident type and magnitude, numerous staging areas may be required to support containment and cleanup operations. The staging area should be located in the cold

zone inside the delineated isolation perimeter.

In selecting a suitable staging area, the following criteria should be considered:

- Accessibility to impacted areas;
- Proximity to secure parking, airports, docks, pier, or boat launches; and
- Accessibility to large trucks and trailers which may be used to transfer equipment.

In addition, the staging area should:

- Be in a large open area in order to provide storage for equipment and not interfere with equipment loading and offloading operations.
- Have a dock/pier on site for deploying equipment.
- Have moorage available for vessels to aid the loading/offloading of personnel.

Staging areas for this facility are located at "list location": Behind the office in the open field; again this is a small facility

7.1.6 Communications Plan

Normal Company communications to the Facility are conducted via telephone lines, cellular telephones, two way radios, e-mail, fax machines, and pagers.

Additional communications equipment (satellite phones, VHF portable radios with chargers and accessories, command post with UHF, VHF, single sideband, marine, aeronautical, telephone, and hard-line capability) may be provided by the Company or leased from a communications company in the area. Communications with government agencies, state police, and contractors can be conducted on portable radios. Refer to **FIGURE 7.1-3** for guidelines to setup communications.

The Communications Plan, written at the time of an incident, will identify telephone numbers and radio frequencies used by responders. This may also involve activation of multiple types of communications equipment and coordination among multiple responding agencies and contractors.

FIGURE 7.1-3 - COMMUNICATIONS CHECKLIST

COMMUNICATIONS CHECKLIST	INITIALS	DATE/TIME STARTED	DATE/TIME COMPLETED
Develop a Communications Plan.			
Ensure adequate phone lines per staff element - contact local provider.			
Ensure adequate fax lines - contact local provider.			
Evaluate need for internet access.			
Ensure recharging stations for cellular phones.			

VHF radio communications: • Establish frequencies. • Assign call signs. • Distribute radios. • Establish communications schedule.			
Ensure recharging stations for VHF radios.			
Determine need for VHF repeaters.			
Ensure copy machine available.			
Ensure communications resource accountability.			
Ensure responders have capability to communicate with aircraft.			

Note: Actions on this checklist may not be applicable or may be continuous activities.

7.2 PUBLIC AFFAIRS

This section contains guidelines for dealing with the media during an emergency. The Incident Commander will play a key role in providing the initial public assessment and taking the first steps to provide the Company's public response. Information in this section includes:

- Guidelines for dealing with the media
- Incident Fact Sheet (**FIGURE 7.2-1**)

7.2 PUBLIC AFFAIRS, CONTINUED

GUIDELINES FOR DEALING WITH THE MEDIA

- The Terminal or Regional Managers are the most logical person for reporters to seek out for information.
- Reporters will look elsewhere to find out what happened if you do not answer their questions; however, if you do not have this information or are not prepared to answer a particular question, say so then say when they can expect the answers to their questions (such as one hour).
- It is important to be courteous to all media representatives and to provide a safe place for them to wait until a Company representative can meet them; you may need to provide an initial statement.
- IMPORTANT: Notify Regional Management and/or Corporate Communications for guidance in addressing media inquires.

Provide	A brief, general description of what happened. • Number of injured or killed, if known. • Steps being taken to handle the emergency.
Don't provide	• Names of deceased or seriously injured employees until the next of kin have been notified. • Speculation about the cause of the emergency. • Any statement implying personal or Company negligence. • Cost estimates of damage.
Other considerations	• Safety considerations should always receive priority in determining access to Company property. • Anticipate likely questions. • There are only six questions that can be asked about any subject: who, what, when, where, why, and how. • Keep answers short and understandable. Don't use industry jargon or acronyms. • Answer only the question that is asked by the reporter. • Give the most important facts first. • Talk to the public's concern about the incident such as whether these were deaths, injuries, any threat to the public, or danger of explosion or fire.

7.2 PUBLIC AFFAIRS, CONTINUED

Other considerations, continued:	• If you don't know the answer to a question, don't be afraid to say "I don't know"; make note of the question and tell the reporter that you will try to get the answer - then do it. Don't use the phrase "No Comment". • Don't be defensive. • There is no such thing as "Talking off the record"; assume that anything and everything you say to a reporter is going to be printed and/or used in the story. • Avoid "What If?" or speculative questions; these questions should be answered with a restatement of the problem and what is being done to control it.

- Don't speculate about the cause of the incident.
- Don't minimize the situation.

FIGURE 7.2-1 - INCIDENT FACT SHEET

What occurred:
When (time):
Where (location):
What are hazards:
How is the situation being handled:
How many people involved:
Confirmed injuries/fatalities:
Treatment location:
Name of injured (release only after next of kin are notified):
Name of fatalities (release only after next of kin are notified):
What agencies have been notified:
On scene? (yes/no):
Who is in charge:
Has outside help been requested:
Who:
On scene? (yes/no):
Is there danger to the plant:
Is there danger to the community:
What:
Is there an environmental hazard:
What is the environmental hazard:
What is being done to minimize environmental threat:
Is there a need for evacuation:

(b) (7)(F)

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Virginia Beach Terminal

(b) (7)(F)

[redacted]

(b) (7)(F)

7.4 WASTE MANAGEMENT

Initial oil handling and disposal needs may be overlooked in the emergency phase of a response, which could result in delays and interruptions of cleanup operations. Initially, waste management concerns should address:

- Equipment capacity,
- Periodic recovery of contained oil, and
- Adequate supply of temporary storage capacity and materials.

The following action items should be conducted during a spill response:

- Development of a Site Safety and Health Plan (**SECTION 5.4**) addressing the proper PPE and waste handling procedures.

- Development of a Disposal Plan (**SECTION 5.6**) in accordance with any federal, state, and/or local regulations. Facility-specific disposal locations for different types of materials are listed in **FIGURE 7.4.4**.
- Continuous tracking of oil disposition in order to better estimate amount of waste that could be generated over the short and long-term.
- Organization of waste collection, segregation, storage, transportation, and proper disposal.
- Minimization of risk of any additional pollution.
- Regulatory review of applicable Federal, State, and Local laws and ensure compliance, and, if appropriate, obtain permits.
- Documentation of all waste handling and disposal activities.
- Disposal of all waste in a safe and approved manner.

Good hazardous waste management includes:

- Reusing materials when possible.
- Recycling or reclaiming waste.
- Treating waste to reduce hazards or reducing amount of waste generated.

7.4 WASTE MANAGEMENT, CONTINUED

- The management of the wastes generated in cleanup and recovery activities must be conducted with the overall objective of ensuring:
    - Worker safety,
    - Waste minimization,
    - Cost effectiveness, and
    - Minimization of environmental impacts.
- Proper disposal.
- Minimization of present and future environmental liability.

Solid wastes, such as sorbents, PPE, debris, and equipment will typically be transported from the collection site to a designated facility for:

- Storage
- Waste segregation
- Packaging
- Transportation

Once this process is complete, the waste will be shipped off-site to an approved facility for required disposal.

A general flow chart for waste management guidelines is provided in **FIGURE 7.4-1**. An overall checklist for containment and disposal is provided in **FIGURE 7.4-2**.

FIGURE 7.4-1 - WASTE MANAGEMENT FLOW CHART

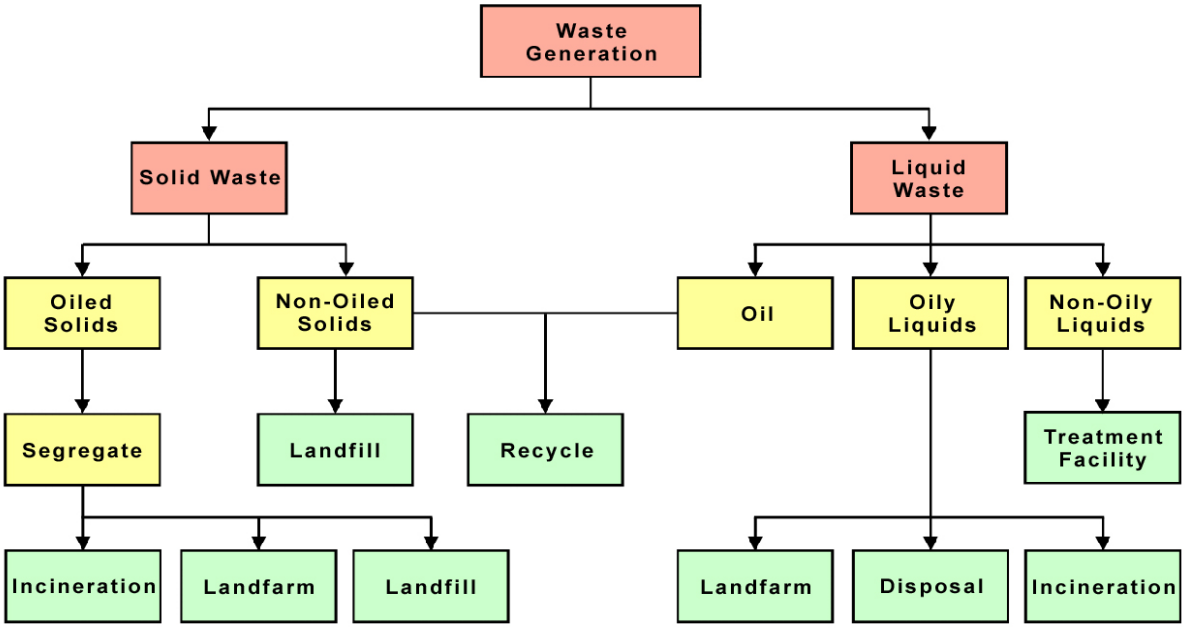


FIGURE 7.4-2 - GENERAL WASTE CONTAINMENT AND DISPOSAL CHECKLIST

CONSIDERATION	YES/NO/NA
Is the material being recovered a waste or reusable product?	
Has all recovered waste been containerized and secured so there is no potential for further leakage while the material is being stored?	
Has each of the discrete waste streams been identified?	
Has a representative sample of each waste stream been collected?	
Has the sample been sent to an approved laboratory for the appropriate analysis, (i.e. hazardous waste determination)?	
Has the appropriate waste classification and waste code number(s) for the individual waste streams been received?	
Has a temporary EPA identification number and generator number(s) been received, if they are not already registered with EPA?	
Have the services of a registered hazardous waste transporter been contracted, if waste is hazardous?	
If the waste is nonhazardous, is the transporter registered?	
Is the waste being taken to an approved disposal site?	
Is the waste hazardous or Class I nonhazardous?	

If the waste is hazardous or Class I nonhazardous, is a manifest being used?	
Is the manifest properly completed?	
Are all federal, state, and local laws/regulations being followed?	
Are all necessary permits being obtained?	
Has a Disposal Plan been submitted for approval/review?	
Has PPE and waste-handling procedures been included in the Site Safety and Health Plan to protect the health and safety of waste handling personnel?	

7.4.1 Waste Storage

During an oil spill, the volume of oil that can be recovered depends on the storage capacity available. Typical short-term (temporary) storage methods are provided in FIGURE 7.4-3. If storage containers such as bags or drums are used, the container should be clearly marked and/or color-coded to indicate the type of material or waste contained and/or the ultimate disposal option.

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

- Geology
- Soil
- Surface water
- Covered materials
- Climatic factor
- Toxic air emissions
- Access
- Ground water
- Flooding
- Slope
- Capacity
- Land use
- Security
- Public contact

FIGURE 7.4-3 - TEMPORARY STORAGE METHODS

CONTAINMENT	PRODUCT						
	OIL	OIL/WATER	OIL/SOIL	OIL/DEBRIS (Small)	OIL/DEBRIS (Medium)	OIL/DEBRIS (Large)	CAPACITY
Drums	X	X	X				0.2-0.5 yd^3
Bags		X	X	X			1.0-2.0 yd^3
Boxes		X	X	X			1-5 yd^3
Open top rolloff	X	X	X	X	X	X	8-40 yd^3
Roll top rolloff	X	X	X	X	X	X	15-25 yd^3
Vacuum box	X	X					15-25 yd^3

Frac tank	X	X					500-20,000 gal
Poly tank	X	X					200-4,000 gal
Vacuum truck	X	X	X				2,000-5,000 gal
Tank trailer	X	X					2,000-4,000 gal
Barge	X	X					3,000+ gal
Berm, 4 ft		X	X	X	X	X	1 yd^3
Bladders	X	X					25-1,500 gal

7.4.2 Waste Transfer

In most oil spill response operations, it would be necessary to transfer recovered oil and oil debris from one point to another several times before the oil and oily debris are ultimately disposed of at a state approved disposal site. Depending on the location of response operations, any or all of the following transfer operations may occur:

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

There are four general classes of transfer systems that could be employed to effect oily waste transfer operations. The following is a brief description of the four transfer systems:

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.

7.4.2 Waste Transfer, Continued

Vacuum Systems
Vacuum systems, such as air conveyors, vacuum trucks and portable vacuum units, may be used to transfer viscous oils and debris but they usually pick up a very high water/oil ratio.

Belt / Screw Conveyors
Conveyor 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 but are bulky and difficult to operate.

Wheeled Vehicles
Wheeled vehicles may be used to transfer liquid waste of oily debris to storage or disposal sites. These vehicles are readily available but have a limited rate (i.e., 100 bbls) and require good site access.

7.4.3 Waste Disposal

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

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

Recycling
Recycling involves processing discarded materials for another use.

Incineration
This technique entails the 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.

In-Situ Burning / Open Burning
Burning techniques entail igniting oil or oiled debris allowing it to burn under ambient conditions. These disposal techniques are subject to restrictions and permit requirements established by federal, state, and local laws. Permission for in-situ burning may be difficult to obtain when the burn takes place near populated areas.

As a general rule, in-situ burning 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 a approved landfill in accordance with regulatory procedures. Landfill disposal of free liquids is prohibited by federal law in the United States.

FIGURE 7.4-4 - FACILITY-SPECIFIC DISPOSAL LOCATIONS

MATERIAL	DISPOSAL FACILITY	LOCATION
Recovered Product	C&M Industries, Inc.	121 Republic Road Chesapeake, VA 23324
Contaminated Soil	Onyx Engineering Inc. (Attn: Nathan P.)	1550 Balmer Road P.O. Box 200 Model City, NY 14107
Contaminated Equipment	Onyx Engineering Inc. (Attn: Nathan P.)	1550 Balmer Road P.O. Box 200 Model City, NY 14107
Personnel Protective Equipment	Onyx Engineering Inc. (Attn: Nathan P.)	1550 Balmer Road P.O. Box 200 Model City, NY 14107
Decontamination Solutions	Onyx Engineering Inc. (Attn: Nathan P.)	1550 Balmer Road P.O. Box 200 Model City, NY 14107
Adsorbents and Spent Chemicals	Onyx Engineering Inc. (Attn: Nathan P.)	1550 Balmer Road P.O. Box 200 Model City, NY 14107

SECTION 8 Last Revised: May 2008

DEMOBILIZATION / POST-INCIDENT REVIEW

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8.1 Terminating the Response

8.2 Demobilization

Figure 8.2-1 - Demobilization Checklist

8.3 Post-Incident Review

Figure 8.3-1 - Standard Incident Debriefing Form

8.3.1 Final Spill Cleanup Report

8.1 TERMINATING THE RESPONSE

- A team of federal, state, and Company personnel must certify that each area is clean before halting cleanup operations.
- Demobilize equipment and personnel at the first opportunity in order to reduce cost.
- Consider which resources should be demobilized first; for example, berthing expenses can be saved by demobilizing out-of-area contractors before local ones.
- Equipment may need both maintenance and decontamination before being demobilized.
- All facilities (staging area, Command Post, etc.) should be returned to their pre-spill condition before terminating operations.
- Determine what documentation should be maintained, where, and for how long.
- Contract personnel may be more susceptible to "suffering" injuries as they approach termination.
- Some activities will continue after the cleanup ends; examples include incident debriefing, bioremediation, NRDA studies, claims, and legal actions.
- Consider expressing gratitude to the community, police department, fire department, and emergency crews for their work during the response.

8.2 DEMOBILIZATION

The Company can reduce costs considerably by developing a Demobilization Plan (**SECTION 5.8**). Therefore, emphasis must be placed on establishing efficient demobilization procedures. A Demobilization Checklist is provided in **FIGURE 8.2-1**.

FIGURE 8.2-1 - DEMOBILIZATION CHECKLIST

DEMOBILIZATION CHECKLIST	INITIALS	DATE/TIME STARTED	DATE/TIME COMPLETED
Assign personnel to identify surplus resources and probable release times.			
Establish demobilization priorities.			
Develop decontamination procedures.			
Initiate equipment repair and maintenance.			
Develop a Disposal Plan.			
Identify shipping needs.			
Identify personnel travel needs.			
Develop impact assessment and statements.			
Obtain concurrence of Planning and Operations Group Leaders before release of			

personnel or equipment.			

8.3 POST-INCIDENT REVIEW

All Facility personnel involved in the incident shall be debriefed (by the Company) within two weeks after termination of operations. A Standard Incident Debriefing Form is provided in **FIGURE 8.3-1**. The primary purpose of the post-incident review is to identify actual or potential deficiencies in the Plan and determine the changes required to correct the deficiencies. The post-incident review also is intended to identify which response procedures, equipment, and techniques were effective and which were not and the reason(s) why. This type of information is very helpful in the development of a functional Plan by eliminating or modifying those response procedures that are less effective and emphasizing those that are highly effective. This process should also be used for evaluating training drills or exercises. Key agency personnel that were involved in the response will be invited to attend the post-incident review.

Debriefs with participating agencies and organizations may be appropriate if unified command has been established during a spill and are required when significant Plan updates are identified or significant lessons can be recorded and implemented.

FIGURE 8.3-1 - STANDARD INCIDENT DEBRIEFING FORM

Name of incident:
Date:
PERSONNEL DEBRIEFED
Name:
Normal duty:
Summary of duties performed during incident (list date, time, and location):
Positive aspects of the response:

Aspects of the response which could be improved:
Name:
Title:
Signature:

8.3.1 Final Spill Cleanup Report

A final, comprehensive report shall be prepared by the Incident Commander or designee and forwarded to the Administrator within 90 days after completion of spill cleanup activities for internal use. It should be written in the narrative form and include the information listed below (as appropriate):

- Name, address, and telephone number of the owner or operator.
- Name, address, and telephone number of the Facility.
- Time, location, and date of discharge.
- Type of material discharged.
- Quantity discharged (indicate volume, color, length and width of slick, and rate of release, if continuous).
- Source of spill (tank, flowline, etc.) in which the oil was originally contained, path of discharge, and impact area.
- Detailed description of what actually caused the discharge and actions taken to control or stop the discharge.
- Estimated quantity and disposition of recovered material that resulted from the incident.
- Description of actual or potential hazards to human health or the environment.
- Steps taken to clean up the spilled oil along with dates and times steps were taken.
- The equipment used to remove the spilled oil, dates, and number of hours equipment was used.

- The number of persons employed in the removal of oil from each location, including their identity, employer, and the number of hours worked at that location.
- The extent of injuries, if any.
- Actions by the Company or contractors to mitigate damage to the environment.
- Measures taken by the Company or contractors to prevent future spills.
- The federal and state agencies to which the Company or contractors reported the discharge; show the agency, its location, the date and time of notification, and the official contacted.
- Description of the effectiveness of equipment and cleanup techniques and recommendations for improvement.
- The names, addresses, and titles of people who played a major role in responding to the event.
- A section identifying problems and deficiencies noted during the response event; a follow-up section should include recommended procedure modifications to make a future response more effective and efficient.

8.3.1 Final Spill Cleanup Report, Continued

- All other relative information.
- A final signature as follows:

The above information is true to the best of my knowledge and belief:

Name:
Title:
Signature:
Date:

Virginia Beach Terminal

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APPENDICES

A. **TRAINING / EXERCISES**

B. **CONTRACTOR RESPONSE EQUIPMENT**

C. SPCC PLANS

D. **HAZARD EVALUATION AND RISK ANALYSIS**

E. **CROSS-REFERENCES**

F. **ACRONYMS AND DEFINITIONS**

G. **ADDITIONAL INFORMATION**

APPENDIX A Last Revised: December 2008

TRAINING / EXERCISES

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A.1 Exercise Requirements and Schedules

Figure A.1-1 - PREP Response Plan Core Components

Figure A.1-2 - Exercise Requirements

Figure A.1-3 - Spill / Exercise Documentation Form

Figure A.1-4 - EPA Required Response Equipment Testing and Deployment Drill Log

Figure A.1-5 - Qualified Individual Notification Drill Log

Figure A.1-6 - Emergency Management Team Tabletop Exercise Log

A.2 Training Program

Figure A.2-1 - Training Requirements

Figure A.2-2 - PREP Training Program Matrix

Figure A.2-3 - Personnel Response Training Log

A.1 EXERCISE REQUIREMENTS AND SCHEDULES

- The Company participates in the National Preparedness for Response Exercise Program (PREP).
- During each triennial cycle, all components of the Plan (**FIGURE A.1-1**) must be exercised at least once.
- The HSE Managers or designee, is responsible for the following aspects:
    - Scheduling,
    - Maintaining records,
    - Implementing,
    - Evaluation of the Company's training and exercise program, and
    - Post-drill evaluation improvements.
- FIGURE A.1-2 provides descriptions of exercise requirements, FIGURE A.1-3 provides a Spill/Exercise Documentation form or a corresponding Company form may be used, and **FIGURE A.1-4** provides a log for response equipment testing and deployment drill.

FIGURE A.1-1 - PREP RESPONSE PLAN CORE COMPONENTS

CORE COMPONENTS	DESCRIPTION
1. Notifications	Test the notifications procedures identified in the Area Contingency Plan (ACP) and the Spill Response Plan.
2. Staff mobilization	Demonstrate the ability to assemble the spill response organization identified in the ACP and the Spill Response Plan.
3. Ability to operate within the response management system described in the Plan: • Unified Command • Response management system	Demonstrate the ability of the spill response organization to work within a unified command. Demonstrate the ability of the response organization to operate within the framework of the response management system identified in their respective plans.
4. Source control	Demonstrate the ability of the spill response organization to control and stop the discharge at the source.
5. Assessment	Demonstrate the ability of the spill response organization to provide initial assessment of the discharge and provide continuing assessments of the effectiveness of the tactical operations.

6. Containment	Demonstrate the ability of the spill response organization to contain the discharge at the source or in various locations for recovery operations.
7. Recovery	Demonstrate the ability of the spill response organization to recover, mitigate, and remove the discharged product includes mitigation and removal activities.
8. Protection	Demonstrate the ability of the spill response organization to protect the environmentally and economically sensitive areas identified in the ACP and the respective industry response plan.
9. Disposal	Demonstrate the ability of the spill response organization to dispose of the recovered material and contaminated debris.
10. Communications	Demonstrate the ability to establish an effective communications system throughout the scope of the Plan for the spill response organization.
11. Transportation	Demonstrate the ability to establish effective multi-mode transportation both for execution of the discharge and support functions.
12. Personnel support	Demonstrate the ability to provide the necessary logistical support of all personnel associated with response.
13. Equipment maintenance and support	Demonstrate the ability to maintain and support all equipment associated with the response.
14. Procurement	Demonstrate the ability to establish an effective procurement system.
15. Documentation	Demonstrate the ability of the spill response organization to document all operational and support aspects of the response and provide detailed records of decisions and actions taken.

FIGURE A.1-2 - EXERCISE REQUIREMENTS

EXERCISE TYPE	EXERCISE CHARACTERISTICS
Facility/QI notification	• Conducted quarterly. • The facility initiates mock spill notification to QI. • The Qualified Individual documents time/date of notification, name, and phone number of individual contacted. • Document in accordance with form in **FIGURE A.1-3**.
Equipment deployment	• Conducted semiannually. • Response contractors listed in the plan must participate in annual deployment exercise. • An exercise where response equipment is deployed to a specific site and operated in its normal operating medium. • Document in accordance with form in **FIGURE A.1-3**.

EMT tabletop	• Conducted annually. • Tests EMT's response activities/responsibilities. • Documents Plan's effectiveness. • Must exercise worst case discharge scenario once every three years. • Must test all Plan components at least once every three years • Document in accordance with form in **FIGURE A.1-3**.
Unannounced	• Company will either participate in unannounced tabletop exercise or equipment deployment exercise on an annual basis, if selected. • Company may take credit for participation in government-initiated unannounced drill in lieu of drill required by PREP guidelines. • Plan holders who have participated in a PREP government-initiated unannounced exercise will not be required to participate in another one for at least 36 months from the date of the exercise.
Area	• An industry plan holder that participates in an Area Exercise would not be required to participate in another Area Exercise for a minimum of six years.
OTHER EXERCISE CONSIDERATIONS	
Drill program evaluation procedures	• Company conducts post-exercise meetings to discuss positive items, areas for improvement, and to develop action item checklist to be implemented later.
Records of drills	• Company will maintain exercise records for five years following completion of each exercise. • Records will be maintained at the terminal via company electronic documentation system. • Company will verify appropriate records are kept for each spill response contractor listed in Plan as required by PREP guidelines (annual equipment deployment drill, triennial unannounced drill, etc.).

FIGURE A.1-3 - SPILL / EXERCISE DOCUMENTATION FORM

Retain this form for a minimum of five years (Other versions of this form may be used).

1. Date(s) performed:
2. ☐ Exercise ☐ Actual spill

If exercise:

☐ Announced ☐ Unannounced ☐ Deployment ☐ Notification ☐ Tabletop

If exercise, frequency:

☐ Quarter ☐ 1st ☐ 2nd ☐ 3rd ☐ 4th ☐ Annual

3. Location of exercise/spill:

4. Time started:

5. Description of scenario or spill including volume and content (crude oil, condensate, etc.):

6. Describe how the following objectives were exercised:

Team's knowledge of the Oil Spill Response Plan:		
	Yes	**No**
Was briefing meeting conducted:	☐	☐
Established field Command Post:	☐	☐
Confirmed source was stopped:	☐	☐
Developed Site Safety and Health Plan:	☐	☐
Prepared ICS 201:	☐	☐
Established work zones and perimeter security:	☐	☐
Developed short range tactical plan:	☐	☐
Developed long range tactical plan:	☐	☐
Proper Notifications:		
Qualified Individual (or designee):	☐	☐
Terminal Manager:	☐	☐
Release/Spill Report Form completed:	☐	☐
Notification to agencies completed (attach log):	☐	☐
Transportation/Communication System:		

Established primary/secondary communication system:	☐	☐
Primary: ☐ cellular phone ☐ two way radio ☐ land telephone line		
Secondary: ☐ cellular phone ☐ two way radio ☐ land telephone line		
☐ Other		

FIGURE A.1-3 - SPILL / EXERCISE DOCUMENTATION FORM, CONTINUED

Transportation/Communication System, Continued:		
	Yes	**No**
Motor vessel deployed:	☐	☐
Provider name:		
Helicopter/Sea plane deployed:	☐	☐
Call sign:		
Describe function (i.e., transportation, surveillance, dispersant application):		
Ability to access contracted Oil Spill Removal Organizations (OSROs):		
Who contacted - (name of individual and OSRO):		
When contacted:		
Response time projection for deployment:		
Type and amount of containment used:		
Spill material recovered:	☐	☐
Spilled material disposed:	☐	☐
Where?		
Ability to coordinate spill response with on-scene coordinator, state, and applicable agencies:		
Was regulatory on-scene coordinator(s) contacted:	☐	☐

List person and agency represented:		
Ability to access sensitive site and resource information in the Area Contingency Plan (ACP):		
Was pre-impact assessment conducted:	☐	☐
Were pre-impact samples taken:	☐	☐
Were pre-impact photographs taken:	☐	☐
Were NRDA specialists mobilized:	☐	☐
Were deficiencies identified:	☐	☐
If yes, changes implemented:	☐	☐
If no, why were changes not implemented:		

LESSONS LEARNED	PERSON RESPONSIBLE FOR FOLLOW-UP OF CORRECTIVE MEASURES

Name:
Position:
Certifying Signature:

FIGURE A.1-4 - EPA REQUIRED RESPONSE EQUIPMENT TESTING AND DEPLOYMENT DRILL LOG

(Other versions of this form may be used)

Item:	Date of Last Update:
ACTIVITY	**INFORMATION**
Last inspection or response equipment test date	
Inspection frequency	
Last deployment drill date	
Deployment frequency	

OSRO Certification (if applicable)	

Item:	Date of Last Update:
ACTIVITY	**INFORMATION**
Last inspection or response equipment test date	
Inspection frequency	
Last deployment drill date	
Deployment frequency	
OSRO Certification (if applicable)	

Item:	Date of Last Update:
ACTIVITY	**INFORMATION**
Last inspection or response equipment test date	
Inspection frequency	
Last deployment drill date	
Deployment frequency	
OSRO Certification (if applicable)	

Item:	Date of Last Update:
ACTIVITY	**INFORMATION**
Last inspection or response equipment test date	
Inspection frequency	
Last deployment drill date	
Deployment frequency	
OSRO Certification (if applicable)	

FIGURE A.1-5 - QUALIFIED INDIVIDUAL NOTIFICATION DRILL LOG

(Other versions of this form may be used)

Company:	Date:
ACTIVITY	**INFORMATION**
Qualified Individual(s) Contacted	
Evaluation	
Changes to be Implemented	
Time Table for Implementation	

Company:	Date:
ACTIVITY	**INFORMATION**
Qualified Individual(s) Contacted	
Evaluation	
Changes to be Implemented	
Time Table for Implementation	

Company:	Date:
ACTIVITY	**INFORMATION**
Qualified Individual(s) Contacted	
Evaluation	
Changes to be Implemented	
Time Table for Implementation	

Company:	Date:
ACTIVITY	**INFORMATION**
Qualified Individual(s) Contacted	
Evaluation	
Changes to be Implemented	
Time Table for Implementation	

FIGURE A.1-6 - EMERGENCY MANAGEMENT TEAM TABLETOP EXERCISE LOG

(Other versions of this form may be used)

Company:	Date:
ACTIVITY	**INFORMATION**
Emergency Scenario	
Evaluation	
Changes to be Implemented	
Time Table for Implementation	

Company:	Date:
ACTIVITY	**INFORMATION**
Emergency Scenario	
Evaluation	
Changes to be Implemented	
Time Table for Implementation	

Company:	Date:
ACTIVITY	**INFORMATION**
Emergency Scenario	
Evaluation	
Changes to be Implemented	
Time Table for Implementation	

Company:	Date:
ACTIVITY	**INFORMATION**
Emergency Scenario	
Evaluation	
Changes to be Implemented	
Time Table for Implementation	

A.2 TRAINING PROGRAM

FIGURE A.2-1 provides training requirements for spill responders. **FIGURE A.2-2** provides the program matrix. **FIGURE A.2-3** provides a personnel response training log.

FIGURE A.2-1 - TRAINING REQUIREMENTS

TRAINING TYPE	TRAINING CHARACTERISTICS
Training in use of spill response plan	• All field personnel will be trained to properly report/monitor spills. • Plan will be reviewed annually with employees. • The Personnel Response Training Log is located in **FIGURE A.2-3**.
OSHA training requirements	• All Company responders designated in Plan must have 24 hours of initial spill response training. • Laborers having potential for minimal exposure must have 24 hours of initial oil spill response instruction and eight hours of actual field experience. • Responders having potential exposure to hazardous substances at levels exceeding permissible exposure limits must have 40 hours of initial training offsite and 24 hours of actual field experience. • On-site management/supervisors required to receive same training as equipment operators/general laborers plus eight hours of specialized hazardous waste management training. • Managers/employees require eight hours of annual refresher training.

Spill management team personnel training	• See recommended PREP Training Matrix (FIGURE A.2-2).
Training for casual laborers or volunteers	• Company will not use casual laborers/volunteers for operations requiring HAZWOPER training.
Wildlife	• Only trained personnel approved by USFWS and appropriate state agency will be used to treat oiled wildlife.
Training documentation and record maintenance	• Training activity records will be retained for five years for all personnel following completion of training. • Company will retain training records indefinitely for individuals assigned specific duties in the Plan. • Training records will be maintained at the Corporate Headquarters.

FIGURE A.2-2 - PREP TRAINING PROGRAM MATRIX

TRAINING ELEMENT	QUALIFIED INDIVIDUAL (QI)	EMERGENCY MANAGEMENT TEAM (EMT)	FACILITY PERSONNEL
Captain of the Port (COTP) Zones or Environmental Protection Agency (EPA) Regions in which the facility is located	x	x	x
Notification procedures and requirements for facility owners or operators, internal response organizations, federal and state agencies, and contracted oil spill removal organizations (OSROs) and the information required for those organizations	x	x	x
Communication system used for the notifications	x	x	x
Information on the products stored, used, or transferred by the facility, including familiarity with the material safety data sheets (MSDS), special handling procedures, health and safety hazards, spill and fire fighting procedures	x	x	x
Procedures the facility personnel may use to mitigate or prevent any discharge or a substantial threat of a discharge of oil resulting from facility operational activities associated with internal or external cargo transfers, storage, or use	x		

Facility personnel responsibilities and procedures for use of facility equipment which may be available to mitigate or prevent an oil discharge	x	x	x
Operational capabilities of the contracted OSROs to respond small, medium, and large discharges	x	x	x
Responsibilities and authority of the Qualified Individual (QI) as described in the Spill Response Plan and Company response organization	x	x	x
The organization structure that will be used to manage the response actions including: • Command and control • Public information • Safety • Liaison with government agencies • Spill response operations • Planning • Logistics support • Finance	x	x	x
The responsibilities and duties of each Emergency Management Team (EMT) within the organization structure	x	x	
The drill and exercise program to meet federal and state regulations as required under Oil Pollution Act of 1990 (OPA 90)	x	x	x
The role of the QI in the post discharge review of the Plan to evaluate and validate its effectiveness	x		
The Area Contingency Plan (ACP) for the area in which the facility is located	x	x	x
The National Contingency Plan (NCP)	x	x	x
Roles and responsibilities of federal and state agencies in pollution response	x	x	x

FIGURE A.2-2 - PREP TRAINING PROGRAM MATRIX, CONTINUED

TRAINING ELEMENT	QUALIFIED INDIVIDUAL (QI)	EMERGENCY MANAGEMENT TEAM (EMT)	FACILITY PERSONNEL
Available response resources identified in the Plan	x	x	

Contracting and ordering procedures to acquire OSRO resources identified in the Plan	x	x	
OSHA requirements for worker health and safety (29 CFR 1910.120)	x	x	x
Incident Command System/Unified Command System	x	x	
Public affairs	x	x	
Crisis management	x	x	
Procedures for obtaining approval for dispersant use or in-situ burning of the spill	x		
Oil spill trajectory analyses	x		
Sensitive biological areas	x	x	
This training procedure as described in the Plan for members of the EMT		x	
Procedures for the post discharge review of the plan to evaluate and validate its effectiveness		x	
Basic information on spill operations and oil spill cleanup technology including: • Oil containment • Oil recovery methods and devices • Equipment limitations and uses • Shoreline cleanup and protection • Spill trajectory analysis • Use of dispersants, in-situ burning, bioremediation • Waste storage and disposal considerations		x	
Hazard recognition and evaluation		x	
Site safety and security procedures		x	
Personnel management, as applicable to designated job responsibilities		x	
Procedures for directing the deployment and use of spill response equipment, as applicable to designated job responsibilities		x	x
Specific procedures to shut down effected operations			x
Procedures to follow in the event of discharge, potential discharge, or emergency involving the following equipment or scenarios: • Tank overfill			x

Tank rupture • Piping or pipeline rupture • Piping or pipeline leak, both under pressure or not under pressure, if applicable • Explosion or fire • Equipment failure • Failure of secondary containment system			
QI's name and how to contact him or her			x

FIGURE A.2-3 - PERSONNEL RESPONSE TRAINING LOG

Training records are maintained at the terminal office (Other versions of this form may be used).

NAME	RESPONSE TRAINING/DATE AND NUMBER OF HOURS	PREVENTION TRAINING/DATE AND NUMBER OF HOURS

*Qualified Individual

APPENDIX B Last Revised: May 2008

CONTRACTOR RESPONSE EQUIPMENT

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B.1 Cooperatives and Contractors

B.1.1 OSRO Classification

Figure B.1-1 - Evidence of Contracts and Equipment Lists

B.1 COOPERATIVES AND CONTRACTORS

The Company has contracted with additional Oil Spill Removal Organizations (OSROs) to provide personnel and equipment in the event of a spill. The classification, response capabilities, and equipment are described below.

B.1.1 OSRO Classification

The OSRO classification process was developed by the U.S. Coast Guard (USCG) to provide guidelines to enable USCG and plan preparers to evaluate an OSRO's potential to respond to oil spills. Plan holders that utilize USCG classified OSRO services are not required to list response resources in their plans.

The following is a listing of the USCG classified OSROs that may respond to incidents for areas listed in this Plan. For a detailed listing of USCG classified OSROs and other contractors by terminal, refer to **FIGURE 3.1-6** and **FIGURE 7.1-1**.

COMPANY / CONTRACTOR / TERM	APPLICABLE COTP ZONE (S)	USCG CLASSIFICATIONS	RESPONSE TIME
Moran Environmental Recovery 1901 Brown Ave Norfolk VA 23504 Term of contract: To	Hampton Roads	Facilities: MM, W1, W2, W3 / Vessels: MM, W1, W2, W3 River/Canal: ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ Inland: ✓ ✓ ✓ ✓ ✓ ✓ ✓ Open Ocean Offshore Nearshore Great Lakes	1 hours
Clean Harbors Environmental Services 804 J Industrial Avenue Chesapeake Virginia 23324 Term of contract: To	Hampton Roads	Facilities: MM, W1, W2, W3 / Vessels: MM, W1, W2, W3 River/Canal: ✓ ✓ ✓ ✓ ✓ ✓ Inland: ✓ ✓ ✓ ✓ ✓ ✓ Open Ocean Offshore Nearshore Great Lakes	1 hours

The following contractors are retained by the Company, but are not USCG classified OSROs within this Area:

FIGURE 7.1-1 provides both OSRO and non-OSRO summarized equipment lists and response times.

FIGURE B.1-1 provides evidence of contracts with OSROs and equipment lists for contractors without USCG classification.

FIGURE B.1-1 - EVIDENCE OF CONTRACTS AND EQUIPMENT LISTS

- **Clean Harbors Environmental Services, Chesapeake,Virginia**
- **Moran Environmental Recovery, Norfolk,VA**

APPENDIX C Last Revised: May 2008

SPCC PLANS

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Figure C-1 - Professional Engineer Certification

Figure C-2 - Management Approval and Review

Figure C-3 - Record of Reviews

Figure C-4 - SPCC Plan

Figure C-5 - Tank Tables

Figure C-6 - Addendum

Figure C-7 - Drainage Diagram

Figure C-8 - Evacuation Diagram

Figure C-9 - Piping Diagram

Figure C-10 - Containment Calculation

Figure C-11 - Discharge Prevention Meeting Log

Figure C-12 - Inspection Procedures

Figure C-13 - Annual Inspection Record

Figure C-14 - Secondary Containment Drainage Log

Figure C-15 - Reportable Spill History

Figure C-16 - Containment and Drainage Planning

FIGURE C-1 - PROFESSIONAL ENGINEER CERTIFICATION

40 CFR, Part 112.3(d) Professional Engineer Certification	
Being familiar with the provisions of 40 CFR, Part 112, I attest to the following: • I am familiar with the requirements of this part. • I or my agent has visited and examined the Facility. • The Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards, and with the requirements of this part. • Procedures for required inspections and testing have been established. • The Plan is adequate for the Facility. **Note: Certification is conditional pending satisfactory resolution of the required improvements listed in FIGURE C-6.**	
Printed Name of Registered Professional Engineer:	Daniel J. Shea
Signature of Registered Professional Engineer:	
Date:	5/15/2008
Registration No.:	61084, Texas
Seal: 	

FIGURE C-2 - MANAGEMENT APPROVAL AND REVIEW

I hereby approve the contents of the Facility's Spill Prevention, Control, and Countermeasure Plan (SPCC Plan) and have the authority to commit the necessary resources to implement the SPCC Plan, as set forth in this document, in accordance with the federal requirements of 40 CFR Part 112.

Name:	Ken Seals	**Signature:**	
Title:	Terminal Manager	**Date:**	5/15/2008

FIGURE C-3 - RECORD OF REVIEWS

RECORD OF REVIEWS					
Date of Review[1]		**Will Plan Need Amendment?[2]**	**Reviewer's Name[3]**	**Reason for Amendment[4]**	**Date of Amendment (or N/A)**
Full	**Partial**	**Yes / No**			
	10/25/2011	Yes	Dan Shea PE 61084, Texas	Technical Amendment: 40 CFR 112.8(c)(6) We have incorporated by reference the Steel Tank Institute's SP001 Standard in our SPCC Plan. Effective 11/11/11 this is the method we will employ to comply with the integrity inspection and testing requirements for small tanks (50,000 gallons to 50 gallons) of the SPCC Regulations.	10/25/2011

[1] A full review of the plan must be performed at least once every five years.

[2] The SPCC plan must be amended when there is a change in the facility design, construction, operation, or maintenance that materially affects its potential for a discharge. Examples include, but are not limited to: commissioning or decommissioning containers; replacement, reconstruction, or movement of containers; reconstruction, replacement, or installation of piping systems; construction or demolition that might alter secondary containment structures; changes of product or service; or revision of standard operation or maintenance procedures. An amendment made must be prepared within six months of the change, and implemented as soon as possible, but not later than six months following preparation of the amendment.

[3] Reviewer's name indicates that he/she has completed review and evaluation of the SPCC plan for Virginia Beach Terminal on the date indicated and will or will not amend the plan as a

result, as indicated.

[4] Briefly describe reasons for plan amendment. These may include one or more of the reasons in footnote 2, above, administrative changes such as updates to names or phone numbers, regulatory changes, or changes in Company policies.

FIGURE C-4 - SPCC PLAN

FACILITY INFORMATION			
Name of Facility:	Virginia Beach Terminal	**Type of Facility:**	Onshore/Non-Production
Location of Facility:	3924 North Landing Road Virginia Beach, VA 23456	**Name & Address of Owner or Operator:**	,
(b) (7)(F) [redacted]		**Designated Personnel Accountable for Oil Spill Prevention at the Facility:**	Kenneth Seals and Clifford Bell
Personnel Accountable for Training at the Facility:	Kenneth Seals and Clifford Bell		
General Facility Description:	ICW Milepost Marker: 2 The Facility stores jet/kerosene and has a total storage capacity of approximately 40,000 barrels with an average storage volume of 20,000 barrels. Product is received via vessel and distributed by pipeline. Shipments are received by the Terminal via barge. Shipments are delivered to Oceana NAS by the Terminal via the Company-owned onshore transmission pipeline. The annual volume in petroleum product transfers is approximately 250,000 bbls. The Terminal has the ability to ship JP5 Jet Fuel to Oceana Naval Air Station via the Company-owned onshore transmission pipeline. The pipeline is buried in trenches to protect it from external disturbances with a 3-foot minimum cover in the right-of-ways. The pipeline is 8.85 miles long, with a 6.62-inch diameter, and passes along the North Landing Road and Princess Anne Road along its path from the Terminal to Oceana Naval Air Station. The pipeline is coated, and equipped with cathodic protection and leak detection systems 1963 - (b) (7)(F) [redacted]) are re-erected on-site. 1985 - Miscellaneous (recovery) tank (200 bbls.) is installed on-site. 1992 - Product recovery tank (7 bbls. is installed on-site. 1998 - Dock house is built on dock platform; dock product recovery tank is modified. 2003 - Spill response boat and shed are installed at dock platform.		

FIGURE C-4 - SITE SPECIFIC SPCC PLAN, CONTINUED

40 CFR, 112.7
(a) GENERAL REQUIREMENTS
(1) Include a discussion of your facilities conformance with the requirements listed in this part
• The specific requirements are detailed in bulleted responses below.
(2) Comply with all applicable requirement listed in this part. Your Plan may deviate from some requirements if you provide additional protection or explanation
• All requirements are addressed below. Where deviations occur, an equivalent environmental protection is described in detail.
(3) Describe in your Plan the physical layout of the facility and include a facility diagram. You must also address in your plan:
• The facility is an Onshore/Non-Production facility; refer to FIGURE C-7 for the facility diagram.
i.The type of oil in each container and its storage capacity
• Refer to FIGURE C-5 for the Tank Table.
ii.Discharge prevention measures
• Entire plan.
iii.Discharge or drainage controls
• Refer to APPENDIX C 40 CFR 112.8 (b).
iv.Countermeasures for discharge
• Refer to SECTION 2.
v.Methods of disposal
• Refer to FIGURE 7.4 Waste Management.
vi.Contact list and phone numbers
• Refer to FIGURE 3.1-5 and FIGURE 3.1-6.
(4) Unless you have submitted a response plan, provide information and procedures to report a discharge
• A Facility Response Plan (FRP) has been submitted to the regional administrator.
(5) Unless you have submitted a response plan, describe procedures you will use when a discharge occurs
• A Facility Response Plan (FRP) has been submitted to the regional administrator.
(b) PREDICTION OF THE DIRECTION, RATE OF FLOW, AND TOTAL QUANTITY OF OIL WHICH COULD BE DISCHARGED FROM THE FACILITY AS A RESULT OF EACH TYPE OF MAJOR EQUIPMENT FAILURE
• For tanks refer to Tank Table, FIGURE C-5, and 40 CFR 112.8(d).
• This terminal has piping entering the facility from the marine dock. This pipeline flows into the incoming pipeline manifold, from which product is distributed to the storage tanks. From the storage tanks, there is station piping, and an associated pig trap facility, for delivery of product to customers.
• The marine piping, within the bounds of the terminal, and the associated incoming pipeline manifold could experience a spill.
• The rate of spillage from the incoming marine dock piping and associated appurtenances would be variable, depending upon the component that failed, flow rate, and size of the breach. The worst case is estimated at 350 gpm, based on the maximum pumping rate of the dock pipeline.
• The immediate direction of flow would vary depending upon which pipe segment ruptured, but the flow would ultimately travel toward the south.
• The total amount of fluid spilled would be variable, depending upon the rate and duration

	of the release. Refer to the Terminal Facility Response Plan for potential discharge scenarios.

FIGURE C-4 - SITE SPECIFIC SPCC PLAN, CONTINUED

40 CFR, 112.7	
(b) PREDICTION OF THE DIRECTION, RATE OF FLOW, AND TOTAL QUANTITY OF OIL WHICH COULD BE DISCHARGED FROM THE FACILITY AS A RESULT OF EACH TYPE OF MAJOR EQUIPMENT FAILURE	
	• The station discharging piping, and the associated pig trap, could experience a spill.
	• The rate of spillage from the discharge piping and associated appurtenances would be variable, depending upon the component that failed, flow rate, and size of the breach. The worst case is estimated at 350 gpm, based on the maximum pumping rate.
	• The immediate direction of flow would vary depending upon which pipe segment ruptured, but the flow would ultimately travel toward the south.
	• The total amount of fluid spilled would be variable, depending upon the rate and duration of the release. Refer to the Terminal Facility Response Plan for potential discharge scenarios.
(c) PROVIDE APPROPRIATE CONTAINMENT	
	• For tanks refer to Tank Table, FIGURE C-5, and 40 CFR 112.8(b) and (c).
	• A spill from the marine pipeline, and the associated incoming pipeline manifold, outside of the product tank secondary containment would be handled as listed in Sections 112.8(b)(3) and (4) of this Plan.
	• A spill from the discharge piping, and the associated pig trap, outside of the product tank secondary containment would also be handled as listed in Sections 112.8(b)(3) and (4) of this Plan.
	• The Terminal Facility Response Plan was designed to plan for this type spill scenario. Refer to the FRP for details on the handling of spillage from this pipeline and associated appurtenances.
	• Any piping, and associated appurtenances, that spilled inside the product tank secondary containment would be contained therein.
(d) CONTINGENCY PLANNING	
(1) An oil spill contingency plan following the provisions of part 109 of this chapter	
	• This is not applicable because a response plan under 112.20 has been submitted for this Facility.
(e) INSPECTIONS, TESTS, AND RECORDS	
	• Monthly inspections are performed which include checklist items covering storage tanks, pumps, pipelines, valves, fittings, fence perimeter and general security.
	• Product handling equipment is inspected for signs of leakage or potential leakage. Spill containment impoundments are inspected to verify for the presence of oil.
	• Terminal personnel perform regular inspections of facility equipment, operations and spill containment areas. Inspections are performed in accordance with written procedures detailed on each inspection sheet.
	• The Company has developed a tank inspection program for all storage tanks in accordance with the API 653 Standard. As tanks become available, clean and gas free, the

Company will contract with a certified API 653 inspector to perform a complete thorough inspection of the tank.
• An API 653 inspection includes performing non-destructive testing of the tank steel to verify corrosion conditions. The API 653 inspection reports are maintained at the office of the terminal manager.
• When measurements or tank conditions are found to be out of API 653 specifications, the necessary repair work will be completed prior to returning the tank to operational service.
• Inspection and testing records are made part of this plan, but kept at the office of the terminal manager. All inspection records associated with this SPCC plan will be maintained for a period of three years.

FIGURE C-4 - SITE SPECIFIC SPCC PLAN, CONTINUED

40 CFR, 112.7
(e) INSPECTIONS, TESTS, AND RECORDS
• The facility manager or his designee will sign the inspections required by this SPCC Plan. Examples of these inspections can be found in this plan.
• Integrity testing will follow the guidelines listed above and examples of these records documenting the testing can be found in the appendices to this plan.
(f) PERSONNEL TRAINING AND DISCHARGE PREVENTION PROCEDURES
(1) PERSONNEL TRAINING
• Annually the Company will provide update training in the form of on-site meetings with all employees. Employee training will include review and instruction in each of the following categories:
• The Company has developed an employee-training program that addresses proper operation and maintenance of equipment to prevent the release of oil into navigable waters.
• The Company provides initial awareness training to all employees prior to the employee commencing operational duties. The employees are informed of the SPCC Plan, the purpose of the plan, and proper pollution prevention practices.
• The overall purpose of this training program is ensuring that employees are kept informed of current operational procedures, and applicable spill prevention methods.
• Review of the terminal's SPCC Plan, new revised regulations / laws / instructions, safe handling of hazardous materials, review of product storage and transfer operations, and recognize and identify pollution prevention opportunities.
(2) DESIGNATED PERSON
• Refer to Facility Information above for the "Designated Personnel Accountable for Oil Spill Prevention at the Facility"
(3) SPILL PREVENTION BRIEFINGS
• In addition to the regular employee training, the Company will schedule annual briefings to assure that employees have current knowledge of spill prevention techniques and associated equipment.
• The record of these briefings will be documented using the form included with this SPCC Plan.
• Employees are instructed in applicable pollution control laws, rules, and regulations.

(b) (7)(F) [redacted]

(b) (7)(F)

[redacted]

(b) (7)(F)

[redacted]

(b) (7)(F)

(h) FACILITY TANK CAR AND TANK TRUCK LOADING/UNLOADING RACK
(1) TRANSFER AREA DRAINAGE
• There are NO Tank Car or Tank Truck Loading/Unloading facilities at this terminal. All products are delivered to the facility by vessel and delivered to Oceana NAS by DOT pipeline.
(2) INTERLOCKED WARNING LIGHT OR PHYSICAL BARRIER
• Not Applicable
(3) TRUCK DRAIN / OUTLET EXAMINATION
• Not Applicable
(i) BRITTLE FRACTURE EVALUATION REQUIREMENTS
• The storage containers at this Facility are currently in light liquid service, except for the new floor in tank #2002, there have been no major tank repairs or modifications that might affect the structural integrity of the steel.

FIGURE C-4 - SITE SPECIFIC SPCC PLAN, CONTINUED

40 CFR, 112.7
(i) BRITTLE FRACTURE EVALUATION REQUIREMENTS
• Facility management is aware that in the event modifications are made to storage containers, an evaluation must occur to determine if the structural integrity of the container is sufficient to safely manage the material to be stored and prevent brittle fracture or catastrophic failure.
• The Facility follows a program to inspect all storage tanks according to API 653 standards. The API 653 inspections will include structural steel evaluation.
(j) STATE DISCHARGE PREVENTION REQUIREMENTS
• Any facility with an aggregate oil storage capacity of 25,000 gallons or more must submit an oil discharge contingency plan.
(k) QUALIFIED OIL-FILLED OPERATIONAL EQUIPMENT
• Not Applicable
(1) Qualification Criteria--Reportable Discharge History
• Not Applicable
(2) Alternative Requirements to General Secondary Containment
• Not Applicable
(i) Establish and document the facility procedures for inspections or a monitoring program to detect equipment failure and/or a discharge; and
• Not Applicable
(ii) Unless you have submitted a response plan under Â§112.20, provide in your Plan the following:

• Not Applicable
(A) An oil spill contingency plan following the provisions of part 109 of this chapter.
• Not Applicable
(B) A written commitment of manpower, equipment, and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful.
• Not Applicable

FIGURE C-4 - SITE SPECIFIC SPCC PLAN, CONTINUED

40 CFR, 112.8
(a)GENERAL REQUIREMENTS
• The specific requirements are detailed in bulleted responses below.
(b) FACILITY DRAINAGE
(1) DRAINAGE FROM DIKED AREAS
• All drain valves associated with containment systems will remain closed and securely locked except when discharging. Drainage of containment areas will be performed manually by opening dike drain valves or utilizing portable pumps.
• Prior to discharge, terminal personnel will inspect accumulated storm water, and verify that water is clear and free of oil sheen. If sheen is observed, proceed to treat water using sorbents.
• Company personnel are directed to not discharge storm water if contamination is found.
(2) DRAIN VALVES
• These valves are maintained in a closed position except when discharging. When closed the valves will be locked to prevent unauthorized discharge of the diked areas.
• All diked areas are visually inspected prior to opening the drain valves.
• The drain valves are constructed of steel, and are manually operated rising-stem gate valves.
(3) FACILITY DRAINAGE SYSTEM FROM UNDIKED AREAS
• All storage of oil at this Facility is addressed with secondary containment.
• The environmental equivalence is invoked for aboveground and underground piping and its associated appurtenances located outside of containment walls and flow through process equipment.
• One reason for deviation from designing for these type of systems to flow into ponds, lagoons, or catchment basins is the impracticability of channeling releases from such facilities into a predetermined path. Pipelines and flow through process equipment under line pressure have the potential to rease oil in any direction and in varying distances.
• Equivalent or better environmental protection is achieved by additional training of operations personnel in recognizing and properly reacting to potential release scenarios, primarily in the use of Emergency Shutdown (ESD) systems to minimize release volumes.
• For the type of facilities addressed here, Company operations personnel and oil spill response contractors (OSRO) personnels' enhanced training and drills in association with the Facility Response Plan (FRP) provides equivalent environmental protection.
• The Company has analyzed the undiked areas and areas that are not provided with spill containment.
(4) DIVERSION SYSTEM
• As in the environmental equivalences listed for 40 CFR 112.8(b)(3), the physical

facilities that apply here are the same. All oil storage containers are addressed by secondary containment as are transfers between modes of transportation.
• Providing all Facility outfall ditches with a system that would retain oil at the Facility is impractical for potential leaks from the pipeline (and appurtenances) outside containment and the tanker trucks outside of the rack areas. It is impractical due to the topography of the Terminal and the numerous and varied areas of potential release from these types of facilities.
• Some of the runoff at this site is sheet flow which would not be captured by the design listed in 40 CFR 112.8(b)(4). Additionally, underground piping releases would certainly not be captured by such design either.
• Equivalent or better environmental protection is achieved by additional training of operations personnel in recognizing and properly reacting to potential release scenarios, primarily in the use of Emergency Shutdown (ESD) systems to minimize release volumes.
• For the type of facilities addressed here, Company operations personnel and oil spill response contractors (OSRO) personnels' enhanced training and drills in association with the Facility Response Plan (FRP) provides equivalent environmental protection.
(5) TREATED DRAINAGE WATERS
• Not Applicable
(c) BULK STORAGE CONTAINERS
(1) CONTAINER CONSTRUCTION AND MATERIALS
• All bulk storage tanks are constructed of welded steel to meet API 650 or 653 standards (relating to oil storage tank construction). All tank material and cosntruction is compatible with the product stored.

FIGURE C-4 - SITE SPECIFIC SPCC PLAN, CONTINUED

40 CFR, 112.8
(c) BULK STORAGE CONTAINERS
(1) CONTAINER CONSTRUCTION AND MATERIALS
• Welded steel tanks are considered industry standard for storage of petroleum products.
• These tanks are operated following API 650 or 653 standards for tanks that store petroleum products at 1.0 specific gravity, ambient temperature, and ambient pressure.
(2) SECONDARY CONTAINMENT
• The dike is constructed to contain the volume of the largest tank, plus a sufficient allowance for rainfall. The NOAA data for the 25-year/24-hour storm event is used for rainfall calculations.
• The bulk storage tanks are provided with secondary containment in the form of a compacted clay dike.
• Based on field inspection and operations/historical information, the compacted earthen dike is sufficiently impervious to prevent spilled oil from reaching navigable waters before it can be removed/remediated.
(3) RAINWATER DRAINAGE
• Inspect accumulated storm water. Verify that water is clear and free of oil sheen. If sheen is observed, proceed to treat water using sorbent material. Do not discharge storm water if contaminated.
• Periodically monitor water quality of effluent as discharge continues. If water quality changes (such as if a sheen appears), discontinue the discharging. Secure drainage

operations, and proceed to treat the water to remove the contaminant.
• All drain valves will remain closed and securely locked except when discharging.
• The Secondary Containment Drainage Log, FIGURE C-14, is used to record all dike draining events.
• Storm water is collected within the secondary containment dikes. The Company maintains a permit from the state of Virginia, to discharge uncontaminated storm water. The Company only drains off once test parameters are achieved and water is within criteria limits.
(4) BURIED METALLIC STORAGE TANKS
• Not Applicable
(5) PARTIALLY BURIED METALLIC STORAGE TANKS
• There are no partially buried tanks at this Facility.
(6) ABOVEGROUND CONTAINERS
• All tanks are visually inspected monthly to determine their integrity. A monthly terminal inspection is performed to verify the condition of the terminal.
• Each aboveground container covered by the SPCC rule is inspected on a regular schedule, and whenever material repairs are made, in accordance with the following industry standards : • American Petroleum Institute (API) Standard 653 for atmospheric storage tanks with a capacity of 50,000 gallons or more. • Steel Tank Institute (STI) Standard SP001 for atmospheric storage tanks with a capacity of less than 50,000 gallons. • API Standard 510 for pressurized storage vessels. An inspection scheduled has been established (no later than November 10, 2011) for each above ground storage container identified in the SPCC plan based on the intervals prescribed in the applicable industry standard. For containers not previously inspected per an above industry standard, an inspection must be performed within 5 years of the SPCC rule revision effective date of November 10, 2011 (per EPA document "EPA Guidance for Regional Inspectors, Chapter 7"). The container inspection schedule is maintained by the Regional Tank Integrity Manager.
(7) INTERNAL HEATING COILS
• Not Applicable
(8) FAIL SAFE ENGINEERING
• To prevent overfilling of bulk storage tanks, Company personnel will monitor all filling operations using direct "side-reading" level gauges and manual gauging techniques.
• Tanks are equipped with side reading automatic gauges and high level alarms.
• These gauges are utilized to directly verify product level in the tank.
• The side gauges and high level alarms are regularly inspected to verify their operational integrity prior to each receipt.
• In addition to the above, a barge receipt log system is in place to safeguard against overfilling.

FIGURE C-4 - SITE SPECIFIC SPCC PLAN, CONTINUED

40 CFR, 112.8
(c) BULK STORAGE CONTAINERS
(9) FACILITY EFFLUENTS
• To treat the storm water, the Company will use sorbent pads to remove oil.

• Prior to and during the discharge of storm water from the dike field areas, Company personnel visually inspect the effluent.
• Storm water is not discharged if there is a visible sheen. The Company will treat the storm water to remove the oil sheen before discharging.
(10) VISIBLE OIL LEAKS
• All containment dikes are inspected on a monthly basis and prior to actual discharging to prevent the release of oil into navigable waters.
• Operators will inspect the product transfer areas daily, and promptly correct any operations or facilities that show leakage. Such inspections include seams, gaskets, piping, pumps, valves, rivets, and bolts. Any accumulations of oil discovered within the diked area will be promptly removed.
• Facility equipment including storage tanks shall be inspected daily to verify the integrity of each item.
(11) MOBILE/PORTABLE STORAGE CONTAINERS
• Not Applicable
(d) FACILITY TRANSFER OPERATIONS, PUMPING, AND FACILITY PROCESSES
(1) BURIED PIPING INSTALLATIONS
• In the event that buried pipe is exposed for maintenance, it will be carefully inspected to identify any corrosion.
• Any corrosion of buried pipe shall require the affected area to be replaced and pressure tested prior to returning the pipe to service.
• All underground piping is equipped with a protective coating and included in the impressed current cathodic protection system.
• Integrity and leak testing of buried piping shall be performed at the time of installation, modification, construction, relocation, or replacement.
(2) PIPELINE OUT OF SERVICE
• Out-of-service piping will also be properly labeled to identify the nature of the pipe condition.
• Any piping considered to be out of service will be disconnected from product transfer equipment and identified as such by the installation of caps and/or blind flanges.
(3) PIPING SUPPORTS
• Pipelines are secured on pipe supports to prevent un-necessary movement that might allow the pipe to fall from the support.
• All piping is configured to allow for expansion, while minimizing abrasion that might cause deterioration of the steel.
• Pipe supports and associated piping are protected against corrosion by exterior coatings.
• Pipelines and supports are inspected monthly to determine conditions.
• All pipe supports have been designed and installed using applicable engineering techniques.
(4) ABOVEGROUND VALVES AND PIPELINES
• Operators will inspect the product transfer areas daily, and correct any operations that show leakage.
• DOT Pipeline is static tested weekly to 1.5 times NOP prior to commencement of transfer operataions.

FIGURE C-4 - SITE SPECIFIC SPCC PLAN, CONTINUED

40 CFR, 112.8
(d) FACILITY TRANSFER OPERATIONS, PUMPING, AND FACILITY PROCESSES
(4) ABOVEGROUND VALVES AND PIPELINES
• All facility equipment, including pipelines and valves, shall be inspected monthly to verify the integrity of each item.
• Aboveground valve and pipeline inspections shall involve assessment of the general condition of items, including flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces.
• In the event underground pipeline inspections identify excessive corrosion and/or actual leaks, the Company will pressure test these pipelines to verify their integrity.
• If a pipeline fails the integrity testing, the Company shall repair or replace the pipe prior to returning the pipeline to service.
(5) VEHICULAR TRAFFIC
• Signs have been posted at the facility warning drivers of the presence of aboveground piping.

FIGURE C-5 - TANK TABLES

Container/ Source	Failure/Cause	Total Capacity (gal)	Secondary Containment Volume Type (gal)	Tank Type	Year Constructed/ Installed	Quantity Stored (gal)	Direction of Flow/Rate (See Plot Plan)	Product Stored
ABOVEGROUND CONTAINERS - (b) (7)(F)								
2001	Overfill / Rupture / Leakage	(b) (7)(F)		Cone	1963	(b) (7)(F)	South / Instantaneous	JP-5
2002	Overfill / Rupture / Leakage			Cone	1963		South / Instantaneous	JP-5
PRT 1	Overfill / Rupture / Leakage			Horizontal	1982		South / Instantaneous	JP-5
Product Recovery Tank	Overfill / Rupture / Leakage			Horizontal	1992		South / Instantaneous	JP-5
MISCELLANEOUS - Total: Varies								
No Truck or Rail Rack	-			-			-	-
Facility Total: 1,736,045								

Containment Type: 1=Earthen Berm and Floor, 2=Concrete Berm and Floor, 3=Earthen Berm and Concrete Floor, 4=Metal Berm and Floor, 5=Portable Containment or Inside Building, 6=Double Walled, 7=Coated Asphalt Materials, 8=Concrete Berm and Earthen, 9=Asphalt, Soil, and Concrete walls and Earthen Floor * Not

in Containment Area, ** Curbing and containment system

FIGURE C-6 - ADDENDUM

Certification of this Spill Prevention, Control, and Countermeasure Plan is contingent upon correction of all discrepancies listed in this Addendum. The discrepancies for this facility are:

This terminal has no discrepancies.

FIGURE C-7 - DRAINAGE DIAGRAM

(Click here for Drainage Diagram)

FIGURE C-8 - EVACUATION DIAGRAM

(Click here for Evacuation Diagram)

FIGURE C-9 - PIPING DIAGRAM

(Click here for Piping Diagram)

FIGURE C-10 - CONTAINMENT CALCULATION

(Click here for Survey)

FIGURE C-10 - CONTAINMENT CALCULATION

(Click here for Containment Calculation)

FIGURE C-11 - DISCHARGE PREVENTION MEETING LOG

Spill Prevention Briefing

- Company personnel are kept knowledgeable of equipment, safety factors, and operating conditions.

- Annual training sessions are conducted by the Area Supervisor to assure oil handling personnel understand the SPCC Plan for the facility. These documented sessions keep personnel informed of their obligation to prevent pollution incidents and to improve spill control and response techniques.

Note: This form is a sample.

DATE	ATTENDEES

Subject/Issue Identified	Required Action	Implementation Date

FIGURE C-12 - INSPECTION PROCEDURES

INSPECTION PROCEDURE	DATE
A. ROUTINE VISUAL INSPECTION	
• Check tank connections for leaks and localized dead vegetation	

• Inspect drains for accumulation of oil	
• Check tanks for gaps between tank and foundation and damage caused by vegetation roots	
• Check valves and packing for leaks	
• Check drains and sumps for accumulation of oil and proper operation of level controls and pumps	
• Check tank seams for leaks, including drips, puddles, discolored area or localized dead vegetation	
• Check all tank and piping surfaces for signs of external corrosion	
• Check base of tanks for evidence of settling, leaks, including drips, puddles or discolored areas	
• Check piping for bowing between supports, leaks, including drips, puddles, discolored area, or localized dead vegetation	
• Check vent system outlets to ensure that they are not obstructed	
• Check secondary containment for discoloration and cracks or holes. Special attention should be given to seams and locations where piping goes through the deck, curbing or dikes. Ensure dike valves are closed and sealed	
• Check secondary containment for permeability, debris, erosion, location/status of pipes, inlets, drainage beneath tanks, and level of precipitation in dike vs. available capacity	
• Check secondary containment for presence of water in diked area. Follow appropriate Company procedures after visual inspection of the water to determine if sheen is present on the water	
• Check all gates to ensure that only the entrances/exits currently in use by authorized personnel are open and unlocked	
B. ANNUAL INSPECTIONS	
• Check facility lighting to ensure all are functioning	
• Check facility fencing for damages that would allow unauthorized entry	
• Inspect sumps for the accumulation of oil	
• Inspect diked/curbed areas for the accumulation of oil	
• Inspect drip pans on lift stations for the accumulation of oil	

• Inspect all tanks for proper operation including gauges, sight glasses, level controls and pressure controls	
• Inspect valves and valve glands for proper operation and ensure complete valve closure (leak proof)	
• Inspect sump for proper operation. Manually gauge sump and pump out if level is high	
• Examine the outside of the tank for signs of corrosion, damaged paint surfaces and signs of leaking	
• Inspect pipelines for signs of leaking or damage	
• Inspect flanges for signs of leaking or damage	
• Inspect joints for signs of leaking or damage	

FIGURE C-12 - INSPECTION PROCEDURES

INSPECTION PROCEDURE	DATE
C. RECORD KEEPING	
• All inspections, except routine, are to be documented on the forms provided in the Appendix and retained at the Facility. Records shall be maintained for a period of five (5) years. The following is a list of documentation forms available in the Appendix:	
• Annual Inspection Record (FIGURE C-13)	

Note: More stringent inspections, as required by Company procedures and documented on other forms, may be used to supplement or replace SPCC inspection records. These documents must be retained for five (5) years.

FIGURE C-13 - ANNUAL INSPECTION RECORD

(Other versions of this form may be used)

YEAR	MONTH	DATE	INITIALS	COMMENTS

FIGURE C-14 - SECONDARY CONTAINMENT DRAINAGE LOG

(Other versions of this form may be used)

DATE	TIME STARTED	TIME ENDED	OPERATOR NAME	SIGNATURE	COMMENTS

SECONDARY CONTAINMENT DRAINAGE PROCEDURES

1. Inspect water inside containment for sheen. Indicate sheen/no sheen in comments.
2. Open valve or start pump.

3. Monitor drainage.
4. Close valve and secure with seal or lock/secure pump.
5. Fill out drainage log and sign.

FIGURE C-15 - REPORTABLE SPILL HISTORY*

Date of Discharge(s):	Nov. 04,1992
List of Discharge Causes:	Corrosion hole in Product Recovery Tank
Material(s) Discharged:	JP5 Jet Fuel
Amount of Discharges in Gallons:	10 (gals)
Amount That Reached Navigable Waters (if applicable):	Sheen ()
Effectiveness and Capacity of Secondary Containment:	None
Cleanup Actions Taken:	OSRO used absorbent to recover oil
Steps Taken to Reduce Possibility of Reoccurrence:	PRT was moved from dock; installed on-shore with secondary containment
Total Oil Storage Capacity of Tank(s) or Impoundment(s) From Which Material Discharged:	270 (gals)
Enforcement Actions:	None
Effectiveness of Monitoring Equipment:	None
Spill Detection:	Visual daily inspection detected spill.

*Reportable spill, as defined in 40 CFR Part 110, is a discharge of oil that violates applicable water quality standards or cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

FIGURE C-15 - REPORTABLE SPILL HISTORY*

Date of Discharge(s):	July 1, 1996
List of Discharge Causes:	Tank overfill
Material(s) Discharged:	JP5 Jet Fuel
Amount of Discharges in	

Gallons:	29,809 (gals)
Amount That Reached Navigable Waters (if applicable):	0 ()
Effectiveness and Capacity of Secondary Containment:	All spilled material was contained within the secondary containment dike.
Cleanup Actions Taken:	Liquid phase returned to storage; contaminated soil removed and disposed of off-site.
Steps Taken to Reduce Possibility of Reoccurrence:	Revised product receipt procedures; Installed high-level alarms
Total Oil Storage Capacity of Tank(s) or Impoundment(s) From Which Material Discharged:	840,000 - 924,000 (gals)
Enforcement Actions:	None
Effectiveness of Monitoring Equipment:	None
Spill Detection:	Visual daily inspection detected spill.

*Reportable spill, as defined in 40 CFR Part 110, is a discharge of oil that violates applicable water quality standards or cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

FIGURE C-15 - REPORTABLE SPILL HISTORY*

Date of Discharge(s):	Sept. 9, 1998
List of Discharge Causes:	Hole in pipeline due to construction equipment contact.
Material(s) Discharged:	JP5 Jet Fuel
Amount of Discharges in Gallons:	N/A
Amount That Reached Navigable Waters (if applicable):	0 ()
Effectiveness and Capacity of Secondary Containment:	None
Cleanup Actions Taken:	Pipeline was excavated and section of pipe replaced; contaminated soil removed and disposed of off-site.
Steps Taken to Reduce Possibility of Reoccurrence:	None
Total Oil Storage Capacity of Tank(s) or Impoundment(s) From Which Material Discharged:	N/A ()

Enforcement Actions:	None
Effectiveness of Monitoring Equipment:	Weekly pipeline testing identified the leak prior to startup of pumping.
Spill Detection:	Weekly pipeline testing identified the leak prior to startup of pumping.

*Reportable spill, as defined in 40 CFR Part 110, is a discharge of oil that violates applicable water quality standards or cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

FIGURE C-15 - REPORTABLE SPILL HISTORY*

Date of Discharge(s):	Dec. 12, 2002
List of Discharge Causes:	Hole in pipeline due to corrosion.
Material(s) Discharged:	JP5 Jet Fuel
Amount of Discharges in Gallons:	30 (gals)
Amount That Reached Navigable Waters (if applicable):	0 ()
Effectiveness and Capacity of Secondary Containment:	None
Cleanup Actions Taken:	Pipeline was excavated and section of pipe replaced; contaminated soil removed and disposed of off-site.
Steps Taken to Reduce Possibility of Reoccurrence:	None
Total Oil Storage Capacity of Tank(s) or Impoundment(s) From Which Material Discharged:	N/A ()
Enforcement Actions:	None
Effectiveness of Monitoring Equipment:	Weekly pipeline testing identified the leak prior to startup of pumping.
Spill Detection:	Weekly pipeline testing identified the leak prior to startup of pumping.

*Reportable spill, as defined in 40 CFR Part 110, is a discharge of oil that violates applicable water quality standards or cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

FIGURE C-16 - CONTAINMENT AND DRAINAGE PLANNING

FACTORS
Available Volume of Containment
Refer to FIGURE C-5
Route(s) of Drainage
Refer to FIGURE C-7
Construction Materials Used in Drainage Troughs
Clay or earthern
Type and Number of Valves Separators
(1) 6" gate valve steel
Sump Pump Capacities
None
Containment Capacity of Weirs and Booms
None
Other Clean Up Materials
Refer to SECTION 7.1.1

APPENDIX D Last Revised: March 2009

HAZARD EVALUATION AND RISK ANALYSIS

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D.1 Facility Hazard Evaluation

D.2 Vulnerability Analysis

D.2.1 Analysis of the Potential for a Spill

D.3 **Inspection and Spill Detection**

Figure D.3-1 - Response Equipment Inspection

D.4 Planning Distance Calculations

Figure D.4-1 - Planning Distance Calculations

D.5 Discharge Scenarios

D.5.1 Small and Medium Discharge Scenarios

D.5.2 Worst Case Discharge (WCD) Scenario Discussion

D.5.3 Description of Factors Affecting Response Efforts

D.6 Planning Volume Calculations

D.7 Spill Volume Calculations

D.7.1 USCG Portion of Facility

D.7.2 EPA Portion of the Facility (non-transportation related)

Figure D.7-1 - Worst Case Discharge (WCD) Calculations (in bbls)

D.7.3 DOT/PHMSA Portion of Pipeline/Facility

D.8 Product Characteristics and Hazards

Figure D.8-1 - Summary of Commodity Characteristics

D.8.1 Material Data Safety Sheets

D.1 FACILITY HAZARD EVALUATION

A list of potential spill sources is identified in **FIGURE C-5**. This figure describes type and volumes of secondary containment areas along with tank manufacturer dates. All liquid storage tanks are visually inspected on a monthly basis. A description of facility operations is included in **FIGURE 1-2**.

D.2 VULNERABILITY ANALYSIS

A vulnerability analysis was performed to address the potential effects of an oil spill within the planning distance of this facility. Refer to **SECTION 6.6** for a detailed list of vulnerabilities. The following features may be impacted by a spill:

Water Intakes	Schools	Medical Facilities	Residential Areas	Businesses	Wetlands or other Sensitive Environments	Fish and Wildlife	Lakes and Streams	Endangered Flora and Fauna	Recreational Areas	Transportation Routes (air, land, water)	Utilities	Other Applicable Areas
x					x	x	x	x	x	x		

D.2.1 Analysis of the Potential for a Spill

The probability of a spill occurring at this facility is minimal for the following reasons:

- Tanks are constructed in accordance with applicable engineering standards.
- Tank age is reviewed as a potential factor (refer to **FIGURE C-5**).
- Truck loading facilities are equipped with concrete pads with a spill collection drain system which returns spills to the recovery system (if applicable).
- All trucks are monitored during tank unloading procedures (if applicable).
- (b) (7)(F) [redacted]
- (b) (7)(F) [redacted]
- Facilities are inspected frequently for evidence of corrosion and leaks according to applicable API standards.
- Personnel are trained in procedures to prevent pollution.
- The horizontal range of a spill is dependent upon the topography and distance to the nearest water body described in more detail in **FIGURE D.4-1**.
- Natural disasters are not likely at these facilities; however, these facilities may experience flooding, tornadoes or a lightning strike.
- Company personnel prepare for natural disasters by monitoring weather reports and warnings and taking appropriate safety precautions.
- The potential for a natural disaster is acknowledged, as appropriate, during drills and exercises.

D.3 INSPECTION AND SPILL DETECTION

Note: This table contains database content, therefore references within this table are not active hyperlinks.

D.3 Inspection and Spill Detection
Inspection
In accordance with 40 CFR 112.7 (e)(8), each Facility includes written procedures and records of inspection. The inspection shall include tanks, secondary containment, and response equipment at the Facility. Facility self-inspection requires two steps: • Checklist of items to inspect. • Method of recording the actual inspection and its findings; records must be maintained for five years. Facility-specific procedures for transfer and secondary containment inspections are provided in **APPENDIX C**. Response equipment inspection information is provided in **SECTION 7.1.2**. **FIGURE D.3-1** may be used to record equipment inspection information.
Detection
Detection of a discharge from the Company facility or pipeline may occur in a number of ways including: • (b) (7)(F) [redacted] • Local alarm notification. • Visual detection by Company personnel. • Visual detection by the public. (b) (7)(F) [redacted] (b) (7)(F) [redacted] • (b) (7)(F) [redacted] • • (b) (7)(F) [redacted]
Operating procedures for the automated system

(b) (7)(F)

(b) (7)(F)
Training
All operators are required to take training modules including emergency responses.
Visual detection by Company personnel

Note: This table contains database content, therefore references within this table are not active hyperlinks.

D.3 Inspection and Spill Detection, Continued
Visual detection by Company personnel
Aerial patrol flights will be made on a regular basis for pipelines subject to 49 CFR 194 and 195. The intent of the patrol is to observe the area directly over the pipeline right-of-way for leaks, exposed pipes, washes, missing markers and other unusual conditions. Construction on either side of the pipeline right-of-way is also monitored. Discharges to the land or surface waters may also be detected by Company personnel during regular operations and inspections. If a leak is detected, the appropriate actions are taken, including, but not limited to: • Notifications as per **SECTION 3**. • A preliminary assessment of the incident area. • If appropriate, initiate initial response actions per **SECTION 2**. **FIGURE 2.1-1** provides a checklist for initial response actions.
Visual detection by the public
Right-of-way marker signs are installed and maintained at road crossing and other noticeable points and provide an Operations Control 24-hour number for reporting emergency situations. Also, Facility signs are installed and maintained on perimeter fencing. The Company also participates in the "call before you dig" or "One Call" utility notification services which can be contacted to report a leak and determine the owner/operator of the pipeline. If the notification is made to a local office or pump station, the Company representative receiving the call generally will implement the following actions: • Notify the Operations Control Center and regional/designated office (as applicable). • Dispatch Company field personnel to the site to confirm discharge and conduct preliminary assessment. • Notify their immediate area supervisor and provide assessment results.

FIGURE D.3-1 - RESPONSE EQUIPMENT INSPECTION

(Other versions of this form may be used.)

ITEM	QUANTITY	LOCATION	TIME TO ACCESS/RESPOND	CONDITION	DATE USED/TESTED	SHELF LIFE	INSPECTION DATE

D.4 PLANNING DISTANCE CALCULATIONS

To evaluate the potential risk to sensitive resources in the area, should a spill occur, a planning distance was calculated based on the following characteristics of this Facility and vicinity according to 40 CFR 112, Attachment C-III. Factors utilized include distance to the nearest body of moving water/storm sewer/drainage ditch or swale, geology, and topography of the area.

FIGURE D.4-1 provides the planning distance calculation worksheets for this Facility.

FIGURE D.4-1 - PLANNING DISTANCE CALCULATIONS

Intermediate Calculations

$\propto$ = elevation (in feet) = [stream elevation @ facility] - [stream elevation @ receptor (or 20 mile point)]

ß = horizontal distance from facility to receptor (or 20 mile point) in miles

s = average steam slope = $\propto$/ ß / 5280

r = hydraulic radius (in feet) = average mid channel depth x 0.667

n = Manning's roughness coefficient from Table B

To calculate stream velocity (in ft./sec.), use: $v = 1.5/n \times r^{2/3} \times s^{1/2}$

Calculation of **PLANNING DISTANCE**

d = calculated planning distance (miles)

v = Chezy-Manning based stream velocity (ft./Sec.)

t = spill response time interval (from Table A)

c = 0.68 (sec-mile/hr-ft conversion factor)

d = v x t x c = planning distance equation

Table A	
Substantial Harm Planning Time (hours) Port Areas as Identified in 40 CFR § 112	
Boston, MA	15
New York, NY	15
Delaware Bay and River to Philadelphia	15
St. Croix, VI	15
Pascagoula, MS	15
Mississippi River from Southwest Pass, LA to Baton Rouge, LA	15
Louisiana Offshore Oil Port (LOOP)	15

Table B	
Manning's Roughness Coefficient for Various Natural Stream Types (n)	
Minor Streams (Top width < 100 ft.)	
Clean:	
Straight	.03
Winding	.04
Sluggish (woody, deep pools):	
No trees/brush	.06
Trees and/or brush	.10
Major Streams (Top width > 100 ft.)	
Regular section:	
No boulders/brush	.036
Irregular section:	

Lake Charles, LA	15
Sabine-Natchez River, TX	16
Galveston Bay and Houston Ship Channel	16
Corpus Christi, TX	16
Los Angeles/Long Beach Harbor, CA	16
San Francisco Bay, San Pablo Bay, Carquinez Strait, and Suisun Bay to Antioch, CA	16
Straits of Juan de Fuca from Port Angeles, WA to and including Puget Sound	16
Prince William Sound, AK	16
Others are specified by RA for EPA Region	16
Allow other lakes, rivers canals inland and near shore areas	27

Brush	.06

FIGURE D.4-1 - PLANNING DISTANCE CALCULATIONS, CONTINUED

Site Investigation

The following information is utilized to calculate the planning distance for each facility.

From USGS Quad/Topo Sheets

- Delineate watershed and downgradient receptor streams for runoff/release.
- Determine whether navigable water is within 0.5 miles of the facility (or would be in worst case discharge scenario).

From Facility

- Identify alternate drainage pathways to navigable waters; namely storm drainage system/piping.
- Establish list of soil or other factors effecting transport of oil over land.

From maps, local/state authorities or investigation

- Identify fish/wildlife sensitivities and habitats in downgradient areas along with public drinking water intake locations.
- Determine stream pool elevations at facility and at receptor points or at 20 miles downstream (maximum) for more distant receptors.

- Characterize stream properties for accurate determination of roughness coefficient (n) and average mid-channel depth or hydraulic radius (r).

The total planning distance equals d.

	Virginia Beach Terminal - North Landing River - tidally influenced
First receptor	N/A
First receptor location (miles)	N/A
∝ (feet)	N/A
ß (miles)	N/A
s (feet/mile)	N/A
Avg. mid-channel depth (feet)	N/A
r (feet)	N/A
n	N/A
v (feet/second)	N/A
t (hours)	N/A
c (seconds per mile/hours per foot)	N/A
d (total planning distance)	15 miles

FIGURE D.4-1 - PLANNING DISTANCE CALCULATIONS, CONTINUED

If Tidally Influenced

Planning distance calculations are based on the following factors and guidelines in accordance with 40 CFR Part 112 Attachment C-III, 4.2:

- The horizontal range of a potential oil spill is influenced by the wind direction and tidal stage; however, it is expected to spread quickly.
- Tidally influenced waters.
- Persistent and non-persistent product.
- Resulting planning distance is 15 miles persistent oils or 5 miles for non-persistent oils from each Facility down current during ebb tide and to the point of maximum tidal influence or 15 miles persistent oils or 5 miles for non-persistent oils, whichever is less, during flood tide.

D.5 DISCHARGE SCENARIOS

The equipment and personnel to respond to a spill are available from several sources and are

provided with the equipment and contractors in **SECTION 7.1.1** and **APPENDIX B.1.1**. The following sections are discussions of these scenarios.

D.5.1 Small and Medium Discharge Scenarios

- The purpose of this section is to identify the sources and sizes of small and medium discharges as defined by OPA 90 regulations.
- Potential spill scenarios may include tank overflow, valve failure, tank failure, pipe failure, hose failure, or pump seal failure; these spills would likely be in contained areas and would be unlikely to travel off-site.
- The Company would respond to these types of incidents in the same manner as a worst case discharge, but at a level appropriate to the incident size; differences in response are described in the worst case scenario discussion described in this Appendix. The Company's response in such an event would in no way obviate the liability of any other responsible parties.
- Resources are identified in **FIGURE 3.1-6**, **SECTION 7.1.1**, and **APPENDIX B.1.1**.
- All resources shall be capable of arriving at the Facility within the applicable response tier requirements (Tier 1 = 12 hours; Tier 2 = 36 hours; Tier 3 = 60 hours).

The following table lists various facility operations and corresponding components which might be the source of a small, medium, and worst case discharge:

FACILITY OPERATIONS AND COMPONENTS	SMALL DISCHARGE (up to 2,100 gallons)	MEDIUM DISCHARGE (2,100 to 36,000 gallons)	WORST CASE DISCHARGE (volume largest tank)
Oil transfer operations	Hose failure	Hose failure	Not applicable
Facility maintenance operations	Leak from periodic maintenance, line not completely drained when opened	Seal failure Overfill	Not applicable
Facility piping	Flange, gasket, threaded connection	Seal failure Overfill	Not applicable
Pumps and sumps	Seal failure Overfill	Seal failure Overfill	Not applicable
Oil storage tanks	Overfill	Overfill	Catastrophic failure of largest tank
Age and condition of facility and components	Flange, gasket, threaded connector	Pipeline failure Seal failure	Catastrophic failure of largest tank

D.5.1 Small and Medium Discharge Scenarios, Continued

The following table describes the Facility-specific small discharge scenario.

SMALL DISCHARGE SCENARIO

- A 50-barrel Discharge could occur from facility piping.
- A 50-barrel discharge typically will not escape the containment of the Facility. Severe rain and associated flooding would increase the chances.
- Surface drainage is towards the North Landing River.

SMALL DISCHARGE RESPONSE RESOURCE

The Facility will respond to a Small Discharge with the manpower and local contract resources as detailed in FIGURE 3.1-6, SECTION 7.1.1, and APPENDIX B.1.1.

- If a 50-barrel discharge escaped the Facility or occurred as the result of a marine transfer operation, response operations would be implemented immediately upon discovery.
- Oil containment and recovery devices can be secured from contract resources (with a minimum effective daily recovery capacity of 50 barrels) and can be implemented at the Facility, as the situation demands.
- A minimum of 100 barrels of oil storage capacity for recovered oily material can be secured from contractor resources or made available within the Facility's storage facilities, as the situation demands.

Additional recovery and storage equipment may be secured from other Company and contract resources, as the situation demands.

Note: Equipment and manpower resources are detailed in **FIGURE 3.1-6**, **SECTION 7.1.1**, and **APPENDIX B.1.1**.

D.5.1 Small and Medium Discharge Scenarios, Continued

The following table describes the Facility-specific medium discharge scenario.

MEDIUM DISCHARGE SCENERIO

- A 1,200-barrel discharge could occur during a marine transfer or from Facility piping. Severe rain and associated flooding would increase the chances of an oil spill leaving the property.
- Surface drainage is towards the river.

MEDIUM DISCHARGE RESPONSE RESOURCE

The Facility will initially respond to a Medium Discharge with a similar response to the Small Discharge. Additional response resources will be activated from an Oil Spill Removal Organization(s) (OSRO) as detailed in FIGURE 3.1-6, SECTION 7.1.1, and APPENDIX B.1.1.

- Oil recovery devices with an effective daily recovery capacity of 600 Bbls (50% of the Medium/Maximum Most Probable Discharge volume) secured from the OSRO(s) will be on scene within 12 hours.
- 1,200 bbls of oil storage capacity for recovered oily material will be secured from the OSRO(s) and/or made available within the Facility's storage facilities.
- Containment boom for oil collection and containment and for protection of fish and wildlife and sensitive areas will be secured from the OSRO(s) in the event that the spill escapes the boundaries of the Facility and impacts the storm water drainage channels

and/or the North Landing River.

Note: Equipment and manpower resources are detailed in **FIGURE 3.1-6**, **SECTION 7.1.1**, and **APPENDIX B.1.1**.

D.5.2 Worst Case Discharge (WCD) Scenario Discussion

APPENDIX D.7 provides worst case discharge calculations. Discussion of this scenario is as follows:

Upon discovery of a spill, the following procedures would be followed:

1. The First Responder would notify Supervisory Personnel and notifications would be initiated in accordance with **FIGURE 2.1-1**.

2. The Facility Manager would assume the role of Incident Commander until relieved and would initiate response actions and notifications in accordance with **SECTION 2**. If this were a small spill, the local/company personnel may handle all aspects of the response. Among those actions would be to:

    - Conduct safety assessment in accordance with **FIGURE 2.1-1** and evacuate personnel as needed in accordance with **SECTION 2.2**.
    - Direct Facility responders to shut down ignition sources.
    - Direct responders to position resources in accordance with **SECTION 6.9**.
    - Complete spill report form in accordance with **FIGURE 3.1-2**.
    - Ensure regulatory agencies are notified (**FIGURE 3.1-6**).

3. If this were a small or medium spill, the Qualified Individual/Incident Commander may elect for the First Responder to remain the Incident Commander or to activate selected portions of the Emergency Management Team. However, for a large spill, the Qualified Individual would assume the role of Incident Commander and would activate the entire Emergency Management Team in accordance with activation procedures described in **SECTION 4.2**.

4. The Incident Commander would then initiate spill assessment procedures including surveillance operations, trajectory calculations, and spill volume estimating in accordance with **SECTION 2.1.3**. The QI would implement the terminal's safety and health plan developed under 29 CFR 1910.120 and designed to identify, evaluate, and control safety and health hazards during emergency response operations.

5. The Incident Commander would then utilize checklists in **SECTION 4.6** as a reminder of ICS position responsibilities. The primary focus would be to establish incident priorities and objectives and to brief staff accordingly.

6. The Emergency Management Team would develop the following plans, as appropriate (some of these plans may not be required during a small or medium spill):

- Site Safety and Health (**SECTION 5.4**)
- Site Security (**SECTION 5.7**)
- Incident Action (**SECTION 5.2.6**)
- Decontamination (**SECTION 5.5**)
- Disposal (**SECTION 5.6**)
- Demobilization (**SECTION 5.8**)

7. The response would continue until an appropriate level of cleanup is obtained.

D.5.2 Worst Case Discharge (WCD) Scenario Discussion, Continued

The following table describes the Facility-specific worst case discharge scenario.

WORST CASE Discharge Scenario
A worst case discharge at this Facility is considered to be a discharge that does not exceed 20,000 barrels. 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, • Hurricane/Tornado-induced spills, or • Pipeline manifold rupture. The type of material that could be discharged is currently JP-5 Jet Fuel in the largest tank (Tank 2001).A sudden failure of a transfer line from the manifolds to the dock is the most likely cause for a release of product to enter the North Landing River. Diking and containment areas are located throughout the Facility. For a discharge of this size to reach a navigable waterway, or leave the Facility property, diking would have to be damaged or destroyed (breached). This spill type is one that would result in a chain reaction of failures of other equipment.

Note: Equipment and manpower resources are detailed in **FIGURE 3.1-6**, **SECTION 7.1.1**, and **APPENDIX B.1.1**.

D.5.2 Worst Case Discharge (WCD) Scenario Discussion, Continued

The following table describes the Facility-specific worst case discharge response resource.

WORST CASE Discharge RESPONSE RESOURCE
Calculation of response equipment needs for a worst case discharge are given later in this Section. These calculations take into account adverse weather. Severe rain events and associated flooding would also increase the chances of an oil spill from leaving the property.

Nevertheless, boom could be deployed as an initial measure to reduce the potential for any off-site drainage from a spill that may unfortunately occur concurrently with a severe rain event, associated flooding, or a hurricane.

The Facility will respond to a Worst Case Discharge (WCD) initially with a similar response as identified for a Small/Average Most Probable or Medium/Maximum Most Probable Discharge. Additional OSRO(s) will be activated as the situation demands. The response resources will be capable of arriving within the required response tiers and will include:

- Oil recovery devices with an effective daily recovery capacity equal to the lesser of 50% of the WCD or the response caps will be secured from the OSRO(s) and other Company resources. Any amount in excess of the required caps will be contracted for and responded to as part of the same response effort.
- Temporary storage capacity equal to twice the daily recovery capacity will be secured from OSRO(s), other Company resources, or made available within the Facility's storage facilities.
- At least 20% of the on-water response equipment secured from the OSRO(s) and other Company resources will be capable of operating in water of 6 feet or less depth.
- Containment boom for oil collection and containment and for protection of fish and wildlife and sensitive environments and socio-economic sensitivities will be secured from the OSRO(s) and other Company resources.
- Resources capable of responding to a shoreline clean-up operation involving the calculated volume of oil and emulsified oil that might impact the shoreline will be secured from the OSRO(s) and other Company resources.
- Overall response operations will be conducted under the Incident Command System with adequate Facility and Contract Response personnel to continue operations for a minimum of seven (7) days.
- In the unlikely event of a spill leaving the property, it would probably enter navigable water at the North Landing River. A spill at the dock would also flow into the North Landing River.

Note: Equipment and manpower resources are detailed in **FIGURE 3.1-6**, **SECTION 7.1.1**, and **APPENDIX B.1.1**.

D.5.3 Description of Factors Affecting Response Efforts

There are many factors which may affect the ability to respond to an incident. These factors are described in the following table:

FACTORS	CONSIDERATIONS AFFECTING RESPONSE EFFORTS
Size of spill	• Location of spill in relation to identified sensitivities and/or sensitive areas. • Spread and spill movement.
Proximity to down gradient water intakes	• Refer to **SECTION 6.7** for maps showing proximity to down gradient water intakes.
Proximity to fish and wildlife	• A release could impact fish, wildlife and sensitive

and sensitive environments	environments as described in **SECTION 6.4** and **SECTION 6.5**.
Likelihood that discharge will travel offsite	• A small spill is unlikely to travel off-site. • A medium spill has the potential to travel off-site via adjacent waterways. • A worst case discharge has the greatest potential to travel off-site if secondary containment is breached.
Location of material spilled	• See facility information and drainage located in **FIGURE 1-2** and **FIGURE C-7**. Facility tankage, piping, and transfer areas are displayed on drawings provided in **FIGURE C-7** and **FIGURE C-9**.
Material discharged	• Typically Jet Fuel • Product is considered non-persistent but not volatile.
Weather or aquatic conditions	• The areas have the potential to be affected by tornadoes, flooding, hurricanes, and lightning strikes.
Available remediation equipment	• The Company may have response equipment available. Refer to **SECTION 7.1.1** for applicability. • Resources are available through oil spill response contractors in quantities sufficient to meet applicable planning standards.
Probability of a chain reaction or failures	• Potential for a chain reaction or failure is remotely possible but not anticipated; secondary containment, response contractors and trained personnel minimize the potential of such events.
Direction of spill pathway	• Refer to sensitivity maps in the **SECTION 6.10** • Wind direction and speed combined with currents, will determine spill trajectory.

D.6 PLANNING VOLUME CALCULATIONS

Once the worst case discharge volume has been calculated, response resources must be identified to meet the requirements of 40 CFR 112.20(h). Calculations to determine sufficient amount of response equipment necessary to respond to a worst case discharge is described below. A demonstration of the planning volume calculations is provided below.

D.7 SPILL VOLUME CALCULATIONS

D.7.1 USCG Portion of Facility

The Worst Case Discharge was formulated assuming a release from the Marine Transportation Related portion of the Facility, as directed by 33 CFR 154.1029.

The Worst Case Discharge is based on a catastrophic failure of all piping carrying oil between the marine transfer manifold(s) and the non-transportation related portion(s) of the Facility. For the Virginia Beach Terminal, this volume is calculated as noted below. Actual Worst Case Discharge volumes for all facilities are provided in **FIGURE D.7-1**. Oil spill response equipment available to respond to this spill is included in **SECTION 7.1.1**, and **APPENDIX B.1.1**.

- (b) (7)(F) [redacted]

- **Average Most Probable Discharge**

  The Average Most Probable Discharge (AMPD) is defined by 33 CFR 154 as the lesser of 50 barrels or 1% of the Worst Case Discharge. (b) (7)(F) [redacted]

- **Maximum Most Probable Discharge**

  The Maximum Most Probable Discharge (MMPD) is defined by 33 CFR 154 as the discharge of the lesser of 1,200 barrels or 10% of the volume of the Worst Case Discharge. (b) (7)(F) [redacted]

D.7.2 EPA Portion of the Facility (non-transportation related)

The WCD for the EPA portion of the facility, as defined in 40 CFR 112, Appendix D, Part A, is calculated as:

- For multiple tank facilities with adequate secondary containment, the WCD is calculated as the capacity of the largest single aboveground oil storage tank within an adequate secondary containment area or the combined capacity of a group of aboveground oil storage tanks permanently manifolded together, whichever is greater.

(b) (7)(F) [redacted]

Because the discharge for the EPA portion of the facility is greater than the USCG definition for a worst case discharge, response resources are planned for the greater of the two volumes.

(b) (7)(F) [redacted]

742	7.42	74.2	20380

Virginia Beach Terminal D - 21

EPA PLANNING VOLUME DATA

STEP	PARAMETER	Virginia Beach Terminal
(A)	(b) (7)(F)	[redacted]
(B)	Oil group	I
(C)	*Geographic area	Rivers and Canals
(D1)	Percent lost to natural dissipation	80
(D2)	Percent recovered floating oil	10
(D3)	Percent oil onshore	10
(b) (7)(F)	[redacted]	
(F)	Emulsification Factor	1.0
(G)	On water recovery resource mobilization factor	
(G1)	Tier I	0.30
(G2)	Tier II	0.40
(G3)	Tier III	0.60
Part II	On water recovery capacity (bbls/day)	
	Tier I	611
	Tier II	815
	Tier III	1,223
Part III	Shoreline cleanup volume (bbls/day)	2,038
Part IV	On water response capacity by operating area (bbls/day)	
(J1)	Tier I	1,875
(J2)	Tier II	3,750
(J3)	Tier III	7,500
Part V	On water amount needed to be identified, but not contracted for in advance	
	Tier I	0
	Tier II	0
	Tier III	0

* R = Rivers and canals
N = Nearshore/Inland

D.7.3 DOT/PHMSA Portion of Pipeline/Facility

The worst case discharge (WCD) for the DOT portion of the pipeline and/or facility, as defined in 49 CFR 194.105(b), as the largest volume of the following:

1. The pipeline's maximum shut-down response time in hours (based on historic discharge data or in the absence of such data, the operators best estimate), multiplied by the maximum flow rate expressed in barrels per hour (based on the maximum daily capacity of the pipeline), plus the largest drainage volume after shutdown of the line section(s) in the response zone expressed in barrels; or

2. The largest foreseeable discharge for the line section(s) within a response zone, expressed in barrels (cubic meters), based on the maximum historic discharge, if one exists, adjusted for any subsequent corrective or preventative action taken; or

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.

Under PHMSA's current policy, operators are allowed to reduce the worst case discharge volume derived from 49 CFR 194.105(b)(3) by no more than 75% if an operator is taking certain spill prevention measures for their breakout tanks and presents supporting information in the response plan. An operator can reduce the worst case discharge volume based on breakout tanks in the response zones as follows:

SPILL PREVENTION MEASURES	PERCENT REDUCTION ALLOWED
Secondary containment capacity greater than 100% capacity of tank and designed according to NFPA 30	50%
Tank built, rebuilt, and repaired according to API Std 620/650/653	10%
Automatic high-level alarms/shutdowns designed according to NFPA/API RP 2350	5%
Testing/cathodic protection designed according to API Std 650/651/653	5%
Tertiary containment/drainage/treatment per NFPA 30	5%*
Maximum allowable credit or reduction	75%

* Note: The facilities do not have tertiary containment.

The worst case discharge for each response zone was based on the largest volume of the three criteria given above.

The Company has determined the worst case discharge volume to be a catastrophic line failure of the largest line section with the greatest drainage capacity in each response zone or 50% of the volume of the largest tank in each zone.

D.7.3 DOT/PHMSA Portion of Pipeline/Facility, Continued

The worst case tank volume is calculated as follows:

Largest tank x Credit for containment tank standards = Tank standards credit

The Company has implemented all of the spill prevention measures, listed on the previous page, except tertiary containment. Therefore, the percent reduction allowed for credit equals 50% and the worst case discharge volume is 50% of the total volume.

(b) (7)(F)

[redacted]

D.8 PRODUCT CHARACTERISTICS AND HAZARDS

This Facility may store various types of commodities including but not limited to:

- Jet Fuel

The key chemical and physical characteristics of each of these oils and/or other small quantity products/
chemicals are identified in MSDS. MSDS can be obtained by the facility via the company intranet.

FIGURE D.8-1 describes primary oils handled.

FIGURE D.8-1 - SUMMARY OF COMMODITY CHARACTERISTICS

COMMON NAME	MSDS NAME	HEALTH HAZARD	FLASH POINT	SPECIAL HAZARD	REACTIVITY	HEALTH HAZARD WARNING STATEMENT
Jet Fuel	Appropriate Product Name	1	2	C,COR,H2S	0	Long term, repeated exposure may cause cancer. May cause damage to the following organs: blood, kidneys, liver, gastrointestinal tract, respiratory tract, skin, central nervous system, eye, lens, or cornea.

Health Hazard	**4 = Extremely Hazardous** **3 = Hazardous** **2 = Warning** **1 = Slightly Hazardous** **0 = No Unusual Hazard**	**Fire Hazard (Flash Point)**	**4 = Below 73Â° F, 22Â° C** **3 = Below 100Â° F, 37Â° C** **2 = Below 200Â° F, 93Â° C** **1 = Above 200Â° F, 93Â° C** **0 = Will not burn**
Special Hazard	**A = Asphyxiant** **C = Contains Carcinogen** **W = Reacts with Water** **Y = Radiation Hazard** **COR = Corrosive** **OX = Oxidizer** **H_2S = Hydrogen Sulfide** **P = Contents under Pressure** **T = Hot Material**	**Reactivity Hazard**	**4 = May Detonate at Room Temperature** **3 = May Detonate with Heat or Shock** **2 = Violent Chemical Change with High Temperature and Pressure** **1 = Not Stable if Heated** **0 = Stable**

D.8.1 Material Safety Data Sheets

Click here for Jet Fuel

APPENDIX E Last Revised: August 2009

CROSS-REFERENCES

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Figure E-1 - EPA / FRP Cross-Reference

Figure E-2 - EPA / SPCC Cross-Reference

Figure E-3 - USCG / FRP Cross-Reference

Figure E-4 - EPA / RCRA Cross-Reference

Figure E-5 - DOT / PHMSA Cross-Reference

Figure E-6 - OSHA Cross-Reference

Figure E-7 - Virginia ODCP Cross-Reference

Figure E-8 - EPA Response Plan Cover Sheet

FIGURE E-1 - EPA / FRP CROSS-REFERENCE

EPA FRP REQUIREMENTS	LOCATION
Facility Information	
General Information (1.0)	
• Facility Name	Figure 1-2
• FRP #	Figure 1-2
• Facility Address	Figure 1-2
• Facility Telephone	Figure 1-2
• Facility Owner	Figure 1-2
• Owner Address	Figure 1-2
• Owner Telephone	Figure 1-2
• Name of Protected Waterway/ Environmentally Sensitive Area	Section 6.6
• Distance from Facility	Figure D.4-1
Standard Facility Response Plan (sec. 1.0)	
Emergency Response Action Plan (ERAP) (sec. 1.1)	
Qualified Individual (QI) information (sec. 1.2) partial	ERAP - Figure 3-4
Emergency notification phone list (sec. 1.3.1) partial	ERAP - Figure 3-4
Spill response notification form (sec. 1.3.1) partial	ERAP - Figure 3-1, Figure 3-2, Figure 3-3
Response equipment list and location (sec. 1.3.2) complete	ERAP - Figure 4-2, Figure 4-3
Response equipment testing and deployment (sec. 1.3.4) complete	ERAP - Figure 4-4
Facility response team list (sec. 1.3.4) partial	ERAP - Figure 3-4
Facility evacuation plan (sec. 1.3.5) condensed	ERAP - Section 2.2
Immediate actions (sec. 1.7.1) complete	ERAP - Section 2.0
Facility diagrams (sec. 1.9) complete	ERAP - Section 5.0
Facility Information (sec. 1.2)	
Facility name and location (sec. 1.2.1)	Figure 1-2
Latitude and longitude (sec. 1.2.2)	Figure 1-2
Wellhead protection area (sec. 1.2.3)	Figure 1-2
Owner/ operator (both names included, if different (sec. 1.2.4)	Figure 1-2

QuaIified Individual (sec. 1.2.5) (name, position, home and work address, phone numbers) and specific response training experience	Figure 1-2
Date of oil storage start-up (sec. 1.2.6)	Figure 1-2
Current operation (sec. 1.2.7)	Figure 1-2
Date and type of substantial expansion (sec. 1.2.8)	Figure 1-2

FIGURE E-1 - EPA / FRP CROSS-REFERENCE, CONTINUED

EPA FRP REQUIREMENTS	LOCATION
Emergency Response Information (sec. 1.3)	
Notification (sec. 1.3.1)	
National Response Center phone number	Figure 3.1-6
Qualified Individual (day and evening) phone numbers	Figure 1-2, Figure 3.1-5
Company Response Team (day and evening) phone numbers	Figure 3.1-5
Federal On-Scene Coordinator (FOSC) and/ or Regional Response Center (day and evening) phone numbers	Figure 3.1-6
Local response team phone numbers (fire department/ cooperatives)	Figure 3.1-6
Fire marshal (day and evening) phone numbers	Figure 3.1-6
State Emergency Response Commission (SERC) phone number	Figure 3.1-6
State police phone number	Figure 3.1-6
Local Emergency Planning Committee (LEPC) phone number	Figure 3.1-6
Local water supply system (day and evening) phone numbers	Figure 3.1-6
Weather report phone number	Figure 3.1-6
Local TV/ radio phone number(s) for evacuation notification	Figure 3.1-6
Hospital phone number	Figure 3.1-6
Spill Response Notification Form	
• Reporter's name	Figure 3.1-4
• Company information	Figure 3.1-4
• Incident description	Figure 3.1-4
• Materials	Figure 3.1-4
• Response actions	Figure 3.1-4
• Impact	Figure 3.1-4
Response Equipment List (Identify if Facility, OSRO, CO-OP owned by letters O, F, or	

C) (sec. 1.3.2)	
Equipment list	Figure 7.1-1
Equipment location	Figure 7.1-1
Release handling capabilities and limitations	Figure 7.1-1
Response Equipment Testing/ Deployment (sec. 1.3.3)	
Last inspection or equipment test date	Figure A.1-4
Inspection frequency	Figure A.1-4
Last deployment drill date	Figure A.1-4
Deployment frequency	Figure A.1-4
OSRO certification (if applicable)	Figure A.1-4

FIGURE E-1 - EPA / FRP CROSS-REFERENCE, CONTINUED

EPA FRP REQUIREMENTS	LOCATION
Response Personnel (sec. 1.3.4)	
Emergency response personnel list	Figure 3.1-5
Emergency response contractors	Figure 3.1-5, Figure 7.1-1, Appendix B
Evidence of response capability	Appendix B
Facility response team list (sec. 1.3.4)	Figure 3.1-5
Evacuation Plans (sec. 1.3.5)	
Facility-wide evacuation plan	Section 2.2
Reference to existing community evacuation plans (sec. 1.3.5.3)	Section 2.2
Evacuation routes shown on diagram	Evacuation Diagram "Figure C-8"
Qualified Individual's Duties (sec. 1.3.6)	
Description of duties	Section 4.5
Consistent with requirements	Section 4.5
Hazard Evaluation (sec. 1.4)	
Hazard Identification (sec. 1.4.1)	
Schematic Diagram	
Labeled schematic drawing	Drainage Diagram "Figure C-7"
Above-ground tanks identified separately	Drainage Diagram "Figure C-7"
Below-ground tanks identified separately	Drainage Diagram "Figure C-7"
Surface impoundments identified separately	N/A

Tank Form:	
Tank number	Figure C-5
Substance stored	Figure C-5
Quantity stored	Figure C-5
Tank type and year installed	Figure C-5
Maximum capacity	Figure C-5
Failure/ Cause	Figure C-5
Surface Impoundment Form:	
Surface impoundment number	Figure C-5
Substance stored	Figure C-5
Quantity stored	Figure C-5
Surface area/ year	Figure C-5
Maximum capacity	Figure C-5
Failure/ Cause	Figure C-5

FIGURE E-1 - EPA / FRP CROSS-REFERENCE, CONTINUED

EPA FRP REQUIREMENTS	LOCATION
Facility Operations Description:	
Loading and unloading procedures	Figure 1-2
Day to day operations	Figure 1-2
Secondary containment	Figure C-5
Daily throughput	Figure 1-2
Vulnerability Analysis (sec. 1.4.2)	
Vulnerability of:	
• Water intakes	Section 6.6, Section 6.7
• Schools	Section 6.6, Section 6.7
• Medical facilities	Section 6.6, Section 6.7
• Residential areas	Section 6.6, Section 6.7
• Business	Section 6.6, Section 6.7
• Wetlands or other environmentally sensitive areas	Section 6.6, Section 6.7
• Fish and wildlife	Section 6.6, Section 6.7

• Lakes and streams	Section 6.6, Section 6.7
• Endangered flora and fauna	Section 6.6, Section 6.7
• Recreational areas	Section 6.6, Section 6.7
• Transportation routes (air, land, and water)	Section 6.6, Section 6.7
• Utilities	Section 6.6, Section 6.7
• Other applicable areas (List below)	Section 6.6, Section 6.7
• Other areas:	Section 6.6, Section 6.7
Analysis of Potential for a Spill (sec. 1.4.3)	
Probability of spill occurring at the facility	Appendix D.2.1
Incorporates Factors:	
Tank age	Figure C-5
Spill history	Figure C-14
Horizontal range of a potential spill	Figure D.4-1
Vulnerability to natural disaster	Appendix D.2.1
Facility Reportable Oil Spill History Description (sec. 1.4.4)	
Date of discharge	Figure C-15
List of discharge causes	Figure C-15
Materials discharged	Figure C-15
Amount discharged in gallons	Figure C-15
Amount of discharge that reached navigable waters	Figure C-15
Effectiveness and capacity of secondary containment	Figure C-15
Clean-up actions taken	Figure C-15

FIGURE E-1 - EPA / FRP CROSS-REFERENCE, CONTINUED

EPA FRP REQUIREMENTS	LOCATION
Facility Reportable Oil Spill History Description (sec. 1.4.4), Continued	
Steps taken to reduce possibility of reoccurrence	Figure C-15
Total oil storage capacity of tank(s) or impoundment(s) from which material is discharged	Figure C-15
Effectiveness of monitoring equipment	Figure C-15
Description of how each spill was detected	Figure C-15

Discharge Scenarios (sec. 1.5)	
Small and Medium Volume Discharges (sec. 1.5.1)	
Small Volume Discharges	
Small volume discharge calculation for a facility	Appendix D.5
Facility-specific spill potential analysis	Appendix D.5
Average most probable discharge for "complexes"	Appendix D.5
1,000 feet of boom (1 hour deployment time)	Section 7.1.1, Figure 7.1-1, Appendix B
Correct amount of boom for "complexes"	Appendix D.5
Oil recovery devices equal to small discharge (2 hour recovery time)	Section 7.1.1, Figure 7.1-1, Appendix B
Oil storage capacity for recovered material	Section 7.1.1, Figure 7.1-1, Appendix B
Medium Volume Discharges	
Medium volume discharge calculation for a facility	Appendix D.5
Facility-specific spill potential analysis	Appendix D.5
Maximum most probable discharge for "complexes"	Appendix D.5
Oil recovery devices equal to medium discharge	Section 7.1.1, Figure 7.1-1, Appendix B
Availability of sufficient quantity of boom	Section 7.1.1, Figure 7.1-1, Appendix B
Oil storage capacity for recovered material	Section 7.1.1, Figure 7.1-1, Appendix B
Worst Case Discharge (WCD) (sec. 1.5.2)	
Correct WCD calculations	Appendix D.7
Correct WCD for "complexes"	Appendix D.5
Sufficient response resources for WCD	Appendix D.7, Figure 7.1-1, Appendix B
Sources and quantity of equipment for response to WCD	Appendix D.7, Section 7.1.1, Figure 7.1-1, Appendix B
Oil storage capacity for recovered material	Appendix D.7, Figure 7.1-1, Section 7.4 , Figure 7.4-3, Appendix B

FIGURE E-1 - EPA / FRP CROSS-REFERENCE, CONTINUED

EPA FRP REQUIREMENTS	LOCATION
Discharge Detection Systems (sec. 1.6)	
Discharge Detection by Personnel (sec. 1.6.1)	
Detection procedures	Appendix D.3

Discussion of facility inspections	Figure C-12, Appendix D.3
Initial response actions	Figure 2.1-1
Automated Discharge Detection (sec. 1.6.2)	
Equipment description	Appendix D.3
Alarm verification procedures	Appendix D.3
Initial response actions	Figure 2.1-1
Plan Implementation (sec. 1.7)	
Response Resources (sec. 1.7.1)	
Demonstration of accessibility of proper response personnel and equipment	Appendix B
Emergency plans for spill response	Section 2
Additional training	Appendix A.2
Additional contracted help	Appendix B
Access to additional equipment/ experts	Appendix B
Ability to implement plan, including training and practice drills	Appendix A
Immediate Actions Form for small, medium, and worst-case spills	Figure 2.1-1
Disposal Plans (sec. 1.7.2)	
How and where materials will be disposed	Section 5.6, Section 7.4, Appendix D.5
Disposal permits	Section 5.6, Section 7.4
Containment and Drainage Planning (sec. 1.7.3)	
Containment and drainage plan available	Figure C-16
Incorporates Factors:	
Available volume of containment	Figure C-16
Route(s) of drainage	Figure C-16
Construction materials used in drainage troughs	Figure C-16
Type and number of valves separators	Figure C-16
Sump pump capacities	Figure C-16
Containment capacity of weirs and booms	Figure C-16
Other clean up materials	Figure C-16

FIGURE E-1 - EPA / FRP CROSS-REFERENCE, CONTINUED

EPA FRP REQUIREMENTS	LOCATION
Self-Inspection, Drills/ Exercises, and Response Training (sec. 1.8)	
Facility Self-Inspection (sec. 1.8.1)	

Inspection checklist (with dates)	Figure C-12
Records maintained for five years	Figure C-12, Figure C-13
Tank Inspection (sec. 1.8.1.1)	
Tank leaks	Figure C-12
Tank foundations	Figure C-12
Tank piping	Figure C-12
Response Equipment Inspection (sec. 1.8.1.2)	
Inventory (item and quantity)	Figure D.3-1
Storage location (time to access and respond)	Figure D.3-1
Operation status/ condition	Figure D.3-1
Actual use/ testing (last test date and frequency of testing)	Maintain On-Site
Shelf life	Figure D.3-1
Secondary Containment Inspection (sec. 1.8.1.3)	
Dike or berm system	Figure C-12
Secondary containment	Figure C-12
Retention and drainage ponds	Figure C-12
Facility Drills/ Exercises (sec. 1.8.2)	
Facility drills/ exercise description	Appendix A.1
Equipment deployment exercise	Appendix A.1
Unannounced exercise	Appendix A.1
Area exercises	Appendix A.1
Qualified Individual Notification Drills	Appendix A.1
Qualified Individual Notification Drill Log (sec. 1.8.2.1) (date, company, qualified individual, other contacted, emergency scenario, evaluation)	Appendix A.1
Emergency Management Team Tabletop Exercises	Appendix A.1
Emergency Management Team Tabletop Drill Log (sec. 1.8.2.2) (date, company, qualified individual, participants, emergency scenario, evaluation, changes to be implemented, time table for implementation)	Appendix A.1
Response Training (sec. 1.8.3)	
Description of response training program (including topics)	Figure A.2-2
Personnel Response Training Logs (name, response training date/ and number of hours, prevention training date/ and number of hours)	Figure A.2-3
Discharge Prevention Meeting Log (date, attendees)	Figure C-11

FIGURE E-1 - EPA / FRP CROSS-REFERENCE, CONTINUED

EPA FRP REQUIREMENTS	LOCATION
Diagrams (sec. 1.9)	
Site Diagram includes:	
Entire facility to scale	Site Plan "Figure 1-5"
Above and below-ground bulk storage tanks	Site Plan "Figure 1-5"
Contents and capacities of bulk storage tanks	Site Plan "Figure 1-5"
Contents and capacities of drum storage areas	Site Plan "Figure 1-5"
Contents and capacities of surface impoundments	Site Plan "Figure 1-5"
Process buildings	Site Plan "Figure 1-5"
Transfer areas	Site Plan "Figure 1-5"
Secondary containment systems	Site Plan "Figure 1-5"
Structures where hazardous materials are used and capacity	Site Plan "Figure 1-5"
Location of communication and emergency response equipment	Site Plan "Figure 1-5"
Location of electrical equipment which contains oil	Site Plan "Figure 1-5"
If a "complex" facility, interface between EPA and other regulating agencies	N/A
Site Drainage Diagram	
Major sanitary and storm sewers, manholes, and drains	Drainage Diagram "Figure C-7"
Weirs and shut-off valves	Drainage Diagram "Figure C-7"
Surface water receiving streams	Drainage Diagram "Figure C-7"
Fire fighting water sources	Drainage Diagram "Figure C-7"
Other utilities	Drainage Diagram "Figure C-7"
Response personnel ingress and egress	Evacuation Diagram "Figure C-8"
Equipment transportation routes	Drainage Diagram "Figure C-7", Evacuation Diagram "Figure C-8"
Direction of spill flow from release points	Drainage Diagram "Figure C-7"
Site Evacuation Diagram includes:	
Site plan diagram with evacuation routes	Evacuation Diagram "Figure C-8"
Location of evacuation regrouping areas	Evacuation Diagram "Figure C-8"

FIGURE E-1 - EPA / FRP CROSS-REFERENCE, CONTINUED

EPA FRP REQUIREMENTS	LOCATION
Site Security (sec. 1.10)	
Emergency cut-off locations	Figure 7.3-2
Enclosure	Figure 7.3-2
Guards and their duties, day and night	Figure 7.3-2
Lighting	Figure 7.3-2
Valve and pump locks	Figure 7.3-2
Pipeline connection caps	Figure 7.3-2
Response Plan Cover Sheet (sec. 2.0)	
Owner/ operator of facility	Figure E-7
Facility name	Figure E-7
Facility address	Figure E-7
Facility phone number	Figure E-7
Latitude and longitude	Figure E-7
Dun and Bradstreet number	Figure E-7
Response Plan Cover Sheet (sec. 2.0), Continued	
North American Industrial Classification System (NAICS) Code	Figure E-7
Largest oil tank storage capacity	Figure E-7
Maximum oil storage capacity	Figure E-7
Number of oil storage tanks	Figure E-7
Worst case discharge amount	Figure E-7
Facility distance to navigable waters	Figure E-7
Applicability of substantial harm criteria	Figure E-7
Certification	Figure E-7

FIGURE E-2 - EPA / SPCC CROSS-REFERENCE

EPA SPCC REQUIREMENTS (40 CFR 112.7 and 112.8)	**LOCATION**
112.7 General requirements for Spill Prevention, Control, and Countermeasure Plans	
a. General requirements	
1. Include a discussion of your facility's conformance with the requirements listed in this part	Appendix C

3. Describe in your Plan the physical layout of the facility and include a facility diagram	Figure 1-5, Figure C-4, Figure C-7, Figure C-8
i. The type of oil in each container and its storage capacity	Figure C-5
ii. Discharge prevention measures	Section 2, Figure C-4
iii. Discharge or drainage controls	Figure C-4, Figure C-7
iv. Countermeasures for discharge	Section 2
v. Methods of disposal	Section 7.4
vi. Contact list and phone numbers	Figure 3.1-5, Figure 3.1-6
4. Unless you have submitted a response plan, provide information and procedures to report a discharge	N/A
5. Unless you have submitted a response plan, describe procedures you will use when a discharge occurs	N/A
b. Prediction of the direction, rate of flow, and total quantity of oil which could be discharged from the facility as a result of each type of major equipment failure	Figure C-5
c. Provide appropriate containment	Figure C-5
d. If you determine that the installation of any of the structures or pieces of equipment is not practicable, you must clearly explain in your Plan why such measures are not practicable; for bulk storage containers, conduct both periodic integrity testing of the containers and periodic integrity and leak testing of the valves and piping; and, unless you have submitted a response plan under § 112.20, provide in your Plan the following:	Appendix C
1. An oil spill contingency plan following the provisions of part 109 of this chapter	N/A
2. A written commitment of manpower, equipment, and materials	N/A
e. Inspections, tests, and records	Appendix C
f. Personnel, training, and discharge prevention procedures	Appendix C
1. Oil-handling personnel training	Figure C-4, Appendix A.2

2. Person accountable for discharge prevention	Figure C-4
3. Schedule and conduct discharge prevention briefings	Figure C-11

FIGURE E-2 - EPA / SPCC CROSS-REFERENCE, CONTINUED

EPA SPCC REQUIREMENTS (40 CFR 112.7 and 112.8)	LOCATION
112.7 General requirements for Spill Prevention, Control, and Countermeasure Plans, continued	
g. Security (excluding oil production facilities)	Figure C-4
1. Facility fencing	Figure C-4
2. Master flow, drain valves, and other valves remain in closed position	Figure C-4
3. Lock the starter control on each oil pump in “off” position	Figure C-4
4. Securely cap or blank-flange the loading/ unloading connections	Figure C-4
5. Provide facility lighting	Figure C-4
i. Discovery of discharges occurring during hours of darkness	Figure C-4
ii. Prevention of discharges occurring through acts of vandalism	Figure C-4
h. Facility tank car and tank truck loading/ unloading rack (excluding offshore facilities)	Figure C-4
1. Catchment basin, treatment facility, or quick drainage system	Figure C-4
2. Provide vehicular disconnect warning system	Figure C-4
3. Inspect for discharges of the lower most drain	Figure C-4
i. Aboveground container brittle fracture evaluation	Figure C-4
j. Discussion of conformance with the applicable requirements	Figure C-4

112.8 Spill Prevention, Control, and Countermeasure Plan requirements for onshore facilities (excluding production facilities)	
b. Facility drainage	Figure C-4
1. Restrain drainage from diked storage areas except where facility systems are designed to control such discharge	Figure C-4
2. Use valves of manual, open-and-closed design, for the drainage of diked areas	Figure C-4
3. Design facility drainage systems from undiked areas with a potential for a discharge to flow into ponds, lagoons, or catchment basins designed to retain oil or return it to the facility	Figure C-4
4. Equip the final discharge of all ditches inside the facility with a diversion system that would, in the event of an uncontrolled discharge, retain oil in the facility	Figure C-4
5. Where drainage waters are treated in more than one treatment unit and such treatment is continuous, and pump transfer is needed, provide two "lift" pumps and permanently install at least one of the pumps	Figure C-4

FIGURE E-2 - EPA / SPCC CROSS-REFERENCE, CONTINUED

EPA SPCC REQUIREMENTS (40 CFR 112.7 and 112.8)	LOCATION
112.8 Spill Prevention, Control, and Countermeasure Plan requirements for onshore facilities (excluding production facilities), continued	
c. Bulk storage containers	Figure C-4
1. Not use a container for the storage of oil unless its material and construction are compatible with the material stored and conditions of storage such as pressure and temperature	Figure C-4
2. Provide a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation	Figure C-4
3. Not allow drainage of uncontaminated rainwater from the diked area into a storm drain or discharge of an effluent into an open watercourse, lake, or pond, bypassing the facility treatment system unless you:	Figure C-4

i. Normally keep the bypass valve sealed closed	Figure C-4
ii. Inspect the retained rainwater to ensure that its presence will not cause a discharge as described in § 112.1(b)	Figure C-4
iii. Open the bypass valve and reseal it following drainage under responsible supervision; and	Figure C-4
iv. Keep adequate records of such events, for example, any records required under permits issued in accordance with §§ 122.41(j)(2) and 122.41(m)(3) of this chapter	Figure C-4
4. Protect completely buried metallic storage tanks from corrosion	Figure C-4
5. Protect partially buried and bunkered tanks from corrosion	Figure C-4
6. Test each aboveground container for integrity on a regular schedule	Figure C-4
7. Control leakage through defective internal heating coils	Figure C-4
8. Engineer or update each container installation in accordance with good engineering practice to avoid discharges. You must provide at least one of the following devices:	Figure C-4
i. High liquid level alarms with an audible or visual signal	Figure C-4
ii. High liquid level pump cutoff devices	Figure C-4
iii. Direct audible or code signal communication between the container gauger and the pumping station	Figure C-4
iv. A fast response system	Figure C-4
v. Regularly test liquid level sensing devices to ensure proper operation	Figure C-4
9. Observe effluent treatment facilities frequently enough to detect possible system upsets that could cause a discharge as described in § 112.1(b)	Figure C-4

FIGURE E-2 - EPA / SPCC CROSS-REFERENCE, CONTINUED

EPA SPCC REQUIREMENTS (40 CFR 112.7 and 112.8)	LOCATION
112.8 Spill Prevention, Control, and Countermeasure Plan requirements for onshore facilities (excluding production facilities), continued	
10. Promptly correct visible discharges which result in a loss of oil from the container	Figure C-4
11. Position or locate mobile or portable oil storage containers to prevent a discharge	Figure C-4
d. Facility transfer operations, pumping, and facility process	Figure C-4
1. Provide protection of buried piping that is installed or replaced on or after August 16, 2002	Figure C-4
2. Cap or blank-flange the terminal connection at the transfer point	Figure C-4
3. Properly design pipe supports to minimize abrasion and corrosion and allow for expansion and contraction	Figure C-4
4. Regularly inspect all aboveground valves, piping, and appurtenances	Figure C-4
5. Warn all vehicles entering the facility to be sure that no vehicle will endanger aboveground piping or other oil transfer operations	Figure C-4

FIGURE E-3 - USCG / FRP CROSS-REFERENCE

USCG OPA 90 REQUIREMENTS (33 CFR 154.1035)	LOCATION IN THIS PLAN
a) Introduction and Plan Content	
1. Facility Name and Location (address, city, county, state, zip, phone number, fax number).	Figure 1-2
2. Facility Directions (including but not limited to maps, landmarks and river mile that could aid a responder and reviewer).	Figure 1-2, Figure 1-3
3. Name, address and procedures for contacting the facility's owner or operator on a 24 hour basis.	Figure 1-2, Figure 3.1-5

4. Table of contents.	Table of Contents
5. Period when submitted plan does not have to conform to the subpart, a cross index, if appropriate.	Figure E-3
6. Record of change(s) to record information on plan updates.	Table of Contents
b) Emergency Response Action Plan	
1. Notification procedures • Prioritized list of facility response personnel. • Federal, State or local agencies, as required • Spill response notification forms to Federal, State, local agencies. Form must state that initial notification must not be delayed by collection of data. • Notification of the National Response Center.	Section 3, Figure 3.1-5, Figure 3.1-6

2. Facility's spill mitigation procedures
• Describe volume and oil groups that would be involved in the following:
  • Average, maximum and worse discharge from the MTR facility.
• Where applicable, the worst case discharge from the non-transportation-related facility.
• Prioritized list of procedures and facility personnel (identified by job title). Procedures must address actions to be taken in the event of a discharge, potential discharge or emergency involving the following equipment and scenarios:
• Transfer equipment
  • Tank overfill or failure
  • Piping rupture, leak both under pressure and not under pressure
  • Explosion or fire
  • Equipment failure
• Listing of equipment and the responsibilities of facility personnel to mitigate an average most probable discharge
	Section 2.1.1, Figure 2.1-2, Appendix D

3. Facility's response activities	
i. Responsibilities of facility personnel to initiate a response and supervise response resources pending arrival of qualified individuals.	Figure 2.1-1
ii. Responsibilities and authority of the qualified individual and alternate as required in § 154.1026.	Section 4.5

FIGURE E-3 - USCG / FRP CROSS-REFERENCE, CONTINUED

USCG OPA 90 REQUIREMENTS (33 CFR 154.1035)	LOCATION IN THIS PLAN
iii. Apply the following organizational structure to manage response actions: • Command and control • Public information • Safety • Liaison with government agencies • Spill operations • Planning • Logistics support • Finance	Section 4.6, Figure 4.5-2
iv. Identify oil spill removal organizations and the spill management teams to be capable of providing the following response resources: • Equipment and supplies to meet § 154.1045, 154.1047, as appropriate • Trained personnel for response to be on hand for the first 7 days of the response • Job descriptions for each spill management team member within the organizational structure in a response action.	Figure 3.1-5, Section 4.6, Section 7.1, Appendix B
v. For mobile facilities in more than one COTP zone, oil spill removal organizations and the spill management teams must be identified from paragraph (3)(iv) and included in each COTP zone.	N/A
4. Fish and wildlife sensitive environments	
i. Identify areas of economic importance and environmental sensitivities as identified in the ACP, which are potentially impacted by a worst case discharge.	Section 6.6
ii. For a worst case discharge the plan must address the following:· • List all sensitive elements identified in ACP that are potentially impacted by a discharge· • Describe all response actions anticipated to protect sensitive elements· • Contain map or chart that depicts each response action anticipated.	Appendix D.5 Section 6, Figure 6.3-1

iii. Identify appropriate equipment and personnel as described in § 154.1028 to protect sensitive elements by one of the following calculations: • Persistent oils and non-petroleum oils discharged into non-tidal waters, the distance from the facility reached in 48 hours at maximum current.	Section 7.1, Appendix B, Appendix D

FIGURE E-3 - USCG / FRP CROSS-REFERENCE, CONTINUED

USCG OPA 90 REQUIREMENTS (33 CFR 154.1035)	LOCATION IN THIS PLAN
• Persistent and non-petroleum oils discharged into tidal waters, 15 miles from the facility down current during ebb tide and to the point of maximum tidal influence or 15 miles, whichever is less, during flood tide. • Non-persistent oils discharged into non-tidal waters, the distance from the facility reached in 24 hours at maximum current. • Non-persistent oils discharged into tidal waters, 5 miles from the facility down current during ebb tide and to the point of maximum tidal influence or 5 miles, whichever is less, during flood tide. • Spill trajectory or model maybe substituted if acceptable to COTP. • Procedures contained in the Environmental Protection's Agency's regulations on oil pollution prevention may be substituted for non-tidal and tidal waters. • COTP may require additional sensitive elements to be protected depending on trajectory.	Section 7.1, Appendix B, Appendix D
5. Disposal plan Describe actions and procedures that adhere to Federal, state or local requirements.	Section 5.6, Section 7.4
c) Training and Exercises	
1. Training procedures of the facility owner or operator must meet requirements of § 154.1050.	Appendix A
2. Exercise procedures of the facility owner or operator must meet requirements of § 154.1055.	Appendix A
d) Plan Review and Update Procedures	

Plan review and update procedures of the facility owner or operator must meet requirements of §154.1065 and any post-discharge review of the plan to evaluate and validate its effectiveness.	Section 1.2
e) Appendices	
1. Facility-specific information - principal characteristics	
i. There must be a physical description of the facility including a plan of the facility showing the mooring areas, transfer locations, control stations, locations of safety equipment, and the location and capacities of all piping and storage tanks.	Figure C-7, Figure C-8
ii. Identify sizes, types and number of vessels the facility can transfer oil to or from simultaneously.	Figure 1-2
iii. Identify the first valve(s) on piping separating transportation-related and non-transportation-related areas. If piping serves tank vessels from a manifold it is considered the first valve.	Figure C-7, Figure C-8

FIGURE E-3 - USCG / FRP CROSS-REFERENCE, CONTINUED

USCG OPA 90 REQUIREMENTS (33 CFR 154.1035)	LOCATION IN THIS PLAN
iv. The oil(s) and hazardous material handled, stored or transported in bulk must be documented and include the following: • Generic/chemical name • Description of appearance and odor • Hazards involved with handling or discharge • Firefighting procedures and extinguishing agents for oil/hazardous materials	Appendix D.8
2. List of contacts must include primary and alternate personnel, personnel from paragraph (b) (3) (iv), and Federal, state and local officials.	Figure 3.1-5, Figure 3.1-6
3. Equipment list and records must include the following: • List of equipment and facility personnel required to respond to an average most probable discharge, as defined by §154.1020 • List of equipment belonging to an oil spill	Section 7.1, Appendix B

removal organization as described in §154.1028; unless the organization has been classified by the Coast Guard to equal or exceed the response capability needed by the facility • When it is necessary for the appendix to contain a listing of response equipment, it shall include the following: skimmers; booms; dispersant application; in-situ burning; bioremediation equipment and supplies and other equipment used to apply other chemical agents on the NCP Product Schedule; communications, firefighting and beach cleaning equipment; boats and motors; and heavy equipment • This list must also include specifications for each piece of equipment as follows: 1. type, make, model and year of manufacture, 2. for oil recovery devices, the effective daily recovery rate, 3. for containment boom, the overall boom height and type of end connectors, 4. spill scenario in which the equipment will be used, 5. total daily capacity for storage and disposal of recovered daily oil 6. for communication equipment, the type and amount of equipment intended for use during response activities, 7. location of equipment, and 8. date of last inspection.	

FIGURE E-3 - USCG / FRP CROSS-REFERENCE, CONTINUED

USCG OPA 90 REQUIREMENTS (33 CFR 154.1035)	LOCATION IN THIS PLAN
4. Communications plan must describe the primary and alternate method of communication during discharges, including communications at the facility and at remote locations.	Section 7.1.6
5. Site specific safety and health plan must describe the safety and health plan to be implemente This appendix may reference another existing plan requiring under 29 CFR 1910.120	Section 5.4
6. List of acronyms and definitions must include all definitions	Appendix F

that are critical to understanding the response plan.	

FIGURE E-4 - EPA / RCRA CROSS-REFERENCE

EPA / RCRA REQUIREMENTS (40 CFR PART 265.50 - 265.56)		LOCATION
§ 265.50	**Applicability**	
	The regulations in this subpart apply to owners and operators of all hazardous waste facilities, except as 265.1 provides otherwise.	Section 1.1
§ 265.51	Purpose and Implementation of Contingency Plan	
a	Each owner or operator must have a contingency plan for his facility. The contingency plan must be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.	Section 1.1
b	The provisions of the plan must be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents that could threaten human health or the environment.	Section 1.1
§ 265.52	Content of Contingency Plan	
a	The contingency plan must describe the actions facility personnel must take to comply with 265.51 and 265.56 in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.	Section 2
b	If the owner or operator has already prepared a Spill Prevention, Control, and Countermeasure (SPCC) Plan in accordance with Part 112 of this chapter, or Part 1510 of Chapter V, or some other emergency or contingency plan, he need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of this part.	Section 7.4
c	The plan must describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and State and local emergency response teams to coordinate emergency services, pursuant to 265.37.	Section 3.1
d	The plan must list names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see 265.55), and this list must be kept up to date. Where more than one person is listed, one must be named as primary emergency	Figure 1-2

	coordinator and others must be listed in the order in which they will assume responsibility as alternates.	
e	The plan must include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.	Section 7.1

FIGURE E-4 - EPA / RCRA CROSS-REFERENCE, CONTINUED

EPA / RCRA REQUIREMENTS (40 CFR PART 265.50 - 265.56)		LOCATION
§ 265.52	Content of Contingency Plan, Continued	
f	The plan must include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of hazardous waste or fires).	Section 2.2, Section 5, Figure C-8
§ 265.53	Copies of Contingency Plan	
	A copy of the contingency plan and all revisions to the plan must be:	-----
a	Maintained at the facility, and	Figure 1-1, Section 1.2, Section 1.3
b	Submitted to all local police departments, fire departments, hospitals, and State and local emergency response teams that may be called upon to provide emergency services.	Figure 1-1, Section 1.2, Section 1.3
§ 265.54	Amendment of Contingency Plan	
	The contingency plan must be reviewed, and immediately amended, if necessary, whenever:	-----
a	Applicable regulations are revised;	Section 1.2
b	The plan fails in an emergency;	Section 1.2
c	The facility changes in its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;	Section 1.2
d	The list of emergency coordinators changes; or	Section 1.2
e	The list of emergency equipment changes.	Section 1.2

§ 265.55	Emergency Coordinator	
	At all times, there must be at least one employee either on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan. *[Comment: The emergency coordinator's responsibilities are more fully spelled out in 265.56. Applicable responsibilities for the emergency coordinator vary, depending on factors such as type and variety of waste(s) handled by the facility, and type and complexity of the facility].*	Figure 1-2, Figure 3.1-5, Section 4.5, Appendix A

FIGURE E-4 - EPA / RCRA CROSS-REFERENCE, CONTINUED

EPA / RCRA REQUIREMENTS (40 CFR PART 265.50 - 265.56)		LOCATION
§ 265.56	Emergency Procedures	
a	Whenever there is an imminent or actual emergency situation, the emergency coordinator (or his designee when the emergency coordinator is on call) must immediately:	-----
a(1)	Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and	Section 4.5
a(2)	Notify appropriate State or local agencies with designated response roles if their help is needed.	Section 4.5
b	Whenever there is a release, fire, or explosion, the emergency coordinator must immediately identify the character, exact source, amount, and a real extent of any released materials. He may do this by observation or review of facility records or manifests and, if necessary, by chemical analysis.	Section 4.5
c	Concurrently, the emergency coordinator must assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-offs from water or chemical agents used to control	Section 4.5

	fire and heat-induced explosions).	
d	If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside of the facility, he must report his findings as follows:	Section 4.5
d(1)	**If his assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local authorities. He must be available to help appropriate officials decide whether local areas should be evacuated; and**	Section 4.5
d(2)	He must immediately notify either the government official designated as the on-scene coordinator for that geographical area (in the applicable regional contingency plan under Part 1510 of this Title), or the National Response Center (using their 24-hour toll free number 800/424-8802). The report must include:	Section 4.5, Figure 3.1-6
d(2)(i)	Name and telephone number of reporter:	Figure 3.1-4
d(2)(ii)	Name and address of facility;	Figure 3.1-4
d(2)(iii)	Time and type of incident (e.g., release, fire);	Figure 3.1-4
d(2)(iv)	Name and quantity of material(s) involved, to the extent known;	Figure 3.1-4
d(2)(v)	The extent of injuries, if any; and	Figure 3.1-4
d(2)(vi)	The possible hazards to human health, or the environment, outside the facility.	Figure 3.1-4

FIGURE E-4 - EPA / RCRA CROSS-REFERENCE, CONTINUED

EPA / RCRA REQUIREMENTS (40 CFR PART 265.50 - 265.56)		LOCATION
§ 265.56	**Emergency Procedures (Cont'd)**	
e	During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.	Section 2, Figure 2.1-1
f	If the facility stops operations in response to a fire, explosion or release, the emergency coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes or other equipment, wherever this is appropriate.	Section 2, Figure 2.1-1

g	Immediately after an emergency, the emergency coordinator must provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility. *[Comment: Unless the owner or operator can demonstrate, in accordance with § 261.3(c) or (d) of this chapter, that the recovered material is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of Parts 262, 263, and 265 of this chapter].*	Section 7.4, Section 5.6
h	The emergency coordinator must ensure that, in the affected areas(s) of the facility:	-----
h(1)	No waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed; and	Section 7.4, Section 5.6
h(2)	All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.	Section 5.5
i	The owner or operator must notify the Regional Administrator, and appropriate State and local authorities, that the facility is in compliance with paragraph (h) of this section before operations are resumed in the affected area(s) of the facility.	Figure 3.1-6
j	The owner or operator must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, he must submit a written report on the incident to the Regional Administrator. The report must include:	Section 8.3
j(1)	Name, address, and telephone number of the owner or operator;	Section 8.3
j(2)	Name, address, and telephone number of the facility;	Section 8.3
j(3)	Date, time, and type of incident (e.g., fire, explosion);	Section 8.3

FIGURE E-4 - EPA / RCRA CROSS-REFERENCE, CONTINUED

EPA / RCRA REQUIREMENTS (40 CFR PART 265.50 - 265.56)		LOCATION
§ 265.56	**Emergency Procedures (Cont'd)**	
j(4)	Name and quantity of material(s) involved;	Section 8.3
j(5)	The extent of injuries, if any;	Section 8.3
j(6)	An assessment of actual or potential hazards to human health or the environment, where this is applicable; and	Section 8.3
j(7)	Estimated quantity and disposition of recovered	Section 8.3

	material that resulted from the incident.	

FIGURE E-5 - DOT / PHMSA CROSS-REFERENCE

OPA 90 REQUIREMENTS (49 CFR 194)	LOCATION
Information Summary	
• For the core plan:	
• Name and address of operator	Figure 1-2
• For each Response Zone which contains one or more line sections that meet the criteria for determining significant and substantial harm (§194.103), listing and description of Response Zones, including county(s) and state(s)	Figure 1-2
• For each Response Zone appendix:	
• Information summary for core plan	Figure 1-2
• QI names and telephone numbers, available on 24-hr basis	Figure 1-2
• Description of Response Zone, including county(s) and state(s) in which a worst case discharge could cause substantial harm to the environment	Figure 1-2
• List of line sections contained in Response Zone, identified by milepost or survey station or other operator designation	Figure 1-2
• Basis for operator's determination of significant and substantial harm	Figure 1-2
• The type of oil and volume of the worst case discharge	Figure 1-2, Appendix C.4
• Certification that the operator has obtained, through contract or other approved means, the necessary private personnel and equipment to respond, to the maximum extent practicable, to a worst case discharge or threat of such discharge	Section 1.3, Appendix B
Notification Procedures	
• Notification requirements that apply in each area of operation of pipelines covered by the plan, including applicable state or local requirements	Figure 3.1-5

• Checklist of notifications the operator or Qualified Individual is required to make under the response plan, listed in the order of priority	Figure 3.1-5
• Name of persons (individuals or organizations) to be notified of discharge, indicating whether notification is to be performed by operating personnel or other personnel	Figure 3.1-1, Figure 3.1-5, Figure 3.1-6
• Procedures for notifying Qualified Individuals	Figure 3.1-1, Section 4.5, Figure 4.5-1
• Primary and secondary communication methods by which notifications can be made	Section 7.1.6

FIGURE E-5 - DOT / PHMSA CROSS-REFERENCE, CONTINUED

OPA 90 REQUIREMENTS (49 CFR 194)	LOCATION
Notification Procedures, Continued	

• Information to be provided in the initial and each follow-up notification, including the following:
  • Name of pipeline
  • Time of discharge
  • Location of discharge
  • Name of oil recovered
  • Reason for discharge (e.g. material failure, excavation damage, corrosion)
  • Estimated volume of oil discharged
  • Weather conditions on scene
  • Actions taken or planned by persons on scene
	Figure 3.1-4

Spill Detection and On-Scene Spill Mitigation Procedures	
• Methods of initial discharge detection	Section 2.1.1, Appendix D.2.1, Appendix D.3
• Procedures, listed in order of priority, that personnel are required to follow in responding to a pipeline emergency to mitigate or prevent any discharge from the pipeline	Section 2

• List of equipment that may be needed in response activities based on land and navigable waters including:
  • Transfer hoses and pumps
  • Portable pumps and ancillary equipment
  • Facilities available to transport and receive oil from a leaking pipeline
	Section 7.1.1, Figure 7.1-1, Figure 7.4-4, Appendix B

• Identification of the availability, location, and contact phone numbers to obtain equipment for response activities on a 24-hour basis	Figure 3.1-5, Figure 3.1-6, Appendix B
• Identification of personnel and their location, telephone numbers, and responsibilities for use of equipment in response activities on a 24-hour basis	Figure 3.1-5, Figure 3.1-6, Appendix B
Response Activities	
• Responsibilities of, and actions to be taken by, operating personnel to initiate and supervise response actions pending the arrival of the Qualified Individual or other response resources identified in the response plan	Section 2, Section 4.6
• Qualified Individual's responsibilities and authority, including notification of the response resources identified in the response plan	Section 4.5
• Procedures for coordinating the actions of the operator or Qualified Individual with the action of the OSC responsible for monitoring or directing those actions	Section 4.4, Figure 4.5-2
• Oil spill response organizations (OSRO) available through contract or other approved means, to respond to a worst case discharge to the maximum extent practicable	Appendix B

FIGURE E-5 - DOT / PHMSA CROSS-REFERENCE, CONTINUED

OPA 90 REQUIREMENTS (49 CFR 194)	LOCATION
Response Activities, Continued	

• For each organization identified under paragraph (d), a listing of:
  • Equipment and supplies available
  • Trained personnel necessary to continue operation of the equipment and staff the oil spill removal organization for the first seven days of the response
	Appendix B

List of Contacts	
• List of persons the Plan requires the operator to contact	Figure 3.1-5, Figure 3.1-6
• Qualified individuals for the operator's areas of operation	Figure 1-2, Figure 3.1-4
• Applicable insurance representatives or surveyors for the	Figure 3.1-6

operator's areas of operation	
• Persons or organizations to notify for activation of response resources	Figure 3.1-5
Training Procedures	
• Description of training procedures and programs of the operations	Appendix A.2
Drill Procedures	
• Announced and unannounced drills	Figure A.1-2

• Types of drills and their frequencies; for example:
  • Manned pipeline emergency procedures and qualified individual notification drills conducted quarterly
  • Drills involving emergency actions by assigned operating or maintenance personnel and notification of qualified individual on pipeline facilities which are normally unmanned, conducted quarterly
  • Shore-based spill management team (SMT) tabletop drills conducted yearly
  • Oil spill removal organization field equipment deployment drills conducted yearly
  • A drill that exercises entire response plan for each Response Zone, would be conducted at least once every three years
	Figure A.1-2

Response Plan review and update procedures	
• Procedures to meet §194.121	Section 1.2
• Procedures to review plan after a worst case discharge and to evaluate and record the plan's effectiveness	Section 1.2, Section 8.3
Response zone appendices	
Each response zone appendix would provide the following information:	
• Name and telephone number of the qualified individual	Figure 1-2, Figure 3.1-5
• Notification procedures	Section 3
• Spill detection and mitigation procedures	Appendix D.2.1, Appendix D.3

FIGURE E-5 - DOT / PHMSA CROSS-REFERENCE, CONTINUED

OPA 90 REQUIREMENTS (49 CFR 194)	LOCATION
Response zone appendices, Continued	
• Name, address, and telephone number of oil spill response organization	Figure 3.1-5, Appendix B

• Response activities and response resources including:
  • Equipment and supplies necessary to meet §194.115
  • Trained personnel necessary to sustain operation of the equipment and to staff the oil spill response organization and spill management team for the first seven days of the response
	Appendix A, Appendix B, Section 7.1.1, Figure 7.1-1

• Names and telephone numbers of federal, state, and local agencies which the operator expects to assume pollution response responsibilities	Figure 3.1-6
• Worst case discharge volume	Appendix D.7
• Method used to determine the worst case discharge volume, with calculations	Appendix D.7

• A map that clearly shows:
  • Location of worst case discharge
  • Distance between each line section in the Response Zone:
  • Each potentially affected public drinking water intake, lake, river, and stream within a radius of five miles of the line section
  • Each potentially affected environmentally sensitive area within a radius of one mile of the line section
	Figure 1-6, Section 6.10

• Piping diagram and plan-profile drawing of each line section; may be kept separate from the response plan if the location is identified	Figure 1-2

• For every oil transported by each pipeline in the response zone, emergency response data that:
  • Include name, description, physical and chemical characteristics, health and safety hazards, and initial spill-handling and firefighting methods
  • Meet 29 CFR 1910.1200 or 49 CFR 172.602
	Appendix D.8

FIGURE E-6 - OSHA CROSS-REFERENCE

EAP REQUIREMENTS (29 CFR 1910.38 [a] [2])	LOCATION
• Emergency escape procedures and emergency escape route assignments	Figure C-8, Section 2.2
• Procedures to be followed by employees who remain to operate critical plant operations before they evacuate	N/A
• Procedures to account for all employees after emergency evacuation has been completed	Section 2
• Rescue and medical duties for those employees who are to perform them	Section 2
• The preferred means of reporting fires and other emergencies	Section 2, Figure 3.1-6
• Names of regular job titles of persons or departments who can be contacted for further information or explanation of duties under the plan	Figure 3.1-5, Section 4.6

ERP REQUIREMENTS (29 CFR 1910.120 [l] [2])	LOCATION
• Pre-emergency planning	Appendix C, Appendix D
• Personnel roles, lines of authority, and communication	Section 4, Section 7.1.6
• Emergency recognition and prevention	Section 2, Appendix C, Appendix D
• Safe distances and places of refuge	Section 2
• Site security and control	Section 5.7, Section 7.3
• Decontamination procedures which are not covered by the site safety and health plan	Section 5.4, Section 5.5
• Emergency medical treatment and first aid	Section 2
• Emergency alerting and response procedures	Section 2, Section 3
• Critique of response and follow-up	Section 8.3
• PPE and emergency equipment	Section 7.1

FIGURE E-7 - VIRGINIA ODCP CROSS-REFERENCE

VIRGINIA ODCP REQUIREMENTS		LOCATION
A.1	The name of the facility, geographic location and access routes from land and water, if applicable.	Figure 1-2, Section 2.2
A.2	The name(s) of the operator(s) of the facility including address and phone number.	Figure 1-2
A.3	A physical description of the facility including a plan of the facility showing, if applicable:	Figure 1-2, Figure 1-5
	Oil storage areas	Figure 1-5
	Transfer locations	Figure 1-5
	Control stations	Figure 1-5
	Above and below ground oil transfer piping within the facility boundary (and including adjacent easements and leased property)	Figure C-9
	Monitoring systems	Figure C-4, Appendix D.3
	Leak detection systems and location of any safety protection devices	Section 7.1.1, Figure C-4, Appendix D.3
A.4	A copy of the material safety data sheet (MSDS) or its equivalent for each oil, or groups of oil with similar characteristics, stored, transferred or handled at the facility. To be equivalent, the submission shall contain the following:	Appendix D.8.1
A.4a	Generic or chemical name of the oil;	Appendix D.8.1
A.4b	Hazards involved in handling the oil; and	Appendix D.8.1
A.4c	A list of fire-fighting procedures and extinguishing agents effective with fires involving each oil or groups of oil demonstrating similar hazardous properties which require the same fire-fighting procedures.	Appendix D.8.1
A.5	The maximum storage or handling capacity of the facility and the individual tank capacities, or in the case of a pipeline, the average daily throughput of oil.	Figure 1-2; Figure C-5
A.6	A complete listing, including 24 hour phone numbers, of all Federal, state and local agencies required to be notified in event of a discharge.	Figure 3.1-6
A.7	The position title of the individual(s) responsible for making the required notifications and a copy of the notification check off list.	Figure 1-2, Figure 3.1-5
A.8	The position title, address and phone number of the individual(s) authorized to act on behalf of the operator to implement containment and cleanup actions. This individual shall be available on a 24-hour basis to ensure the appropriate containment and cleanup actions are initiated.	Figure 1-2, Figure 3.1-5
A.9	The position title of the individual(s) designated by the operator to ensure compliance, during containment and cleanup of a discharge, with applicable Federal, state and local requirements for disposal of both solid and liquid wastes.	Figure 1-2, Section 4.5.1, Figure 7.4-4

A.10 Identification and assurance by contract or other means acceptable to the State Water Control Board, of the availability of private personnel and equipment necessary to remove to the maximum extent practicable the worst case discharge and to mitigate or prevent a substantial threat of such a discharge.	Figure 3.1-6, Figure 7.1-1, Appendix B

FIGURE E-7 - VIRGINIA ODCP CROSS-REFERENCE, CONTINUED

VIRGINIA ODCP REQUIREMENTS	LOCATION
A.11 Assessment of the worst case discharge, including measures to limit the outflow of oil, response strategy and operational plan. For the purpose of this regulation, the worst case discharge is the instantaneous release of the volume of the largest tank on the facility during adverse weather conditions. Facilities shall take into consideration that due to hydraulic pressure of the release, the secondary containment will not contain this volume in its entirety.	Appendix D.5
A.12 Inventory of facility containment equipment including specification of quantity, type, location, time limits for gaining access to the equipment, and identification of facility personnel trained in its use.	Figure 3.1-5, Section 7.1.1
A.13 Identification and location of natural resources at risk (including, but not limited to, surface waters as indicated on the applicable USGS quadrangle maps, groundwater, public water supplies, public and private water wells and springs, State or Federal wildlife management areas, wildlife refuges, management areas, sanctuaries, property listed on the National Register of Historic Places and property listed an the National Register of Natural Landmarks), priorities for protection and means of protecting these resources.	Section 6.6
A.13aThe operator of a facility with an aggregate aboveground storage or handling capacity greater than 1,000,000 gallons of oil shall conduct a groundwater characterization study within the geographic boundaries of the facility to be submitted as part of the contingency plan.	Section 6.11
A.13bFor purposes of satisfying the requirement to identify and locate natural resources at risk, the operator of a pipeline shall identify surface waters as indicated on the applicable USGS quadrangle maps, public water supplies, state or federal wildlife management areas, wildlife refuges, management areas, sanctuaries, property listed on the National Register of Historic Places and property listed on the National Register of Natural Landmarks which could reasonably be expected to be impacted by the discharge. At the time of a discharge, the operator of a pipeline shall conduct a complete groundwater characterization study as required by the board and identify other natural resources at risk including public and private wells or springs which could reasonably be expected to be impacted by the	Section 6.6, Section 6.10, Section 6.11

discharge;	
A.14 Identification and location of any municipal or other services (water, sewerage), at risk, notification procedures applicable and means of protection of these services. The identification and location of all municipal services shall include those services for which official records are available. The operator of a pipeline shall determine which sections of the system are located in areas that would require an immediate response by the operator to prevent hazards to the public if a discharge occurred.	Section 6.3, Section 6.6, Section 6.10
A.15 If applicable, this plan shall include the facility's responsibility for responding to a discharge from a vessel moored at the facility and shall identify the sizes, types, and number of vessels that the facility can transfer oil to or from simultaneously.	Figure 1-2, Section 2.9
A.16 A description of training, equipment testing, and periodic unannounced oil discharge drills conducted by the operator to mitigate or prevent the discharge, or the substantial threat of a discharge.	Appendix A

FIGURE E-7 - VIRGINIA ODCP CROSS-REFERENCE, CONTINUED

VIRGINIA ODCP REQUIREMENTS	LOCATION
A.17 The facility's oil inventory control procedures. Facilities shall ensure that this control procedure is capable of providing for the detection of a discharge of oil within the shortest feasible time in accordance with recognized engineering practices and industry measurement standards.	Figure C-4, Appendix D.3
A.18 A detailed description of a system for early detection of a discharge to groundwater, utilizing up-gradient and down-gradient leak detection monitoring wells or other groundwater protection measures acceptable to the board (i.e., visual, interstitial, vapor and leak detection groundwater monitoring wells). The system will be operated, maintained and monitored in the manner approved and be subject to inspection by the department under the pollution prevention requirements of Part III (9 VAC 25-91-130 et seq., Pollution Prevention Requirements) of this chapter. Operators subject to subdivision 13 a of this subsection (i.e., 9 VAC 25-91-170 A 13 a), may utilize such GCS wells to meet this requirement when approved by the board.	Section 6.11
A.19 The procedures to be followed, upon detection of a discharge of oil, for testing and inspection of all tanks, piping and all oil transfer associated equipment that could reasonably be expected to be a point source for the discharge. These procedures shall be conducted within the shortest feasible time and in accordance with recognized engineering practices.	Section 2.1
A.20 The facility's preventive maintenance procedures applicable to the critical equipment of an oil storage and transfer system as well as the maximum pressure for each oil transfer system. The	Figure C-4

term "critical equipment" shall mean equipment that affects the safe operation of an oil storage and handling system.	
A.21 A description of the security procedures used by facility personnel to avoid intentional or unintentional damage to the facility.	Section 7.3, Figure C-4
A.22 A post discharge review procedure to assess the discharge response in its entirety.	Section 8.3

FIGURE E-8 - EPA RESPONSE PLAN COVER SHEET

Owner/ operator of facility:	
Facility name:	Virginia Beach Terminal
Facility address (street address or route):	3924 North Landing Road
City, state, and U.S. zip code	Virginia Beach, VA 23456
Facility mailing address:	As above
Facility phone number:	(757) 427-1066
(b) (7)(F) [redacted]	
Dun & Bradstreet number:	80-169-7764
Largest above ground oil storage tank capacity (gallons):	(b) (7)(F) [redacted]
Number of above ground oil storage tanks:	4 (including additive tanks)
North American Industrial Classification System (NAICS):	073013633
(b) (7)(F) [redacted]	

Facility distance to navigable water; mark the appropriate line.

0-1/4 ☑ 1/4-1/2 mile ☐ 1/2 - 1 mile ☐ > 1 mile ☐

APPLICABILITY OF SUBSTANTIAL HARM CRITERIA

Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

YES ☑ NO ☐

Does the facility have a total oil storage capacity greater than or equal to one million gallons and, within any storage area, does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation?

YES ☐ NO ☑

Does the facility have a total oil storage capacity greater than or equal to one million gallons and is the facility located at a distance (as calculated using the appropriate formula in or a comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?

YES ☑ NO ☐

Does the facility have a total oil storage capacity greater than or equal to one million gallons and is the facility located at a distance (using the appropriate formula in or a comparable formula) such that a discharge from the facility would shut down a drinking water intake?
YES ☐ NO ☑
Does the facility have a total oil storage capacity greater than or equal to one million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last five years?
YES ☐ NO ☑

CERTIFICATION	
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and that based on my inquiry of those individuals responsible for obtaining information, I believe that the submitted information is true, accurate, and complete.	
Signature: 	Date: 5/15/2008
Name: Kenneth Seals	Title: Terminal Manager

APPENDIX F Last Revised: May 2008

ACRONYMS AND DEFINITIONS

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F.1 Acronyms

F.2 Definitions

F.1 ACRONYMS

ACP	Area Contingency Plan
AFFF	Aqueous Film Forming Foam
ASTM	American Society of Testing Materials
BBL	Barrel(s)
BLM	Bureau of Land Management (USDOI)
BPD	Barrels Per Day
BPH	Barrels Per Hour
CERCLA	Comprehensive Environmental Response, Compensation & Liability Act of 1980, as amended
CFR	Code of Federal Regulations
CO_2	Carbon Dioxide
COTP	Captain of the Port (USCG)
CRZ	Contamination Reduction Zone
CWA	Clean Water Act of 1977 (Federal)
EAP	Emergency Action Plan
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ERAP	Emergency Response Action Plan
ERP	Emergency Response Plan
ERT	Emergency Response Team
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FOSC	Federal On-Scene Coordinator
FRP	Facility Response Plan
FRT	Facility Response Team
FWPCA	Federal Water Pollution Control Act of 1972
GIS	Geographic Information System
GPM	Gallons Per Minute
HAZMAT	Hazardous Materials
HMIS	Hazardous Material Information System
IAP	Incident Action Plan
IC	Incident Commander
ICS	Incident Command System

JIC	Joint Information Center

F.1 ACRONYMS, CONTINUED

LEL	Lower Explosive Limit
LEPC	Local Emergency Planning Committee
LEPD	Local Emergency Planning District
LNG	Liquid Natural Gas
LPG	Liquefied Petroleum Gas
MSDS	Material Safety Data Sheets
MTR	Marine Transportation Related
N/A	Not Applicable
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NIIMS	National Interagency Incident Management System
NM	Nautical Miles
NOAA	National Oceanic and Atmospheric Administration
NRC	National Response Center
NRDA	National Resource Damage Assessment
NRT	National Response Team
OBA	Oxygen Breathing Apparatus
OPA 90	Oil Pollution Act of 1990
OSC	On-Scene Coordinator/Commander
OSHA	Occupational Safety and Health Administration (USDL)
PHMSA	Pipeline and Hazardous Materials Safety Administration (DOT)
PPE	Personal Protective Equipment
PREP	(National) Preparedness for Response Exercise Program
QI	Qualified Individual
RCRA	Resource Conservation and Recovery Act of 1976
RQ	Reportable Quantity
SARA	Superfund Amendments and Reauthorization Act
(b) (7)(F)	[redacted]
SCBA	Self Contained Breathing Apparatus
SDWA	Safe Drinking Water Act of 1986
SERC	State Emergency Response Commission
SETS	Safety Environment and Training Services
SI	Surface Impoundment

SIC	Standard Industrial Classification (Code)
EMT	Emergency Management Team
SOSC	State On-Scene Coordinator

F.1 ACRONYMS, CONTINUED

SPCC	Spill Prevention, Control, and Countermeasures (Plan)
SSC	Scientific Support Coordinator (NOAA)
UCS	Unified Command System
UEL	Upper Explosive Limit
USACOE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USDOD	U.S. Department of Defense
USDL	U.S. Department of Labor
USDOE	U.S. Department of Energy
USDOI	U.S. Department of the Interior
USDOJ	U.S. Department of Justice
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service (USDOI)
USGS	U.S. Geological Survey (USDOI)

F.2 DEFINITIONS

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 with the Captain of the Port (COTP) zone in which the systems or equipment are intended to function.

Aqueous Film Forming Foam
A fluoro-carbon surfactant that acts as an effective vapor securing agent due to its effect on the surface tension of the water. Its physical properties enable it to float and spread across surfaces of a hydrocarbon fuel with more density than protein foam.

Average Most Probable Discharge **(USCG)**
A discharge of the lesser of 50 barrels (2100 gallons) or one percent of the volume of the worst case discharge.

Barrel
Measure of space occupied by 42 U. S. gallons at 60 degrees Fahrenheit.

Bleve
A boiling liquid-expanding vapor explosion; failure of a liquefied flammable gas container caused by fire exposure. Pronounced "blevey."

Boilover
Occurs when the heat from a fire in a tank travels down to the bottom of the tank causing water that is already there to boil and push part of the tank's contents over the side.

Carbon Dioxide
A heavy, colorless, odorless, asphyxiating gas, that does not normally support combustion. It is one and one-half times heavier than air and when directed at the base of a fire its action is to dilute the fuel vapors to a lean mixture to extinguish the fire.

Class A Fire
A fire involving common combustible materials which can be extinguished by the use of water or water solutions. Materials in this category include wood and wood-based materials, cloth, paper, rubber and certain plastics.

Class B Fire
A fire involving flammable or combustible liquids, flammable gases, greases and similar products. Extinguishment is accomplished by cutting off the supply of oxygen to the fire or by preventing flammable vapors from being given off.

Class C Fire
A fire involving energized electrical equipment, conductors or appliances. Nonconducting extinguishing agents must be used for the protection of firefighters.

Class D Fire
A fire involving combustible metals, for example, sodium, potassium, magnesium, titanium and aluminum. Extinguishment is accomplished through the use of heat-absorbing extinguishing agents such as certain dry powders that do not react with the burning metals.

F.2 DEFINITIONS, CONTINUED

Cold (Support) Zone
An area free of contaminants so that Personal Protection Equipment (PPE) is not required for personnel working in this area. Command functions and supporting operations are carried out here.

Command Post
A site located at a safe distance from the spill site where response decisions are made, equipment and manpower deployed, and communications handled. The Incident Commander and the On-Scene Coordinators may direct the on-scene response from this location.

Communication Equipment
Equipment that will be utilized during response operations to maintain communication between employees, contractors, federal/state/local agencies.

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.

Contamination Reduction Zone
Same as the warm zone, a buffer between the hot and cold zones. Decontamination activities take place there. Equipment needed to support the primary response operation may be staged in the warm zone.

Contingency Plan
A document used by: (1) federal, state, and local agencies to guide planning and response

procedures regarding spill of oil, hazardous substances, or other emergencies; (2) a document used by industry as a response plan to spills of oil, hazardous substances, or other emergencies occurring upon their vessels or at their facilities.

Contract or Other Approved Means
Includes:

- A written contractual agreement with a response contractor. The agreement should identify and ensure the availability of the specified personnel and equipment described under U.S.C.G. Regulations within stipulated response times in the specified geographic areas
- Certification by the facility owner or operator that the specified personnel and equipment described under USCG Regulations are owned, operated, or under the direct control of the facility owner or operator, and are available within stipulated times in the specified geographic areas
- Active membership in a local or regional oil spill removal organization that has identified specified personnel and equipment described under USCG Regulations that are available to respond to a discharge within stipulated times in the specified geographic areas
- A document which:
    - Identifies the personnel, equipment, services, capable of being provided by the response contractor within stipulated response times in specified geographic areas
    - Sets out the parties' acknowledgment that the response contractor intends to commit the resources in the event of a response
    - Permits the Coast Guard to verify the availability of the response resources identified through tests, inspections, drills
    - Is incorporated by reference in the Response Plan
- For a facility that could reasonably be expected to cause substantial harm to the environment, with the consent of the response contractor or oil spill removal organization, the identification of a response contractor or oil spill removal organization with specified equipment and personnel which are available within stipulated response times in specific geographic areas.

F.2 DEFINITIONS, CONTINUED

Demand Breathing Apparatus
A type of self-contained breathing apparatus that provides air or oxygen from a supply carried by the user.

Dispersants
Those chemical agents that emulsify, disperse, or solublize 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 flotation/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.

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.

Exclusion Zone
Same as hot zone, the area where a hazard exists. This is the hazardous location on site, therefore entry requires personal protective equipment (PPE). It must be big enough for both mitigation activities and protection of personnel in the warm zone should an explosion, fire, change of wind direction, or an unexpected release occur during response activities.

Explosive Range
Flammable range; the range of the mixture of air and flammable gas or flammable vapor of liquids that must be present in the proper proportions for the mixture to be ignited. The range has upper and lower limits; any mixture above the upper explosive limit or below the lower explosive limit will not burn.

Facility
Any pipeline, structure, equipment, or device used for handling oil including, but not limited to, underground and aboveground storage tanks, impoundments, mobile or portable drilling or workover rigs, barge mounted drilling or workover rigs, and portable fueling facilities located offshore or on or adjacent to coastal waters or any place where a discharge of oil from the facility could enter coastal waters or threaten to enter the coastal waters.

Federal Fund
The oil spill liability trust fund established under OPA.

First Responders, First Response Agency
A public health or safety agency (i.e., 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.

Flashover
The ignition of combustibles in an area heated by convection, radiation, or a combination of the two. The action may be a sudden ignition in a particular location followed by rapid spread or a "flash" of the entire area.

F.2 DEFINITIONS, CONTINUED

Flash Point
The temperature at which a liquid fuel gives off sufficient vapor to form an ignitable mixture near its surface.

Foam
A blanket of bubbles that extinguishes fire mainly by smothering. The blanket prevents flammable vapors from leaving the surface of the fire and prevents oxygen from reaching the fuel. The water in the foam also has a cooling effect.

Hazardous Material
Any nonradioactive solid, liquid, or gaseous substance which, when uncontrolled, may be harmful to humans, animals, or the environment. Including but not limited to substances otherwise defined as hazardous wastes, dangerous wastes, extremely hazardous wastes, oil, or pollutants.

Hazardous Substance
Any substance designed as such by the Administrator of EPA pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act; regulated pursuant to Section 311 of the Federal Water Pollution Control Act.

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 Resources 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.

Higher Volume Port Area
Ports of:

- Boston, MA
- New York, NY
- Delaware Bay and River to Philadelphia, PA
- St. Croix, VI
- Pascagoula, MS
- Mississippi River from Southwest Pass, LA to Baton Rouge, LA
- Louisiana Offshore Oil Port (LOOP), LA
- Lake Charles, LA
- Sabine-Nachez River, TX
- Galveston Bay and Houston Ship Channel, TX
- Corpus Christi, TX
- Los Angeles/Long Beach Harbor, CA
- San Francisco Bay, San Pablo Bay, Carquinez Strait, Suisun Bay to Antioch, CA
- Straits of Juan de Fuca and Puget Sound, WA
- Prince William Sound, AK

Hot (Exclusion) Zone
The area where a hazard exists. This is the hazardous location on site, therefore entry requires personal protective equipment (PPE). It must be big enough for both mitigation activities and protection of personnel in the warm zone should an explosion, fire, change of wind direction, or an unexpected release occur during response activities.

F.2 DEFINITIONS, CONTINUED

Hyperthermia
A dangerously high fever that can damage nerve centers. This condition can result from exposure to excessive heat over an extended period of time.

Ignition Temperature
The lowest temperature at which a fuel will burn without continued application of an ignition

source.

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.

Incident Command System
A method by which the response to an extraordinary event, including a spill, is categorized into functional components and responsibility for each component assigned to the appropriate individual or agency.

Interim Storage Site
A site used to temporarily store recovered oil or oily waste until the recovered oil or oily waste is disposed of at a permanent disposal site. Interim storage sites include trucks, barges, and other vehicles, used to store waste until the transport begins.

Lead Agency
The government agency that assumes the lead for directing the spill response.

Lead Federal Agency
The agency which coordinates the federal response to incidents on navigable waters. The lead Federal agencies are:

- **U. S. Coast Guard (USCG):** Oil and chemically hazardous materials incidents on navigable waters
- **Environmental Protection Agency (EPA):** Oil and chemically hazardous materials incidents on most inland waters and in the inland zone

Lead State Agency
The agency which coordinates state support to Federal and/or Local governments or assumes the lead in the absence of a Federal spill response.

Lower Flammable Limit
Minimum flammable concentration of a particular gas in the air.

Marine Transportation-Related Facility (MTR Facility)
An onshore 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
The planning values derived from the planning criteria used to evaluate the response resources 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 (USCG)
A discharge of the lesser of 2,500 barrels or ten percent of the volume of a worst case discharge.

F.2 DEFINITIONS, CONTINUED

Medium Discharge **(EPA)**
Same as maximum most probable discharge.

National Contingency Plan
The plan prepared under the Federal Water Pollution Control Act (33 United States 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.

Nearshore Area
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 (COLREG) lines) 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:

- At least 50% of which by volume, distill at a temperature of 340EC (645EF)
- At least 95% of which volume, distill at a temperature of 370EC (700EF)

Non-Petroleum Oil
Oil of any kind that is not petroleum-based. It includes, but is not limited to, animal and vegetable oils.

Offshore Area
The area beyond 12 nautical miles measured from the boundary lines defined in 46 CFR Part 7 extending seaward to 50 nautical miles, except in the Gulf of Mexico. In the Gulf of Mexico it is the area beyond 12 nautical miles of the line of demarcation (COLREG lines) defined in '80-740 - 80.850 of Title 33 of the CFR extending seaward to 50 nautical miles.

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 Removal Organization (OSRO)
An entity that provides oil spill response resources, and includes any for profit or not-for-profit contractor, cooperative, or in-house response resources that have been established in a geographic area to provide required response resources.

Operating Area
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
Rivers and canals, inland, Great Lakes, or ocean. These terms are used to define the conditions in which response equipment is designed to function.

Overhaul
A procedure following a fire whereby the area is examined for hidden fire and fire extension

and the fire area is cleaned up.

F.2 DEFINITIONS, CONTINUED

Owner or Operator
Any person, individual, partnership, corporation, association, governmental unit, or public or private organization of any character.

PPE - Level A
Offers the highest level of respiratory, skin, eye and mucous membrane protection. Intended for IDLH or near IDLH conditions. Level A consists of the following:

- Positive pressure self contained breathing apparatus (SCBA)
- Fully encapsulated chemical resistant unit
- Inner and outer chemical resistant gloves
- Chemical resistant boots with steel toe and shank
- Hard hat
- Other accessories as required

PPE - Level B
Offers the highest degree of respiratory protection, but a lesser level of skin and eye protection. Level B is the minimum level recommended on initial site entries until the hazards have been further identified and defined by monitoring sampling, and other methods. Level B protection may be used where confined space entry conditions exist and existing gases or vapors are not harmful to the skin. Level B consists of the following:

- Positive pressure self contained breathing apparatus (SCBA)
- Chemical resistant clothing appropriate for hazard
- Inner and outer chemical resistant gloves
- Chemical resistant boots with steel toe and shank
- Hard hat
- Other accessories as required

PPE - Level C
May be used when the type of airborne substance is known, its concentration has been measured, and criteria for using air-purifying respirators have been met. Also, skin and eye exposure is unlikely. Level C consists of the following:

- Full-face, air purifying respirator appropriate for contaminant
- Chemical, fire and/or heat resistant clothing appropriate for hazard
- Inner and outer chemical resistant gloves
- Chemical resistant boots with steel toe and shank
- Hard hat
- Other accessories as required

PPE - Level D
Standard minimum level of protection required during routine operations or incidents with no known hazards. Level D consists of the following:

- Flame retardant clothing
- Safety glasses
- Leather boots or shoes

Hard hat
- Fire fighting protective clothing

F.2 DEFINITIONS, CONTINUED

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:

- Group II - specific gravity less than .85
- Group III - specific gravity between .85 and less than .95
- Group IV - specific gravity .95 to and including 1.0
- Group V - specific gravity greater than 1.0

Primary Response Contractor(s)
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(s)
An English-speaking representative(s) of the facility identified in the plan, located in the United States, available on a 24-hour basis, familiar with implementation of the facility response plan, and trained in his or her responsibilities under the plan. This person must have full written authority to implement the facility's response plan. This includes:

- Activating and engaging in contracting with identified oil spill removal organization(s)
- Acting as a liaison with the predesignated of Federal On-Scene Coordinator (FOCS)
- Obligating, either directly or through prearranged contracts, funds required to carry out all necessary or directed response activities

Regional Response Team
The Federal Response Organization (consisting of representatives from selected Federal and State agencies) which acts as a regional body responsible for planning and preparedness before an oil spill occurs and providing advice to the FOSC in the event of a major or substantial spill.

Reid Vapor Pressure Method
Method used by the American Society of Testing Materials to test vapor pressure. It is a measure of the volatility, or tendency to vaporize, of a liquid.

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.

Rivers and Canals
A body of water confined within the inland area that has a projected depth of 12 feet or less, including the Intracoastal Waterway and other waterways artificially created for navigation.

F.2 DEFINITIONS, CONTINUED

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.

Slopover
An event that occurs when water is introduced into a tank of very hot liquid, causing the liquid to froth and spatter.

Small Discharge (EPA)
Same as average most probable discharge.

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.

Emergency Management Team
The personnel identified to staff the organizational structure identified in a response plan to manage response plan implementation.

Spontaneous Ignition
A fire that occurs without a flame, spark, hot surface, or other outside source of ignition.

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 Reauthorization Act of 1986 (SARA). The SERC approves the State Oil and Hazardous Substance Discharge Prevention and Contingency Plan and Local Emergency Response Plans.

Static Electricity
Charges of electricity accumulated on opposing and usually moving surfaces having negative and positive charges, respectively. A hazard exists where the static potential is sufficient to discharge a spark in the presence of flammable vapors or combustible dusts.

Support Zone
Same as cold zone, an area free of contaminants so that personal protection equipment (PPE) is not required for personnel working in this area. Command functions and supporting operations are carried out here.

Tornado Warning
A tornado has been sighted.

Tornado Watch
Conditions are favorable for tornados to form.

F.2 DEFINITIONS, CONTINUED

Unified Command
The method by which local, state, and federal agencies 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

Warm (Contamination Reduction) Zone
A buffer between the hot and cold zones. Decontamination activities take place there. Equipment needed to support the primary response operation may be staged in the warm zone.

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.

Wildlife Rescue
Efforts made in conjunction with federal and state agencies to retrieve, clean, and rehabilitate birds and wildlife affected by an oil spill.

APPENDIX G Last Revised: May 2008

ADDITIONAL INFORMATION

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- ICS Form 201
- ICS Form 202
- ICS Form 203
- ICS Form 204
- ICS Form 204a
- ICS Form 205
- ICS Form 205a
- Virginia Beach ICS Form 206
- ICS Form 207
- ICS Form 209
- ICS Form 210
- ICS Form 211e
- ICS Form 211p
- ICS Form 213
- ICS Form 214
- ICS Form 214a
- ICS Form 215
- ICS Form 216
- ICS Form 217
- ICS Form 218
- ICS Form 219-2
- ICS Form 219-4
- ICS Form 219-6
- ICS Form 219-7

- ICS Form 220
- ICS Form 221
- ICS Form 230
- ICS Form 231
- ICS Form 232
- IAP Cover Pg

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EMERGENCY RESPONSE ACTION PLAN

Last Revised: October 2011

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1.0 INTRODUCTION

1.1 Purpose / Scope of Plan

This Virginia Beach Terminal Emergency Response Action Plan (ERAP) provides guidelines to assist in managing an emergency. The primary goal of this Plan is to provide tools to enable an efficient, coordinated, and effective response to emergencies.

The ERAP is not meant to replace common sense or actions not specifically described herein. Responders should continually evaluate the effectiveness of actions called for in this Plan and make the appropriate adjustments based on past experience and training.

This ERAP contains tactical response plans that identify site-specific potential response strategies. Response strategies, equipment and manpower requirements, and site conditions are based on conditions that were present during site assessments. Actual conditions at the time of a response may vary significantly and may necessitate the need for a different strategy and/or equipment requirements. The strategies and equipment lists contained in this plan should be used as guidelines only.

This document is intended to satisfy the requirements of 29 CFR 1910.38(a)(2) and 1910.120(l)(2) (OSHA Emergency Response Plan and Emergency Action Plan) and 40 CFR

Part 112.20 (EPA Emergency Response Action Plan). Cross-references for these regulations are located in **APPENDIX E** of the Spill Response Plan.

1.2 Plan Review and Updating Procedures

The ERAP will be reviewed and modified as appropriate to address new information.

Plan revisions will be numbered sequentially and entered on the Record of Changes Form. The change numbers, date, and description of change will also be entered on the form. These changes are then to be distributed to all plan holders on the Distribution List.

1.3 Facility Description

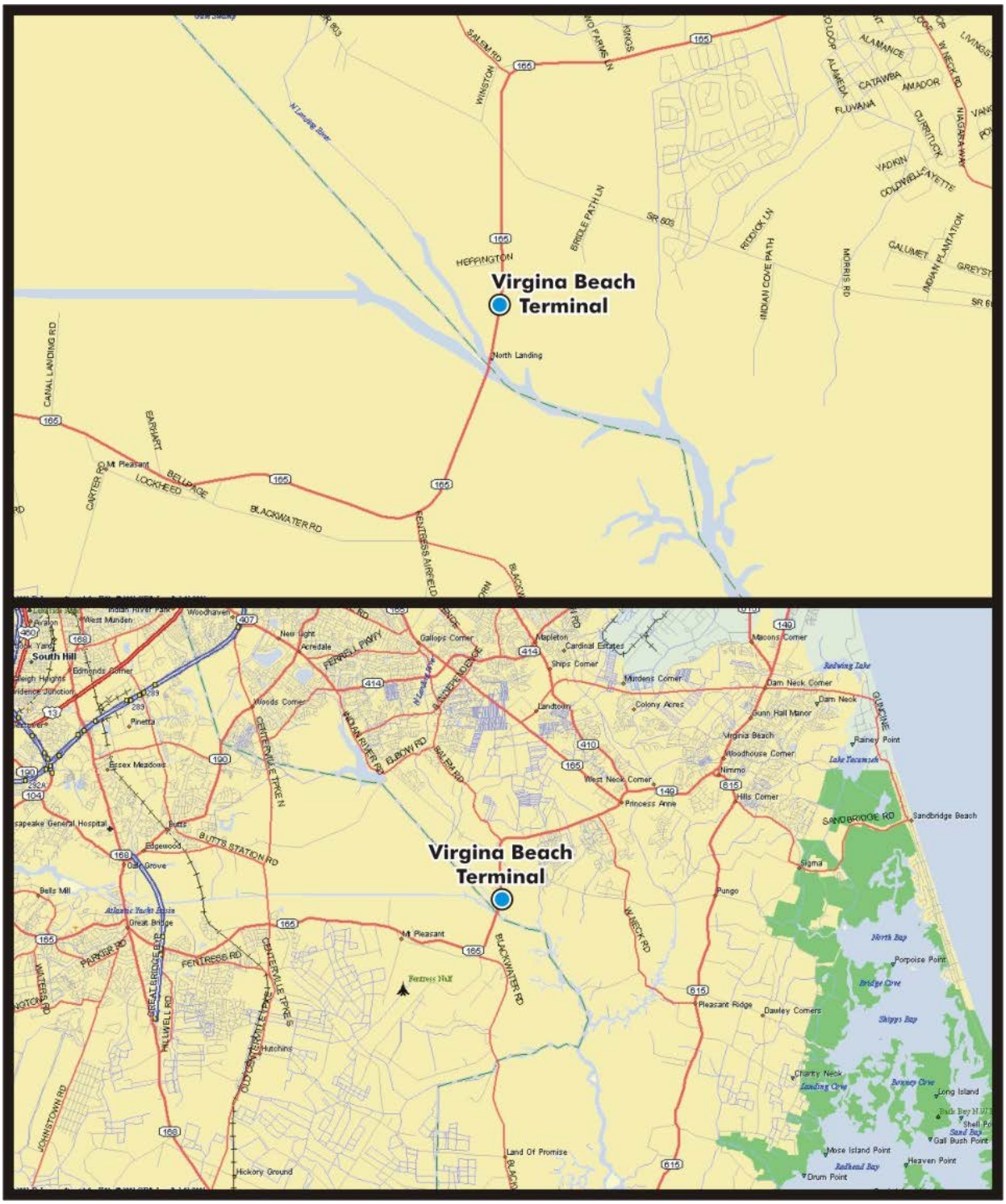
ICW Milepost Marker: 2

The Facility stores jet/kerosene and has a total storage (b) (7)(F) barrels with an average storage volume (b) (7)(F) . Product is received via vessel and distributed by pipeline. Shipments are received by the Terminal via barge. Shipments are delivered to Oceana NAS by the Terminal via the Company-owned onshore transmission pipeline. The annual volume in petroleum product transfers is approximately 250,000 bbls. The Terminal has the ability to ship JP5 Jet Fuel to Oceana Naval Air Station via the Company-owned onshore transmission pipeline. The pipeline is buried in trenches to protect it from external disturbances with a 3-foot minimum cover in the right-of-ways.

The pipeline is 8.85 miles long, with a 6.62-inch diameter, and passes along the North Landing Road and Princess Anne Road along its path from the Terminal to Oceana Naval Air Station. The pipeline is coated, and equipped with cathodic protection and leak detection systems

1963 - (b) (7)(F) Each) are re-erected on-site.
1985 - Miscellaneous (recovery) tank (200 bbls.) is installed on-site.
1992 - Product recovery tank (7 bbls. is installed on-site.
1998 - Dock house is built on dock platform; dock product recovery tank is modified.
2003 - Spill response boat and shed are installed at dock platform.

FIGURE 1-1 - FACILITY AREA MAP



2.0 RESPONSE STEPS

2.1 SPILL / RELEASE RESPONSE

RESPONSE ACTION	
First Person to Discover Spill	
Immediately notify Supervisory Personnel. Take appropriate action to protect life and ensure safety of personnel. Contact the appropriate local emergency responders or	☐

request the office to do so.	
Immediately shut down terminal operations (if applicable). (b) (7)(F) [redacted]	☐
Secure the scene. Isolate the area and assure the safety of people and the environment. Keep people away from the scene and outside the safety perimeter.	☐
Supervisory Personnel	
Assume role of Incident Commander until relieved by upper Management (if applicable).	☐
Conduct preliminary assessment of health and safety hazards.	☐
Evacuate nonessential personnel, notify emergency response agencies to provide security, and evacuate surrounding area (if necessary).	☐
Call out spill response contractors (**FIGURE 3-5**).	☐
If safe to do so, direct facility responders to shut down potential ignition sources in the vicinity of the spill, including motors, electrical pumps, electrical power, flairs, etc. Keep drivers away from truck rack if spill occurs there.	☐
If safe to do so, direct facility responders to shut down and control the source of the spill. Be aware of potential hazards associated with product and ensure that lower explosive limits (LELs) are within safe levels before sending personnel into the spill area.	☐
If safe to do so, direct facility responders to stabilize and contain the situation. This may include construction of minor earthen berms and/or sorbent boom and pads.	☐
For low flash oil (<100ºF), consider applying foam over the oil, using water spray to reduce vapors, grounding all equipment handling the oil, and using non-sparking tools.	☐
If there is a potential to impact shorelines, consider lining shoreline with sorbent or diversion boom to reduce impact.	☐
Notify Local Emergency Responders. Obtain the information necessary to complete the Leak Accident Report Form (**FIGURE 3-2**).	☐
Make local notifications: • LEPC • Police • Fire • Sheriff	☐
HSE Regional Manager	
Make appropriate notifications: • National Response Center (800) 424-8802 • External regulatory notifications (**FIGURE 3-5**)	☐

2.1 SPILL/RELEASE RESPONSE, CONTINUED

RESPONSE ACTION

On-Scene Coordinator	
Activate all or a portion of Emergency Management Team (EMT) (as necessary). HSE Department will maintain contact with notified regulatory agencies.	☐
Ensure the EMT has mobilized spill response contractors (if necessary). It is much better to demobilize equipment and personnel if not needed than to delay contacting them if they are needed.	☐
Document all response actions taken, including notifications, agency/media meetings, equipment and personnel mobilization and deployment, and area impacted. (Refer to **SECTION 5** in the Spill Response Plan for documentation.)	☐
Water-based Spills: Initiate spill tracking and surveillance operations. Determine extent of pollution via surveillance aircraft or vehicle. Estimate volume of spill utilizing information in **SECTION 2.1.3** in the Spill Response Plan. Send photographer / videographer, if safe. Use of dispersants requires Federal or State approval.	☐
Land-based Spills: Initiate spill tracking and surveillance, if applicable.	☐
SECONDARY RESPONSE ACTIONS (Refer to EMT job descriptions in **SECTION 4.6** in the Spill Response Plan)	
FACILITY-SPECIFIC RESPONSE CONSIDERATIONS (Refer to **SECTIONS 6.0** through **SECTION 11.0** for maps, tactical plans, and sensitivity information).	

SITE-SPECIFIC ACTIONS	
DOCUMENT ALL ACTIONS TAKEN	
First Priority	
Account for all personnel and visitors.	☐
Identify and assess fire/safety hazards.	☐
Second Priority	
Secure spill source, if possible.	☐
Assure all required notifications are conducted.	☐
Secure all drainage leading from facility.	☐
Third Priority	
Facility drainage and secondary containment will be adequate to contain a spill of small or medium size, preventing it from reaching North Landing River. Once the spill has been contained, resources are present at the Facility to recover spilled product, safety conditions permitting.	☐
If unable to contain spill to Facility property, refer to SECTION 6.8 of the FRP or SECTION 9.0 of the ERAP for location of booming strategy.	☐
Once deployment of response equipment has been completed, initiate recovery of product.	☐
Upon arrival of EMT, assure all information is accurate and complete prior to being released.	☐
Assure proper documentation has been completed from initial discovery of spill to finish; reference **SECTION 5** in the Spill Response Plan.	☐

2.2 EVACUATION

EVACUATION CHECKLIST	
TASK	
Request assistance from off-site response organizations; convey Command Post's location. Notify appropriate agencies (if appropriate).	☐
Assemble personnel at predetermined safe location: upwind/up gradient of release (assembly area).	☐
Account for Company and contractor personnel.	☐
Assess casualties (number/type/location).	☐
Determine probable location of missing personnel.	☐
Secure site, establish re-entry point and check-in/check-out procedures.	☐
Develop list of known hazards (confined spaces, electrical hazards, physical hazards, vapors, oxygen deficiency, fire/explosion, etc.).	☐
Monitor situation (weather, vapors, product migration) for significant changes.	☐
Assist in developing a Rescue Plan, if necessary.	☐
Site-Specific Actions:	
	☐

2.2 EVACUATION, CONTINUED

EVACUATION FACTORS	
FACTOR	**DESCRIPTION**
Stored material location	• Located in oil storage area • Identified in facility Plot Plan (**FIGURE 5-4**)
Spilled material hazards	• Hazard is fire/explosion
Water currents, tides or wave conditions	• The water conditions at the dock should not effect the evacuation required by any incident at the non-transportation related portion of the facility.
Evacuation routes	• Routes are summarized on Evacuation Plan Diagram (**FIGURE 5-2** • Criteria for determining safest evacuation routes from facility may include: wind direction, potential exposure to toxins and carcinogens, intense heat, potential for explosion/fire, and blockage of planned route by fire, debris, or released liquid

Alternate evacuation routes	Alternate routes may exist; refer to Evacuation Plan Diagram (**FIGURE 5-2**)
Injured personnel transportation	• Emergency services can be mobilized to the facility (**FIGURE 5-2**
Alarm/Notification system location	• The facility does not have an evacuation alarm system. All employees will be notified of required evacuations and preferred routes via hand held radios issued to all operators and by intercom for office personnel.
Community evacuation plans	• Company may request local police, county sheriff and/or state police assistance (**FIGURE 3-5**). Community evacuations are the responsibility of these agencies.
Spill flow direction	• South • Identified in facility drainage diagram (**FIGURE 5-1**)
Prevailing wind direction and speed	• The prevailing winds at the facility are normally from the east. However, changing in weather condition require that the person directing any evacuation be cognizant of the wind direction and speed. A shift in the wind direction may expose personnel to smoke or fumes. An increase in wind speed may accelerate and spread a fire. • Because wind direction varies with weather conditions, consideration for evacuation routing will depend in part on wind direction
Emergency personnel/response equipment arrival route	• Response equipment will arrive at the facility from the east via North Landing Road. Response contractors are instructed to report to the qualified individual or designated field operation personnel from instruction on deployment. • Land: North Landing Road (State Route 165) • Water: North Landing River (Intracoastal Waterway) • Directions to nearest medical facility provided below

2.2 EVACUATION, CONTINUED

EVACUATION FACTORS	
FACTOR	**DESCRIPTION**
Centralized check-in area	• front entrance • Supervisor is responsible for head count

Mitigation Command Center location	• Initial Command Center located at If evacuation of the Terminal is required, the initial mitigation control center will be established at the Terminal Office. • Mobile Command Posts may be established as necessary
Facility Shelter Location	• If the preferred evacuation procedure is to shelter in place all personnel will be directed to report to the office buildings of the terminal at which they are located. Once all personnel are accounted for the office windows and doors will be sealed and any outside air source eliminated. (i.e. HVAC make up air) • Not a safe harbor from fires, explosions, vapor clouds, or other significant emergencies; however, may be used for temporary shelter from inclement weather
Directions to nearest medical facility	Directions to The nearest hospital is Virginia Beach General Hospital, located at 1060 First Colonial Road, Virginia Beach, VA approximately 13.2 miles away. Local EMS Services or a commercial ambulance service will transport injured personnel to the hospital. : • 1. Start out going NORTH on NORTH LANDING RD / VA-165 toward HEFFINGTON DR. 2. Turn LEFT onto SALEM RD. 3. Turn RIGHT onto N LANDSTOWN RD. 4. Turn RIGHT onto DAM NECK RD. 5. Turn LEFT onto LONDON BRIDGE EXT. 6. LONDON BRIDGE EXT becomes LONDON BRIDGE RD. 7. Turn SLIGHT RIGHT. 8. Turn RIGHT onto VIRGINIA BEACH BLVD / US-58 E. Continue to follow US-58 E. 9. Turn LEFT onto FIRST COLONIAL RD / VA-408. 10. End at 1060 First Colonial Rd, Virginia Beach, VA 23454-3002

2.3 TORNADO

TORNADO CHECKLIST	
TASK	
Monitor news media reports (**FIGURE 3-5**). • Tornado watch means conditions are favorable for tornadoes. • Tornado warning means a tornado has been sighted.	☐
When a tornado warning is issued, immediately notify all personnel on-site.	

Notify off site personnel of the situation (Control Center or Regional Management).	☐
Take shelter: • Go to an interior room on the lowest floor. • Get under a sturdy piece of furniture or solid structure. • Use your arms to protect head and neck.	☐
Have location personnel report to the designated area.	☐
Account for all personnel on duty.	☐
Look for funnel formations on the ground or in the clouds; listen for a roar that sounds like a jet aircraft or rail traffic.	☐
If the facility is damaged by the tornado, notify Management.	☐
Go to the scene of the incident to evaluate the situation. • Be aware of broken glass and downed power lines. • Assess the area for damaged equipment or product releases. • Check for injuries. • Use caution entering a damaged building.	☐
Update Supervisory Personnel/Management.	☐
Perform Initial Response Actions functions as stated in **SECTION 2.1**.	☐
Conduct post-emergency evaluation and report.	☐
Site-Specific Actions:	
	☐

2.4 FLOOD

FLOOD CHECKLIST	
TASK	
Perform continuous monitoring of the situation by listening to radio and/or television reports (**FIGURE 3-5**). • Flash flood watch means flooding is possible. • Flash flood warning means flooding is occurring or is imminent.	☐
Update Supervisory Personnel when flooding is imminent.	☐
Establish an evacuation plan (**SECTION 2.2**).	☐
Take preliminary actions to secure the facility before flooding and mandatory evacuation.	☐

Consider having sandbags brought to sites that could be affected by the flooding.	☐
Consider obtaining portable pumps and hoses from local suppliers or from other petroleum service locations in the area.	☐
Remove product from underground storage tanks (i.e., sumps and separators, if applicable) and replace with water to prevent them from floating out of the ground.	☐
If additional new product is available fill each tank to the minimum level necessary to prevent buoyancy in the event of flooding (Rule of thumb is 30% of the safe fill height). If additional product is not available, transfer appropriate product among tanks to prevent buoyance. If minimum levels cannot be reached through product transfer, add water bottoms.	☐
Plug all rack drains and facility drains connected to the sump.	☐
Empty all dikes of water.	☐
Ensure that tank roof drains are working properly.	☐
Anchor all bulk additive tanks, fuel barrels, empty drums, and propane tanks (if applicable).	☐
Notify Supervisory Personnel/Management that the facility will be closed. Customer should be notified.	☐
Back up computer files.	☐
Remove assets such as files, computers, spare parts, and vehicles.	☐
Shut off high voltage power and natural gas lines.	☐
Close all valves on product and additive storage tanks.	☐
Before evacuation, know where all the employees will be residing and obtain phone numbers so they can be contacted if additional emergencies occur.	☐

2.4 FLOOD, CONTINUED

FLOOD CHECKLIST	
TASK	
Conduct a post-emergency evacuation and report.	☐
Maintain hazards awareness: • Structural damage; • Equipment damage and product release; • Downed power lines; • Leaking natural gas, water, and sewer lines; • Poisonous snakes and other wildlife sheltering in structures, vehicles, and furniture; and • Avoid direct contact with flood water, mud, and animal carcasses.	☐

2.5 MEDICAL

MEDICAL CHECKLIST	
TASK	
Summon Emergency Medical Services (EMS) to the scene (**FIGURE 3-5**).	☐
Do not move the patient unless a situation (such as a fire) threatens patient's life.	☐
If trained, provide appropriate first aid for both injury and shock until the EMS arrives at the scene.	☐
As the situation warrants, try to stop the bleeding and keep the patient breathing until the EMS arrives at the scene.	☐
The rescuer's role includes: • Removing the patient from any situation threatening patient's life or the lives of rescuers. • Correcting life-threatening problems and immobilizing injured parts before transporting the patient. • Transporting the patient in a way that minimizes further damage to injured parts. • Administering essential life support while the patient is being transported. • Observing and protecting the patient until medical staff can take over. • Administering care as indicated or instructed.	☐
Notify Supervisory Personnel and/or Regional Management.	☐
Notify victim's immediate family.	☐
Complete follow-up and written reporting, as the situation demands.	☐

(b) (7)(F)

[redacted]

(b) (7)(F)

[redacted]

(b) (7)(F)

[redacted]

(b) (7)(F)

2.7 FIRE AND/OR EXPLOSION

Your first consideration is always the safety of people in the immediate area, including your own.

The first responder's initial objective is site management.

FIRE AND/OR EXPLOSION CHECKLIST	
TASK	
At a manned facility	
Evaluate the situation; approach cautiously from upwind; do not rush in.	☐
Notify the local police and fire departments (Dial 911).	☐
Sound the facility alarm and push the red emergency shutdown switch (if equipped).	

Notify Qualified Individual and Operations Control (if applicable).	☐
Appropriately trained personnel may attempt to extinguish the fire if it is in the incipient (early) stage and **if it can be done safely**.	☐
In the event the fire is too large for an individual to fight alone, the individual sounding the alarm or making the phone call should stand by at a safe distance to direct the fire department to the scene of the fire and keep personnel and vehicles from entering the danger area.	☐
Alert all Facility areas of the exact location and extent of the fire.	☐
Instruct all drivers to discontinue loading, disconnect loading arms, and tell all drivers present to stand by the trucks (if safe to do so) and wait for instruction to remove same to safe area.	☐
Shut off all pumps.	☐
If the fire/explosion is a result of a pipe rupture, isolate product release by closing valves.	☐
If product is being received from pipelines, notify the appropriate pipeline personnel of the fire and request that the pipeline be shut down. The tank which is receiving product from the pipeline must not be closed until assurance is received that the pipeline is shut down, unless that tank is on fire.	☐
After confirmation has been received that pipelines have been shut down, close the pipeline header valves.	☐
Undertake basic site control: • Make an assessment of hazards. • Isolate the area. • Keep people away from the scene and outside the safety perimeter. • Establish safety zones and escape routes.	☐
Respond to the fire: • Establish a Command Post and lines of communication. • Maintain site control. • Establish Incident Command/Unified Command as necessary (**SECTION 4.4**) in the Spill Response Plan.	☐
Call in additional resources if on-scene personnel and equipment are inadequate to handle the emergency.	☐
Conduct a post-emergency evaluation and report.	☐

2.7 FIRE AND/OR EXPLOSION, CONTINUED

Your first consideration is always the safety of people in the immediate area, including your own.

The first responder's initial objective is site management.

FIRE AND/OR EXPLOSION CHECKLIST, CONTINUED	
TASK	
At an unmanned facility	
Handle the call.	☐
Notify the local police and fire departments.	☐
Notify Qualified Individual and Operations Control.	☐
Go to the incident scene to evaluate the situation; approach cautiously from upwind; do not rush in.	☐
Undertake basic site control: • Make an assessment of hazards. • Isolate the area. • Keep people away from the scene and outside the safety perimeter. • Establish safety zones and escape routes.	☐
If roads or railroads are in the affected area, assist the sheriff or local emergency officials with halting traffic.	☐
Update the next level manager.	☐
If the fire/explosion is a result of a pipe rupture, isolate the product release by closing valves.	☐
Respond to the fire: • Establish a Command Post and lines of communication. • Maintain site control. • Establish Incident Command/Unified Command as necessary, refer to **SECTION 4.4** in the Spill Response Plan.	☐
Call in additional resources if on-scene personnel and equipment are inadequate to handle the emergency.	☐
Conduct a post-emergency evaluation and report.	☐
Site-Specific Actions:	
	☐

2.8 VAPOR CLOUD

VAPOR CLOUD CHECKLIST	
TASK	
The person who discovers the vapor cloud will notify the facility management on	☐

duty and vacate the area.	
Remember: the only proper action in the presence of a vapor cloud is to get away from it. Do not shut off electrical equipment.	☐
All personnel will report to the evacuation muster point for roll call and further instructions.	☐
After all personnel have been accounted for, the Facility Management, the Facility Supervisor or a Facility Operator will initiate the following actions as deemed necessary: • Shut down pipeline. • Evacuation of adjacent property. • Only the fire department will be permitted to enter the Facility.	☐
Contact the appropriate agencies and potentially affected neighbors (refer to **FIGURE 3-5**).	☐

3.0 NOTIFICATIONS

FIGURE 3-1 - FIRST REPORT OF INCIDENT

Original to File; Copies To: Terminal Mgr or Ops Mgr & LP HSE Group

I. Location: _____ Time: _____ Date: _____

II. INCIDENT TYPE:

A. Safety			**B. Environmental**
☐ Non-injury	☐ Property/Equipment Damage		☐ Spill
☐ Fire	☐ Other ____		☐ Air Upset
☐ Injury	☐ First Aid	☐ Off-site Treatment	☐ Discharge Event
☐ Near Miss	☐ Employee	☐ Contractor	☐ Other

For Safety and Environmental Departments Use Only

☐ Recordable Injury ☐ Chemical Exposure ☐ Recordable Illness ☐ Reportable to Agency
☐ PSM/RMP ☐ Other

Signature _____ **Date** _____

III. INJURED EMPLOYEE / CONTRACTOR

Name: _____ Social Security: _____
Occupation: _____ Department / Company: _____
Nature of work related injury:
_____
_____
Supervisor's Name:

_____

IV. DESCRIPTION OF INCIDENT: (Use additional sheet(s) if necessary)

Date: _____ Time: _____ Location: _____

_____

_____

_____

_____

V. IMMEDIATE ACTION(s) TAKEN : (Use additional sheet(s) if necessary)

_____

_____

_____

VI. Incident Investigation Required ☐ Yes ☐ No

VII. Name of person preparing this report: _____

(Please print)

Signature: _____ Date: _____ Time: _____

Supervisor: _____ Date: _____

FIGURE 3-2 - LEAK ACCIDENT REPORT FORM

PL SYSTEM: _____

PL SEGMENT: _____

PRODUCTS ☐ CRUDE ☐

DISTRIBUTION:

Original - PIPELINE SAFETY	☐		
NOTE - Copy to the following as needed:			
MGR -	☐	SUP -	☐
ENG - C. Jewell	☐	ROW - D. HICKEY	☐
ENV -	☐		☐

REPORT INFORMATION:

RECORDS RETENTION - Permanent
REPORT FREQUENCY - As Required
DUE DATES - Within 5 Days 1 day

PART A - TIME & LOCATION OF LEAK OR ACCIDENT

1. DATE (Month, Day, Year)	2. HOUR ☐ AM ☐ PM	3. LOCATION (State, County, City)

4. PHYSICAL LOCATION (Direction to site, reference highways and towns)

_____

SECTION _____ BLOCK or TOWNSHIP _____ SURVEY or RANGE _____

PART B - ORIGIN OF LIQUID OR VAPOR RELEASE

1. PART OF CARRIER'S SYSTEM INVOLVED: LINE PIPE ☐ PUMPING STATION ☐ TANK FARM ☐ OTHER (Specify) ☐

2. ITEM INVOLVED: LINE PIPE ☐ GIRTH WELD ☐ LONGITUDINAL WELD ☐ PUMP ☐ OTHER (Specify) ☐ TANK ☐ WELDED FITTING ☐ BOLTED FITTING ☐ VALVE ☐ OTHER (Specify) ☐

PART C - CAUSE OF LEAK ACCIDENT

CORROSION ☐ FAILED WELD ☐ FAILED PIPE ☐ INCORRECT OPERATION BY OPERATING PERSONNEL ☐ OUTSIDE FORCE DAMAGE ☐ MALFUNCTION OF CONTROL OR RELIEF EQUIP. ☐ OTHER (Specify) ☐

PART D - INJURY OR DEATH

NUMBER OF PERSONS INJURED		NUMBER OF PERSONS KILLED	
CARRIER EMPLOYEES	NON-EMPLOYEES	CARRIER EMPLOYEES	NON-EMPLOYEES

PART E - ESTIMATED DAMAGES & COSTS

1. DAMAGE TO OPERATOR	2. LAND DAMAGE	3. CLEAN-UP COST	4. PRODUCT COST

5. ITEMS DAMAGED (Specify):

PART F - COMMODITY SPILLED OR RELEASED

1. NAME OF COMMODITY SPILLED OR RELEASED:	2. CLASSIFICATION: ☐ Crude Oil ☐ Gas Oil ☐ MVL ☐ Non-MVL	3. TOTAL BBLS LOSS (_) RECOVERED BBLS NET LOSS BBLS	4. WAS THERE A FIRE? YES ☐ NO ☐	5. WAS THERE AN EXPLOSION? YES ☐ NO ☐

PART G - OCCURRED IN LINE PIPE (Answer sections G, H, or I ONLY if it specifically applies to the leak or accident)

1. NOMINAL DIAMETER in.	2. WALL THICKNESS in.	3. SPECIFICATION & GRADE:	4. YEAR OF INSTALLATION Before 1970 (Specify Yr.): ☐ After 1970 (Specify Yr.) ☐	5. TYPE OF JOINT: Weld ☐ Flanged ☐ Threaded ☐ Coupled ☐ Other ☐ _____

6. CONFIGURATION AT POINT OF ACCIDENT: Straight ☐ Sag ☐ Overbend ☐ Sidebend ☐	7. PIPE WAS: Coated ☐ Not Coated ☐	8. PIPE WAS: Above Ground ☐ Below Ground ☐

FIGURE 3-2 - LEAK ACCIDENT REPORT FORM, CONTINUED

PART G - OCCURRED IN LINE PIPE (Answer sections G, H, or I ONLY if it specifically applies to the leak or accident), Continued

9. COVER (if below ground) in.	10. MAXIMUM OPERATING PRESSURE: psig	11. PRESSURE AT TIME & LOCATION OF ACCIDENT psig	12. SYSTEM PRESSURE TEST YES ☐ NO ☐

13. TEST MEDIUM USED; (If item 12, is Yes) Water ☐ Petroleum ☐ Air ☐	14. DURATION OF TEST hrs.	15. MAXIMUM TEST PRESSURE psig	16. DATE OF LATEST TEST

PART H - CAUSED BY CORROSION

1. LOCATION OF CORROSION EXTERNAL ☐ INTERNAL ☐	2. FACILITY COATED: YES ☐ NO ☐	3. FACILITY UNDER CATHODIC PROTECTION? YES ☐ NO ☐	4. TYPE OF CORROSION: GALVANIC ☐ OTHER ☐

PART I - CAUSED BY OUTSIDE FORCES

1. ☐ DAMAGE BY OPERATOR ☐ DAMAGE BY OPERATOR'S CONTRACTOR ☐ DAMAGE BY OTHERS (Name) _____
☐ DAMAGE BY NATURAL FORCES ☐ Washout ☐ Flood ☐ Subsidence ☐ Landslide ☐ Frostheave
☐ EARTHQUAKE ☐ OTHER (Specify)_____

2. DID EXCAVATOR CALL? YES ☐ NO ☐	3. WAS PIPELINE TEMPORARILY MARKED FOR EXCAVATOR? YES ☐ NO ☐	4. DISTANCE TO NEAREST LINE MARKER: feet

1. DETAILS OF INCIDENT: (Complete description of Cause, Response, Repairs, Affected Area & Land Damages.)
Use back for any additional information

PERSON COMPLETING THIS REPORT (Name):	DATE:

NRC # = 800-424-8802

INITIAL NOTIFICATION OF NRC MUST NOT BE DELAYED PENDING COLLECTION OF ALL INFORMATION.

FIGURE 3-3 - RELEASE NOTIFICATION DATA SHEET

(Other versions of this form may be used)

Incident Date:		Incident Time:	
		Reporter's Company:	

Reporters Name:		Reporter's Position:	
Reporters Address:		City / State:	
Reporters Phone:		Zip:	
Name of Person who notified the reporter of the incident:			

It is not necessary to wait for all information before calling NRC. National Response Center 1-800-424-8802

Were Materials Discharged (please circle one)	Yes	No
Calling for Responsible Party (please circle one)	Yes	No

Incident Description

Facility Name:		Facility Address or driving directions:		
Responsible Party: (Name of company)		Owner's Address:		2330 Loop 1604 West San Antonio, Texas 78248
Facility Contact Name & Title:		Facility Contact Phone No's	Office	
			Cell	
			Other	

Location of Spill:	
Material Released:	
Source or Cause of Discharge:	

Total Quantity Released:		Was surface water impacted by the spill? (yes or no)	
Total Quantity Recovered:		Total quantity into the water:	
Net Loss:		Tank Number (above/below) involved or pipe diameter:	
Container Type (AST/UST):		Tank Capacity (gallons):	

Nearest City:		County:		State:	
Weather conditions at time of incident (wind, rain, snow, temperature, etc.):					
Was there a fire or explosion involved?					

Number of Injuries:		Extent of Injuries, if known:	
Number of Deaths:		Numbers Evacuated (if any):	
Was there any damage:	Yes / No / Unknown (please circle one)		
	Estimate Dollars of Damage		
Additional			

Information:	

Response Actions	
Actions taken to correct, control, or mitigate the incident:	

Notifications

Group or Agency	Persons Notified	Date & Time Notified	Notify By:	Incident No.
NRC				
State Agency				
LEPC - County				
Other:				
Other:				
Other:				
HSE Group				

Phone Numbers

	NRC	(800) 424-8802		NMED	(505) 827-9329		RRC	(512) 463-6788
	TERC	(800) 832-8224		ODEQ	(800) 522-0206		NJDEP	(877) 927-6337
	CDPHE	(877) 518-5608		OCC	(918) 367-3396			
	KSDHE	(785) 296-6370 (day)		TGLO	(800) 832-8224		LEPC	
		(785) 296-0614 (night)		OGCC	(303) 894-2100			

FIGURE 3-4 - INTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS

*24-Hour Number

FACILITY RESPONSE TEAM		
NAME/TITLE	**PHONE NUMBER**	**RESPONSE TIME (hours)**
Kenneth Seals Terminal Manager **Qualified Individual**	(757) 427-1066 (Office) (b) (6) (757) 717-0918 *(Mobile)	.50
Clifford Bell Terminal Specialist **Qualified Individual**	(757) 427-1066 (Office) (b) (6)	.50
Chaz Lehman	301-599-5951 (Office)	

Area Terminal Manager **Qualified Individual**	908-487-7492 *(Mobile)	3.5

Refer to **FIGURE A.2-3** in the Spill Response Plan for personnel training records

FIGURE 3-4 - INTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS, CONTINUED

*24-Hour Number

EMERGENCY RESPONSE PERSONNEL AND BUSINESS UNIT NOTIFICATIONS						
NAME/TITLE	**PHONE NUMBER**	**RESPONSE TIME (hours)**	**ICS POSITION**	**RESPONSE TRAINING TYPE[1]**		
				1	**2**	**3**
Chaz Lehman Area Terminal Manager **Qualified Individual**	301-599-5951 (Office) 908-487-7492 *(Mobile)	3.5	Incident Commander	x	x	x
Steve Doyle Senior Manager Environmental & Regulatory Affairs **Qualified Individual**	(856) 579-5063 (Office) (b) (6) (856) 332-2424 *(Mobile)	6	Liaison Officer	x		x
Claire Riggs Regional Public Affairs Manager	856-579-5098 (Office) (b) (6) 609-504-3607 *(Mobile)	6	Corporate Communications			x
Dan Villarreal Corporate Security Manager	(210) 918-2253 (Office) (b) (6) (210) 487-9953 *(Mobile)	24	Corporate Security	x		
Tom Blanchard NuStar Port Captain	(856) 224-7401 (Office) (856) 397-0569 *(Mobile)					
Steve Hays VP Planning & Economics	210-918-3591 (Office) 210-241-6893 *(Mobile)					

EMERGENCY RESPONSE TRAINING TYPE	
TYPE	**DESCRIPTION**
1	29 CFR 1910.120 HAZWOPER
2	OPA (Training Reference for Oil Spill Response) All Facility Personnel,

	SMT, QI Components
3	Qualified Individual/Incident Command Training

Note: Refer to **APPENDIX A** in the Spill Response Plan for training dates.

FIGURE 3-4 - INTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS, CONTINUED

*24-Hour Number

EMERGENCY RESPONSE CONTRACTORS						
NAME/TITLE	**PHONE NUMBER**	**RESPONSE TIME (hours)**	**RESPONSIBILITY DURING RESPONSE ACTION**	**RESPONSE TRAINING TYPE[1]**		
				1	**2**	**3**
Moran Environmental Recovery	(757)216-8836*	1		x	x	x
Clean Harbors Environmental Services	1-800-645-8265 757-543-9240 ext. 24	1		x	x	x

EMERGENCY RESPONSE TRAINING TYPE	
TYPE	**DESCRIPTION**
1	29 CFR 1910.120 HAZWOPER
2	OPA (Training Reference for Oil Spill Response) All Facility Personnel, SMT, QI Components
3	Qualified Individual/Incident Command Training

Note: Refer to **APPENDIX A** in the Spill Response Plan for training dates.

FIGURE 3-5 - EXTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS

*24-Hour Number

AFFILIATION	PHONE NUMBER	TIME CONTACTED
Initial		
National Response Center	(800) 424-8802* (202) 267-2675* (202) 267-1322 Fax	
Occupational Safety and Health Administration (OSHA), Washington, DC - IMMEDIATE NOTIFICATION IS REQUIRED - For A FATALITY from a work-related injury, or	1-800-321-OSHA (6742) - Emergency	

HOSPITALIZATION of three (3) or more employees as a result of a work related incident.		
Recommended		
Federal Agencies		
EPA Region III	(215) 814-9016	
Oceana Naval Air Station (Fuel Farm)	(757) 433-5143	
U.S. Coast Guard (Sector Hampton Roads) Portsmouth, VA	(757) 484-8192 (757) 668-5555*	
State Agencies		
U.S. Fish & Wildlife Virginia State Office	804-693-6694 ext. 151	
Virginia Beach Fire Marshall - Virginia Beach,VA	(757) 385-4228	
Virginia Beach SPCA Wildlife Program	757-263-4762	
Virginia Department of Emergency Services - Public Affairs Office	(800) 468-8892 (804) 674-2400	
Virginia Department of Environmental Quality	(757) 518-2077*	
Virginia State Corporation Commission	(804) 351-4400*	
Virginia State Police - Norfolk, VA	(757) 424-6820*	
Local Agencies		
City of Virginia Beach Police Department	(757) 385-5000	
North Landing Bridge	(757) 482-3081	
Virginia Beach LEPC	(757) 385-4228	

FIGURE 3-5 - EXTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS

*24-Hour Number

AFFILIATION	PHONE NUMBER	TIME CONTACTED
Recommended, Continued		
Fire Departments		
Virginia Beach Fire Department (Station #3)	(757) 427-4228	

Hospitals		
Virginia Beach General Hospital	(757) 395-8000	
Law Enforcement		
Virginia Beach Police Marine Patrol	(757) 385-5000	
Virginia Beach Sheriff Department	(757) 385-4555	
USCG Classified OSRO's		
Clean Harbors Environmental Services Chesapeake, Virginia	1-800-645-8265 757-543-9240 ext. 24	
Moran Environmental Recovery Norfolk, VA	(757)216-8836*	
Radio Stations		
FM97	(757) 490-9797	
WCMS	(757) 424-3333	
Television Stations		
WKRT (Channel 3)	(757) 446-1000	
WVEC (Channel 13)	(757) 625-1313	
Waste Management		
C&M Industries, Inc.	(757) 543-8775	
Onyx Engineering Inc. Attn: Nathan P.	(716) 754-8231 (716) 754-0211 fax (804) 223-6980 Nathan (804) 233-6974 Nathan fax	
Weather		
National Weather Service	(757) 899-4200	

4.0 RESOURCES

FIGURE 4-1 - EMERGENCY MANAGEMENT TEAM (EMT) ORGANIZATION CHART*

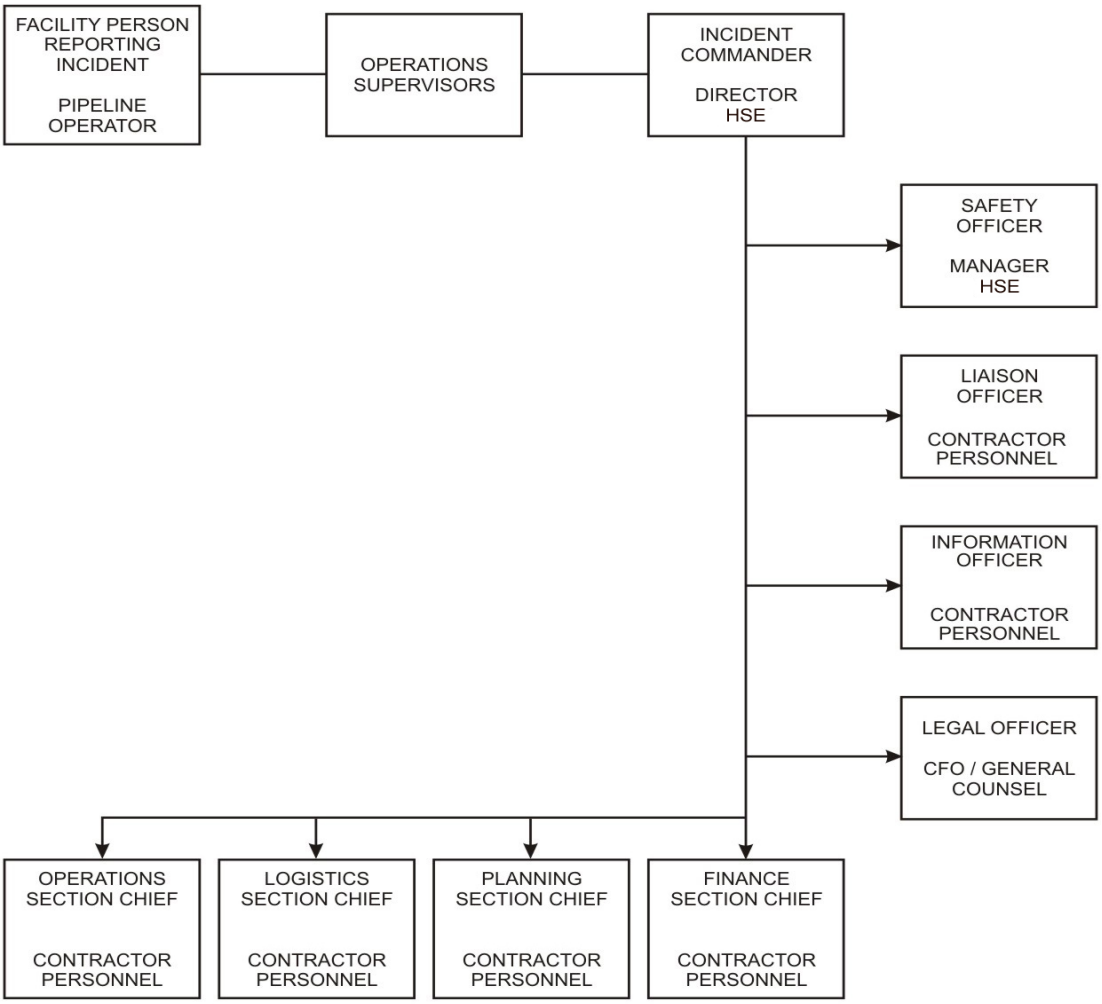


FIGURE 4-2 - FACILITY EQUIPMENT*

BOOM					
TYPE/MODEL/YEAR	QUANTITY	SIZE	CONTAINMENT AREA (sq ft)	STORAGE LOCATION	
Bantam Floating boom #BT-P10/225T w/ 8" Direct Skirt	600 ft.			Spill Response Storage Building	
Harbor Floating Boom w/ 8" Direct Skirt	400 ft.			Spill Response Storage Building	
SORBENTS					
TYPE/YEAR	QUANTITY	ABSORPTION CAPACITY (gal)	STORAGE LOCATION	OPERATIONAL STATUS	
Dica-Sorb - Sorbent Pads	2 Bales		Spill Response Storage Building	Operational	

HAND TOOLS					
TYPE/YEAR	QUANTITY	STORAGE LOCATION	OPERATIONAL STATUS		
Long Handled Shovels	2	Spill Response Storage Building	Operational		
COMMUNICATIONS EQUIPMENT					
TYPE/YEAR	QUANTITY	STORAGE LOCATION/NUMBER	OPERATIONAL STATUS		
Motorola Radios-Model HT1000	4	Manager's Office	Operational		
FIRE FIGHTING AND PERSONNEL PROTECTIVE EQUIPMENT					
TYPE/YEAR	QUANTITY	STORAGE LOCATION	OPERATIONAL STATUS		
20# CO2 Extinguisher	1	Dock House	Operational		
20# ABC Extinguisher	1	Office Building	Operational		
20# Dry Chem. Extinguisher	1	Office Building	Operational		
20# Dry Chem. Extinguisher	1	Tool Shed	Operational		
100# Dry Chem. Extinguisher	1	Dock	Operational		
OTHER					
TYPE/YEAR	QUANTITY	STORAGE LOCATION	OPERATIONAL STATUS		
14-Foot Polaris Craft "John Boat" w/ 25 HP Motor	1	Spill Response Storage Building	Operational		

***Note:** Response equipment is tested and deployed as described in **APPENDIX A** of the Spill Response Plan.

FIGURE 4-3 - REGIONAL COMPANY AND RESPONSE CONTRACTOR'S EQUIPMENT LIST / RESPONSE TIME

*USCG Classified OSRO for facility

COMPANY/CONTRACTOR	EQUIPMENT	RESPONSE TIME
*Moran Environmental Recovery Norfolk, VA	Full Response Capability	1 hours
*Clean Harbors Environmental Services Chesapeake, Virginia	Full Response Capability	1 hours

Note: Response equipment is tested and deployed as described in **APPENDIX A** of the Spill Response Plan.

FIGURE 4-4 - EPA REQUIRED RESPONSE EQUIPMENT TESTING AND DEPLOYMENT DRILL LOG

(Other versions of this form may be used)

Item:	Date of Last Update:
ACTIVITY	**INFORMATION**
Last inspection or response equipment test date	
Inspection frequency	
Last deployment drill date	
Deployment frequency	
OSRO Certification (if applicable)	

Item:	Date of Last Update:
ACTIVITY	**INFORMATION**
Last inspection or response equipment test date	
Inspection frequency	
Last deployment drill date	
Deployment frequency	
OSRO Certification (if applicable)	

Item:	Date of Last Update:
ACTIVITY	**INFORMATION**
Last inspection or response equipment test date	
Inspection frequency	
Last deployment drill date	
Deployment frequency	
OSRO Certification (if applicable)	

Item:	Date of Last Update:
ACTIVITY	**INFORMATION**
Last inspection or response equipment test date	

Inspection frequency	
Last deployment drill date	
Deployment frequency	
OSRO Certification (if applicable)	

5.0 PLOT PLANS / TANK TABLE

FIGURE 5-1 - DRAINAGE DIAGRAM

(Click here for Drainage Diagram)

FIGURE 5-2 - EVACUATION DIAGRAM

(Click here for Evacuation Diagram)

FIGURE 5-3 - TANK TABLE

Container/ Source	Major Type of Failure	Total Capacity (gal)	Secondary Containment Volume Type (gal)	Tank Type	Year Constructed/ Installed	Quantity Stored (gal)	Direction of Flow/Rate (See Plot Plan)	Product Stored
ABOVEGROUND CONTAINERS - (b) (7)(F)								
2001	Overfill / Rupture / Leakage	(b) (7)(F)		Cone	1963	(b) (7)(F)	South / Instantaneous	JP-5
2002	Overfill / Rupture / Leakage			Cone	1963		South / Instantaneous	JP-5
PRT 1	Overfill / Rupture / Leakage			Horizontal	1982		South / Instantaneous	JP-5
Product Recovery Tank	Overfill / Rupture /			Horizontal	1992		South / Instantaneous	JP-5

	Leakage							
MISCELLANEOUS - Total: Varies								
No Truck or Rail Rack	-			-			-	-
Facility Total: (b) (7)(F)								

Containment Type: 1=Earthen Berm and Floor, 2=Concrete Berm and Floor, 3=Earthen Berm and Concrete Floor, 4=Metal Berm and Floor, 5=Portable Containment or Inside Building, 6=Double Walled, 7=Coated Asphalt Materials, * Not in Containment Area, ** Curbing and containment system

Tank / Roof Type: C=Cylinder, CR=Cone Roof, DW=Double Wall, EFR=External Floating Roof, FG=Fiberglass, GD=Geodesic Dome, H=Horizontal, HSM=Horizontal Skid Mounted, IF=Internal Floater, OOS=Out of Service, OT=Open Top, R=Riveted, S=Steel, SM=Skid Mounted, V=Vertical, W=Welded

FIGURE 5-4 SITE DIAGRAM

(Click here for Site Diagram)

6.0 ENDANGERED AND THREATENED SPECIES BY STATE

ENDANGERED AND THREATENED SPECIES BY STATE

COMMON NAME	SCIENTIFIC NAME	HABITAT	STATUS	STATE
Bat, gray	*Myotis grisescens*	Caves and mines; rivers adjacent to forests	E	Virginia
Bat, Indiana	*Myotis sodalis*	Caves, mines, upland forests	E	Virginia
Bat, Virginia big-eared	*Corynorhinus (=Plecotus) townsendii virginianus*	Caves dominated by oak-hickory or beech-maple-hemlock forest	E	Virginia
Bean, Cumberland (pearlymussel) Entire Range; Except where listed as Experimental Populations	*Villosa trabalis*	Sand, gravel, and cobble substrates in moderate to swift currents	E	Virginia
Bean, purple	*Villosa perpurpurea*	Creeks to medium-sized rivers and occasionally headwaters	E	Virginia
Bittercress, small-anthered	*Cardamine*	Seepages, wet rock crevices,	E	Virginia

	micranthera	streambanks, and sandbars		
Blossom, green (pearlymussel)	*Epioblasma torulosa gubernaculum*	Sand and gravel substrates with moderate to fast current	E	Virginia
Bulrush, Northeastern	*Scirpus ancistrochaetus*	Open, tall herb-dominated wetlands	E	Virginia
Butterfly, Mitchell's satyr	*Neonympha mitchellii mitchellii*	Sedge swamps, marshes	E	Virginia
Chaffseed, American	*Schwalbea americana*	Acidic, sandy or peaty soils in open pine flatwoods	E	Virginia
Combshell, Cumberlandian Entire Range; Except where listed as Experimental Populations	*Epioblasma brevidens*	Large creeks to large rivers	E	Virginia
Coneflower, smooth	*Echinacea laevigata*	Openings in woods, such as cedar barrens and clear cuts, and on dry limestone bluffs	E	Virginia
Darter, duskytail Entire	*Etheostoma percnurum*	Gravel and rubble pools and riffles of large creeks and small to medium rivers	E	Virginia
Fanshell	*Cyprogenia stegaria*	Medium to large streams	E	Virginia
Harperella	*Ptilimnium nodosum*	Rocky or gravelly shoals of clear, swift-flowing streams	E	Virginia
Isopod, Lee County cave	*Lirceus usdagalun*	Submerged, small rocks in subterranean streams; sometimes among gravels	E	Virginia
Lichen, rock gnome	*Gymnoderma lineare*	Shady rock or shady moss-covered rock	E	Virginia
Logperch, Roanoke	*Percina rex*	Deep, fast-flowing chutes and pools	E	Virginia

6.0 ENDANGERED AND THREATENED SPECIES BY STATE, CONTINUED

ENDANGERED AND THREATENED SPECIES BY STATE

COMMON NAME	SCIENTIFIC	HABITAT	STATUS	STATE

	NAME			
Mallow, Peter's Mountain	*Iliamna corei*	Shallow soil of the Clinch sandstone outcrops	E	Virginia
Monkeyface, Appalachian (pearlymussel)	*Quadrula sparsa*	Fast-flowing, headwaters sections of rivers in shallow riffles and runs	E	Virginia
Monkeyface, Cumberland (pearlymussel) Entire Range; Except where listed as Experimental Populations	*Quadrula intermedia*	Shallow riffle and shoal areas of headwater streams and bigger rivers	E	Virginia
Mucket, pink (pearlymussel)	*Lampsilis abrupta*	Sand and gravel substrates	E	Virginia
Mussel, oyster Entire Range; Except where listed as Experimental Populations	*Epioblasma capsaeformis*	Large creeks and rivers	E	Virginia
Pearlymussel, birdwing Entire Range; Except where listed as Experimental Populations	*Conradilla caelata*	Riffle areas with sand and gravel substrates in moderate to fast currents	E	Virginia
Pearlymussel, cracking Entire Range; Except where listed as Experimental Populations	*Hemistena lata*	Sand, gravel, and cobble substrates in swift currents or mud	E	Virginia
Pearlymussel, dromedary Entire Range; Except where listed as Experimental Populations	*Dromus dromas*	Riffle, at shoals with sand and gravel and moderate current velocities	E	Virginia
Pearlymussel, littlewing	*Pegias fabula*	Riffle, in and below on sand and gravel	E	Virginia
Pigtoe, finerayed Entire Range; Except where listed as Experimental Populations	*Fusconaia cuneolus*	Clear, high gradient streams in firm cobble and gravel substrates	E	Virginia
Pigtoe, rough	*Pleurobema plenum*	Medium to large rivers in sand, gravel, and cobble substrates in shoals	E	Virginia
Pigtoe, shiny Entire Range; Except where listed as Experimental Populations	*Fusconaia cor*	Shoals and riffles in clear streams	E	Virginia
Rabbitsfoot, rough	*Quadrula cylindrica strigillata*	Medium sized to large rivers in moderate to swift current	E	Virginia

Riffleshell, tan	*Epioblasma florentina walkeri (=E. walkeri)*	Sand and gravel substrates usually found in headwaters, riffles and shoals	E	Virginia
Rock-cress, shale barren	*Arabis serotina*	Shale barrens with hard, small shale soil fragments	E	Virginia
Salamander, Shenandoah	*Plethodon shenandoah*	Steep, northerly facing talus slopes in forested situations of Shenadoah National Park	E	Virginia
Sea turtle, hawksbill	*Eretmochelys imbricata*	Clear offshore waters off the mainland and on island shelves	E	Virginia
Sea turtle, Kemp's ridley	*Lepidochelys kempii*	Shallow areas with sandy and muddy bottoms	E	Virginia

6.0 ENDANGERED AND THREATENED SPECIES BY STATE, CONTINUED

ENDANGERED AND THREATENED SPECIES BY STATE

COMMON NAME	SCIENTIFIC NAME	HABITAT	STATUS	STATE
Sea turtle, leatherback	*Dermochelys coriacea*	Warm sands of tropical beaches	E	Virginia
Snail, Virginia fringed mountain	*Polygyriscus virginianus*	Fragments of weathered dolomite in loose clay-like soil	E	Virginia
Spider, spruce-fir moss	*Microhexura montivaga*	Forest - conifer	E	Virginia
Spinymussel, James	*Pleurobema collina*	Waters with slow to moderate current and relatively hard water on sand and gravel substrates	E	Virginia
Squirrel, Carolina northern flying	*Glaucomys sabrinus coloratus*	Coniferous and mixed forests; hardwoods	E	Virginia
Squirrel, Delmarva Peninsula fox Entire, except Sussex Co., DE	*Sciurus niger cinereus*	Edges of mixed pine-hardwood forests	E	Virginia
Sturgeon, shortnose	*Acipenser brevirostrum*	Rivers, estuaries, and the sea	E	Virginia
Sumac, Michaux's	*Rhus*	Sandy or rocky open woods	E	Virginia

	michauxii			
Tern, roseate northeast U.S. nesting pop.	*Sterna dougallii dougallii*	Coastal islands and beaches	E	Virginia
Wedgemussel, dwarf	*Alasmidonta heterodon*	Slow moving, sandy rivers	E	Virginia
Whale, finback	*Balaenoptera physalus*	Offshore ocean waters	E	Virginia
Whale, humpback	*Megaptera novaeangliae*	Surface of the ocean	E	Virginia
Whale, right	*Balaena glacialis (incl. australis)*	Surface of the ocean	E	Virginia
Woodpecker, red-cockaded	*Picoides borealis*	Open pine forests with large, widely-spaced older trees	E	Virginia
Amaranth, seabeach	*Amaranthus pumilus*	Dunes, overwash fans and other areas of bare sand	T	Virginia
Birch, Virginia round-leaf	*Betula uber*	Creek in Smyth County in southwest Virginia	T	Virginia
Chub, slender	*Erimystax cahni*	Medium to fairly large, usually clear, warm rivers of moderate gradient	T	Virginia
Chub, spotfin Entire	*Erimonax monacha*	Cool and warm, typically clear, large creeks or medium-sized rivers	T	Virginia

6.0 ENDANGERED AND THREATENED SPECIES BY STATE, CONTINUED

ENDANGERED AND THREATENED SPECIES BY STATE

COMMON NAME	SCIENTIFIC NAME	HABITAT	STATUS	STATE
Dace, blackside	*Phoxinus cumberlandensis*	Small upland streams with moderate flows	T	Virginia
Isopod, Madison Cave	*Antrolana lira*	Deep, subterranean lakes within the Cave Hill aquifer	T	Virginia
Joint-vetch, sensitive	*Aeschynomene virginica*	Freshwater to slightly brackish tidal marshes	T	Virginia
Madtom, yellowfin except where EXPN	*Noturus flavipinnis*	Medium-sized and large creeks and small rivers that are unpolluted, warm or warm to cool	T	Virginia
Orchid, eastern prairie fringed	*Platanthera leucophaea*	Mesic to wet praries	T	Virginia
Pink, swamp	*Helonias bullata*	Acidic wetlands	T	Virginia

Plover, piping except Great Lakes watershed	*Charadrius melodus*	Sandy beaches, islands	T	Virginia
Pogonia, small whorled	*Isotria medeoloides*	Cidic soils, in dry to mesic second-growth	T	Virginia
Sea turtle, green except where endangered	*Chelonia mydas*	Coasts, open sea	T	Virginia
Sea turtle, loggerhead	*Caretta caretta*	Estuaries, coastal streams and salt marshes	T	Virginia
Sneezeweed, Virginia	*Helenium virginicum*	Seasonally inundated ponds	T	Virginia
Spiraea, Virginia	*Spiraea virginiana*	Flood-scoured banks of high-gradient mountain streams, point bars, and natural levees	T	Virginia
Tiger beetle, northeastern beach	*Cicindela dorsalis dorsalis*	Coastal beaches	T	Virginia

7.0 VULNERABILITY ANALYSIS (DETAILED)

VULNERABILITY ANALYSIS (DETAILED)
Water Intakes:
(b) (7)(F) [redacted]
Schools:
There are no schools located in close proximity that a spill from this Facility would impact.
Medical Facilities:
There are no medical facilities located in close proximity that a spill from this Facility would impact.

7.0 VULNERABILITY ANALYSIS (DETAILED), CONTINUED

VULNERABILITY ANALYSIS (DETAILED)
Residential Areas:
There are no residential areas located in close proximity that a spill from this Facility would impact.
Businesses:

There are no businesses within the response zone of the Facility.

Wetlands or Other Sensitive Environments:

In general, the shoreline types are categorized mainly as marshes for the shoreline sections along the North Landing River. Marshes are highly sensitive to oil impacts, and they provide a nursery ground for numerous fish species, along with crabs and bird life. Other sensitive environments include West Neck Creek, Northwest River, Tull Bay and Back Bay. These areas contain sensitive shorelines, consisting of marshes and are also habitats for various shorebirds, gulls and tern and wading birds.

7.0 VULNERABILITY ANALYSIS (DETAILED), CONTINUED

VULNERABILITY ANALYSIS (DETAILED)
Fish and Wildlife:
The wildlife population is limited.

7.0 VULNERABILITY ANALYSIS (DETAILED), CONTINUED

VULNERABILITY ANALYSIS (DETAILED)
Lakes and Streams:
A spill at the dock would flow into the North Landing River. The river is tidally influenced in this area. North of the Terminal: Albemarle & Chesapeak Canal, Stump Lake South of the Terminal: West Neck Creek, Blackwater Creek, Northwest River, Tull Bay, Back Bay
Endangered Flora and Fauna:
Flora and fauna are always present and are sensitive to the effects of a pollution incident. All environmental areas deserve protection from pollution, but they must be prioritized during a response so as to protect the most sensitive and susceptible areas to pollution. See SECTION 6.5 for a list of endangered and threatened species in the state.

7.0 VULNERABILITY ANALYSIS (DETAILED), CONTINUED

VULNERABILITY ANALYSIS (DETAILED)
Recreational Areas:
South of the Terminal: West Neck Marina (2 miles) and North Landing River.

North of the Terminal: Mercer Boat Landing (on North Landing), Albemarle & Chesapeake Canal (at the City of Chesapeake, VA), and Princess Anne Park (pipeline segment located on the intersection of Dam Neck Road and Princess Anne Road)
Transportation Routes (Air, Water, Land):
Depending on the magnitude of the spill, waterway traffic could potentially be impacted on the North Landing River (ICW); a pipeline spill may impact North Landing Road and Princess Anne Road.
Utilities:
There are no utilities within one mile of the Facility.
Other Applicable Areas:
There are no other applicable areas of economic within one mile of the Facility.

8.0 TACTICAL OVERVIEW MAP

9.0 TACTICAL PLAN INDEX

SITE #	SITE NAME

10.0 TACTICAL PLANS

Click here for Tactical Plan

11.0 SENSITIVITY MAPS

Click here for ESI Index

11.0 SENSITIVITY MAPS

Click here for ESI Legend

11.0 SENSITIVITY MAPS

Click here for ESI Map Data

11.0 SENSITIVITY MAPS

Click here for Terminal USGS Quad

11.0 SENSITIVITY MAPS

Click here for ESI Map 1

11.0 SENSITIVITY MAPS

Click here for ESI Map 2

11.0 SENSITIVITY MAPS

Click here for ESI Map 3

11.0 SENSITIVITY MAPS

Click here for ESI Map 4

11.0 SENSITIVITY MAPS

Click here for PHMSA Sensitivity Maps

LINK FILES

Guidelines for Interpreting ESI Maps

To help users interpret the ESI maps and tabular data, we offer the following guidelines for use in addition to the map legend:

• Shoreline Habitats. The "shoreline," representing the boundary between land and water, is color-coded with the ESI classification. Most shoreline habitats are shown as a line, with no areal dimension. Where there is more than one shoreline type (e.g., a beach in front of a seawall), the colors for each habitat are shown, with the color for the landward habitat on the land side of the shoreline and the color for the seaward habitat on the water side. In areas where the intertidal zone is wide (e.g., wide tidal flats, wave-cut rocky platforms), the habitat from high to low water is filled with the ESI classification color. When data are available, the entire extent of wetlands are filled with colored patterns. The seaward edge of the wetland is color-coded with the ESI classification; the landward extent of the wetland is indicated by a dashed, colored line.

• Biological Resources. The distribution of biological resources is shown using many different conventions. The major convention is an icon associated with a point, line, or polygon that shows the species' areal distribution. The icon's reference number corresponds to a data table with details on species and life history. Biological resource data are organized into six major groups, each with a reference color: birds (green), mammals (brown), fish (blue), shellfish (orange), reptiles (red), and rare/endangered plants and special habitats (purple). These colors are used to fill hatched polygons and the icons. Each major group has subgroups with unique icons to visually indicate the type of organism or feature present. The icon or group of icons is usually located inside the polygon it represents; however, sometimes a line is connected between the icon and the polygon or point to make it easier to relate the two. Note that icons are used to indicate the types of resources present, but the actual data are the points and polygons. A red box around an icon indicates the presence of a species on the state or Federal list of threatened or endangered species.

The number listed below each icon refers to the first column of a data table for each map. The data tables, organized by group (birds, fish, etc.), include the following information: species name, status as threatened or endangered on state and Federal lists, concentration (specifically for each point or polygon), presence by month, and special life-history time periods. When a polygon contains multiple groups, the one number under the group of icons is listed under each group heading in the data tables. Where possible, the same number is used on multiple maps. For example, all bald eagle nests with the same seasonality could have the same number throughout the atlas, or the same assemblage of fish would have the same number wherever it occurred.

A data table has a separate listing for every unique combination of species, concentration, seasonality, life-history stage, and source. By looking at the monthly seasonality data in the table for each map, the species present at the time of concern can be easily identified. An 'X' or number is placed under each month in which any life stage of the species is present in the area represented by the point or polygon. Numbers are used typically for fish and shellfish where data on relative abundance are available. The final columns in the data tables include the months when reproductive activities occur or early life stages are present. Users should pay close attention to the data tables because they contain much of the information needed to identify the most sensitive resources at different times of the year.

Points, lines, and polygons on a map represent the distribution of the resources. Green points show bird nesting sites, including bald eagle nests and dense colonial nesters (e.g., heron rookeries and seabird nesting colonies). Animals and habitats are also represented as: 1) hatched polygons in the color for the animal group (e.g., green for birds); 2) black hatched polygons which contain multiple groups of resources (birds and fish in the same tidal channels); 3) solid lines (usually used for fish in small streams); or 4) in "common in ..." boxes. When showing the biological resource polygons would make the maps too difficult to read (usually when multiple polygons cover a large area), the polygons are not plotted and the presence of the resource is indicated by placing the icon in a box labeled "common in ..." The box contains an appropriate geographic reference. Different boxes can be used on the same map when, for example: "common in Winyah Bay" or "common in tidal creeks." The data for these resources are still fully present in the database but are not shown to make the maps more readable.

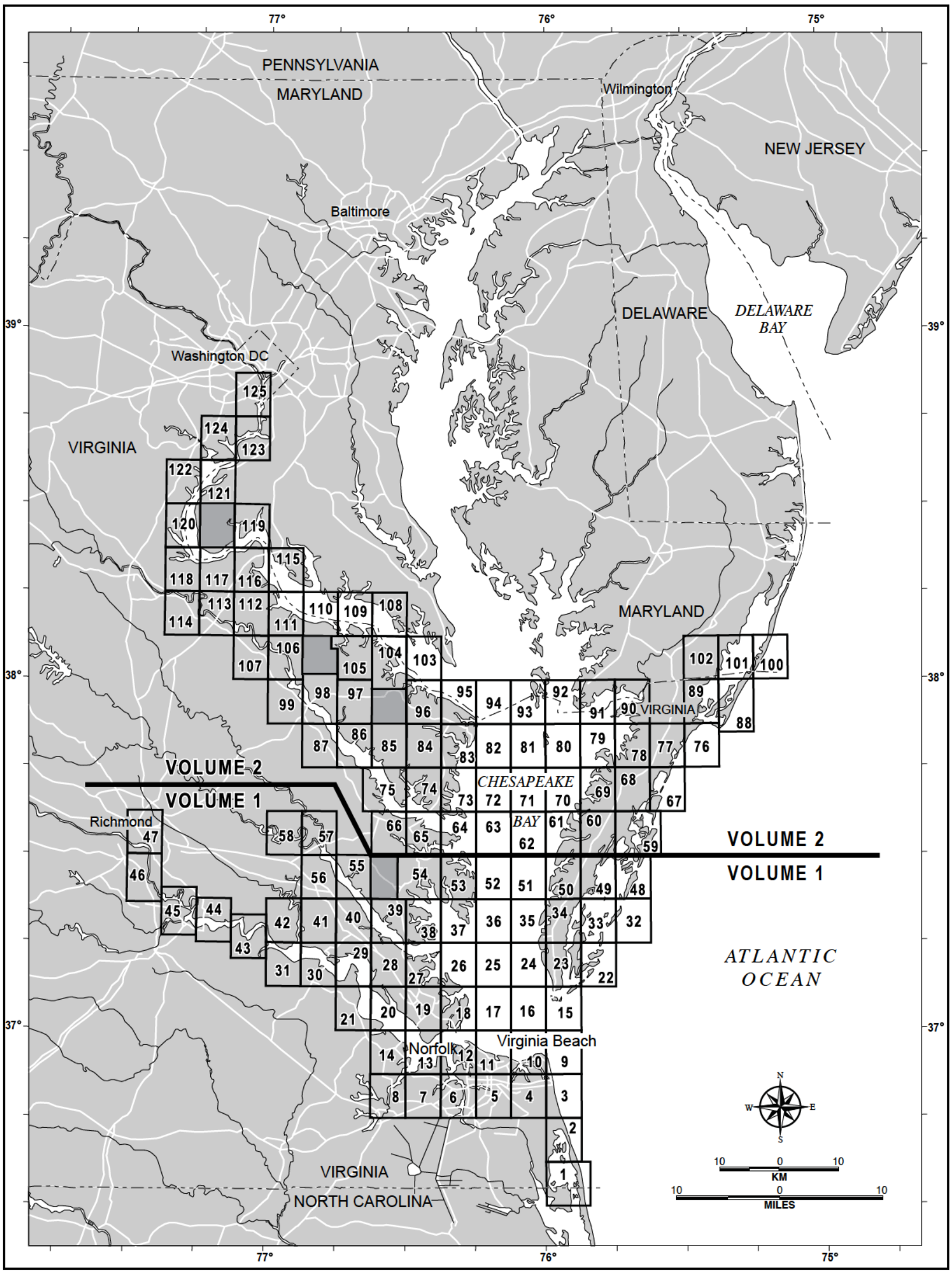
• Human-use Resources. Most of the human-use resources are point features indicated by a black-and-white icon. Managed lands, such as refuges and sanctuaries, have their boundaries shown as a dot-dash line with an icon and name placed inside. Where the feature is a known point location (e.g., a drinking water intake, boat ramp, marina), the exact location is shown as a small black dot and a line is drawn from it to the icon. Activities such as commercial and recreational fishing and areas such as recreational beaches are also indicated by an icon placed in the general area without any lines to points or polygons since the boundaries are not readily defined.

Some features, like historic and archaeological sites, are location-sensitive: the agency managing the resource believes the exact location should not be shown in order to protect the site. In these cases, the icon is placed in the general area of the resource, but the exact location is not shown.

Sensitivity of Coastal Environments and Wildlife to Spilled Oil

VIRGINIA

ATLAS



Supported by:

National Oceanic and Atmospheric Administration
National Ocean Service
Office of Response and Restoration
Hazardous Materials Response Division
Seattle, Washington

NOAA Chesapeake Bay Office
Gloucester Point, Virginia

APRIL 2005

Virginia: ESIMAP 1

BIOLOGICAL RESOURCES:

BIRD:

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Nesting	Migrating	Molting
1	Black-bellied plover			LOW			X	X	X	X	X	X	X	X			-	-	-
	Bonaparte's gull			LOW	X	X	X	X								X	-	-	-
	Brown pelican	C		LOW			X	X	X	X	X	X	X	X			-	-	-
	Caspian tern	C		LOW			X	X	X				X	X	X		-	-	-
	Common tern			LOW			X	X	X	X	X	X	X	X			-	-	-
	Forster's tern			MODERATE			X	X	X	X	X	X	X	X			-	-	-
	Great black-backed gull			LOW	X	X	X	X	X				X	X	X	X	-	-	-
	Herring gull			LOW	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Laughing gull			LOW			X	X	X	X	X	X	X	X			-	-	-
	Least sandpiper			LOW			X	X	X				X	X	X		-	-	-
	Least tern	C		LOW			X	X	X	X	X						-	-	-
	Lesser black-backed gull			LOW	X	X	X	X	X				X	X	X	X	-	-	-
	Ring-billed gull			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Royal tern			MODERATE			X	X	X	X	X	X	X	X			-	-	-
	Ruddy turnstone			LOW			X	X	X				X	X	X		-	-	-
	Sanderling			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Sandwich tern	C		LOW			X	X	X	X	X	X	X	X			-	-	-
	Semipalmated plover			LOW	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Semipalmated sandpiper			LOW				X	X				X				-	-	-
	Willet			LOW			X	X	X	X	X	X	X	X			-	-	-
2	American black duck			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-
	American wigeon			HIGH	X	X	X	X	X	X			X	X	X	X	MAY-JUN	-	-
	Canada goose			LOW	X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-
	Gadwall			HIGH	X	X	X	X	X				X	X	X	X	APR-MAY	-	-
	Green-winged teal			HIGH	X	X	X	X	X				X	X	X	X	-	-	-
	Tundra swan			MODERATE	X	X	X	X	X				X	X	X	X	-	-	-
3	American bittern			LOW	X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-
	American black duck			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-
	American coot			LOW	X	X	X	X	X				X	X	X	X	-	-	-
	American wigeon			LOW	X	X	X	X	X	X			X	X	X	X	MAY-JUN	-	-
	Blue-winged teal			MODERATE			X	X	X	X	X	X	X				MAY-JUN	-	-
	Bufflehead			LOW	X	X							X	X	X	X	-	-	-
	Canada goose			MODERATE	X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-
	Cattle egret			LOW						X	X	X					JUN-AUG	-	-
	Common merganser			LOW	X	X	X	X	X				X	X	X	X	-	-	-
	Common moorhen	C		LOW	X	X	X	X	X	X			X	X	X	X	MAY-JUN	-	-
	Gadwall			MODERATE	X	X	X	X	X				X	X	X	X	APR-MAY	-	-
	Glossy ibis	C		LOW			X	X	X	X	X	X	X	X			-	-	-
	Great blue heron			LOW	X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUL	-	-
	Great egret	C		MODERATE			X	X	X	X	X	X	X	X			-	-	-
	Greater yellowlegs			LOW				X	X				X				-	-	-
	Green-winged teal			HIGH	X	X	X	X	X				X	X	X	X	-	-	-
	Killdeer			LOW			X	X	X	X	X	X	X	X			-	-	-
	King rail			MODERATE	X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUN	-	-
	Least bittern			LOW			X	X	X	X	X	X					MAY-JUN	-	-
	Least sandpiper			LOW			X	X	X				X	X	X		-	-	-
	Lesser yellowlegs			MODERATE				X	X				X				-	-	-
	Mallard			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-
	Northern pintail			MODERATE	X	X							X	X	X	X	-	-	-
	Northern shoveler			LOW	X	X	X	X	X				X	X	X	X	-	-	-
	Pied-billed grebe			LOW	X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUN	-	-
	Ruddy duck			LOW	X	X	X	X	X				X	X	X	X	-	-	-
	Scaup			LOW	X	X	X	X	X				X	X	X	X	-	-	-
	Semipalmated plover			LOW	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Semipalmated sandpiper			MODERATE				X	X				X				-	-	-
	Short-billed dowitcher			LOW			X	X	X								-	-	-
	Snow goose			MODERATE	X	X	X	X	X				X	X	X	X	-	-	-
	Snowy egret			MODERATE	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Sora			LOW	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Spotted sandpiper			LOW			X	X	X				X	X	X		-	-	-
	Tricolored heron	C		LOW			X	X	X	X	X	X	X	X			-	-	-
	Tundra swan			MODERATE	X	X	X	X	X				X	X	X	X	-	-	-
	Virginia rail			LOW	X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUN	-	-
	Wood duck			MODERATE			X	X	X	X	X	X	X	X	X		APR-MAY	-	-
4	Osprey						X	X	X	X	X	X	X	X	X		MAR-AUG	-	-
5	Greater yellowlegs			LOW				X	X				X				-	-	-
	Lesser yellowlegs			MODERATE				X	X				X				-	-	-
	Semipalmated sandpiper			MODERATE				X	X				X				-	-	-
8	Brown pelican	C					X	X	X	X	X	X	X	X			-	-	-
	Common loon				X	X	X								X	X	-	-	-
	Northern gannet			HIGH	X	X	X								X	X	-	-	-
	Red-breasted merganser			VERY HIGH	X	X	X								X	X	-	-	-
	Red-necked grebe					X	X										-	-	-
	Red-throated loon				X	X	X								X	X	-	-	-
9	American black duck			ABUNDANT	X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-
	American wigeon			COMMON	X	X	X	X	X	X			X	X	X	X	MAY-JUN	-	-
	Gadwall			COMMON	X	X	X	X	X				X	X	X	X	APR-MAY	-	-
	Green-winged teal			COMMON	X	X	X	X	X				X	X	X	X	-	-	-
	Mallard			ABUNDANT	X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-
	Northern pintail			COMMON	X	X							X	X	X	X	-	-	-
	Snow goose			ABUNDANT	X	X	X	X	X				X	X	X	X	-	-	-
	Tundra swan			COMMON	X	X	X	X	X				X	X	X	X	-	-	-
10	Lesser scaup			MODERATE	X	X	X	X	X				X	X	X	X	-	-	-
	Snow goose				X	X	X	X	X				X	X	X	X	-	-	-
11	American black duck			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-
	American coot			LOW	X	X	X	X	X				X	X	X	X	-	-	-
	American wigeon			LOW	X	X	X	X	X	X			X	X	X	X	MAY-JUN	-	-
	Blue-winged teal			MODERATE			X	X	X	X	X	X	X				MAY-JUN	-	-
	Gadwall			MODERATE	X	X	X	X	X				X	X	X	X	APR-MAY	-	-
	Green-winged teal			HIGH	X	X	X	X	X				X	X	X	X	-	-	-
	Mallard			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-
	Northern pintail			MODERATE	X	X							X	X	X	X	-	-	-
	Northern shoveler			LOW	X	X	X	X	X				X	X	X	X	-	-	-
	Wood duck			MODERATE			X	X	X	X	X	X	X	X	X		APR-MAY	-	-
13	American wigeon			HIGH	X	X	X	X	X				X	X	X	X	-	-	-
	Gadwall			HIGH	X	X	X	X	X				X	X	X	X	-	-	-
14	Black scoter			HIGH	X	X	X	X						X	X		-	-	-
	Surf scoter				X	X	X	X						X	X		-	-	-
	White-winged scoter				X	X	X	X						X	X		-	-	-
468	Great blue heron			50 NESTS	X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUL	-	-

FISH:

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Spawning	Eggs	Larvae	Juveniles	Adults
3	Black crappie				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	-	-	JAN-DEC	JAN-DEC
	Bluegill				X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	-	-	-	JAN-DEC
	Bowfin				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-	-	JAN-DEC
	Brown bullhead				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-	-	JAN-DEC
	Chain pickerel				X	X	X	X	X	X	X	X	X	X	X	X	FEB-APR	-	-	-	JAN-DEC

Biological information shown on the maps represents known concentration areas or occurrences, but does not necessarily represent the full distribution or range of each species. This is particularly important to recognize when considering potential impacts to protected species.

Virginia: ESIMAP 1 (cont.)

BIOLOGICAL RESOURCES: (cont.)

FISH: (cont.)

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Spawning	Eggs	Larvae	Juveniles	Adults
3	Chubsucker				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
	Common carp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-AUG	-	-	-	JAN-DEC
	Largemouth bass				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	-	-	-	JAN-DEC
	Pumpkinseed				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUN	-	-	JAN-DEC	JAN-DEC
	White perch				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Yellow perch				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
6	Alewife				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	American eel				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Atlantic menhaden				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Blueback herring				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Bowfin				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-	-	JAN-DEC
	Brown bullhead				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-	-	JAN-DEC
	Common carp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-AUG	-	-	-	JAN-DEC
	Spot				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Summer flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	White perch				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	APR-JUN	APR-JUN	JAN-DEC	JAN-DEC
	Yellow perch				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-	JAN-DEC	JAN-DEC
7	Atlantic croaker							X	X	X	X	X	X	X	X	X	-	-	-	AUG-DEC	MAY-NOV
	Atlantic mackerel						X	X									-	-	-	-	MAR-APR
	Atlantic menhaden				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	MAY-OCT
	Black drum							X	X	X	X	X	X	X			-	-	-	-	APR-OCT
	Black sea bass							X	X	X	X	X	X	X			JUN-OCT	-	-	APR-OCT	APR-OCT
	Bluefish							X	X	X	X	X	X	X	X		-	-	-	MAY-NOV	APR-NOV
	Butterfish						X	X	X	X	X	X	X	X	X		-	-	-	JUL-NOV	MAR-NOV
	Crevalle jack				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Northern kingfish							X	X	X	X	X	X	X			MAY-AUG	-	-	-	APR-OCT
	Northern searobin						X	X	X	X	X	X	X	X			-	-	-	-	MAR-OCT
	Pollock				X	X	X	X								X	-	-	-	-	DEC-APR
	Red drum								X	X	X	X	X	X	X		JUL-NOV	-	-	-	MAY-NOV
	Red hake					X	X	X	X				X	X	X		-	-	-	FEB-MAY	FEB-MAY SEP-NOV
	Sandbar shark									X	X	X	X	X	X		-	-	-	MAY-OCT	MAY-OCT
	Scup (porgy)							X	X	X	X	X	X	X	X		-	-	-	JUN-OCT	MAR-OCT
	Silver hake				X	X	X	X	X					X	X	X	-	-	-	-	OCT-MAY
	Southern kingfish (whiting)							X	X	X	X	X	X	X			-	-	-	-	APR-OCT
	Spanish mackerel							X	X								-	-	-	-	APR-MAY
	Spiny dogfish				X	X	X	X							X	X	-	-	-	-	NOV-APR
	Spot				X	X	X	X	X	X	X	X	X	X	X	X	-	-	DEC-APR	MAR-NOV	MAR-NOV
	Spotted hake						X	X	X	X				X	X	X	-	-	-	MAR-JUN	MAR-JUN SEP-NOV
	Spotted seatrout							X	X	X	X	X	X	X	X		MAY-JUL	-	-	APR-NOV	APR-NOV
	Summer flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	-	OCT-MAY	-	APR-OCT
	Tautog				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	-	-	-	JAN-DEC
	Weakfish							X	X	X	X	X	X	X	X		APR-AUG	-	MAY-AUG	APR-NOV	APR-NOV

INVERTEBRATE:

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Spawning	Eggs	Larvae	Juveniles	Adults
3	Brackishwater clam				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
	Carolina marsh clam				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
6	Brackishwater clam				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
7	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	-	-	MAY-NOV	JAN-DEC	JAN-DEC
	Channeled whelk				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC

MARINE MAMMAL:

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Mating	Calving	Pupping	Molting
7	Bottlenose dolphin							X	X	X	X	X	X	X			-	-	-	-
	Common dolphin								X	X	X	X	X	X			-	-	-	-
	Harbor porpoise				X	X	X	X	X							X	-	-	-	-
	Humpback whale	E	E		X	X	X	X	X	X	X	X	X	X	X	X	-	JAN-DEC	-	-

REPTILE:

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Nesting	Hatching	Internesting	Juveniles	Adults
7	Green sea turtle	T	T						X	X	X	X	X	X	X		-	-	-	MAY-NOV	-
	Kemp's ridley sea turtle	E	E						X	X	X	X	X	X	X		-	-	-	MAY-NOV	MAY-NOV
	Leatherback sea turtle	E	E						X	X	X	X	X	X	X		-	-	-	-	MAY-NOV
	Loggerhead sea turtle	T	T						X	X	X	X	X	X	X		-	-	-	MAY-NOV	MAY-NOV
576	Loggerhead sea turtle	T	T						X	X	X	X	X	X	X		MAY-NOV	-	-	-	MAY-NOV

HUMAN USE RESOURCES:

COAST GUARD:

HUN#	Name	Contact	Phone
64	FALSE CAPE USCG STATION (HISTORICAL)		

MANAGEMENT AREA:

HUN#	Name	Contact	Phone
105	FALSE CAPE NATURAL AREA PRESERVE	VA DCR DNH	757/925-2318
118	PRINCESS ANNE WILDLIFE MANAGEMENT AREA	VDGIF	804/367-1000

PARK:

HUN#	Name	Contact	Phone
137	FALSE CAPE STATE PARK	VA DCR	757/426-7128

WILDLIFE REFUGE:

HUN#	Name	Contact	Phone
146	BACK BAY NATIONAL WILDLIFE REFUGE	U.S. FISH AND WILDLIFE SERVICE	757/721-2412
154	MACKAY ISLAND NATIONAL WILDLIFE REFUGE	U.S. FISH AND WILDLIFE SERVICE	252/429-3100

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Virginia: ESIMAP 2

BIOLOGICAL RESOURCES:

BIRD:

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Nesting	Migrating	Molting
1	Black-bellied plover			LOW			X	X	X	X	X	X	X	X			-	-	-
	Bonaparte's gull			LOW	X	X	X	X								X	-	-	-
	Brown pelican	C		LOW			X	X	X	X	X	X	X	X			-	-	-
	Caspian tern	C		LOW			X	X	X				X	X	X		-	-	-
	Common tern			LOW			X	X	X	X	X	X	X	X			-	-	-
	Forster's tern			MODERATE			X	X	X	X	X	X	X	X			-	-	-
	Great black-backed gull			LOW	X	X	X	X	X				X	X	X	X	-	-	-
	Herring gull			LOW	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Laughing gull			LOW			X	X	X	X	X	X	X	X			-	-	-
	Least sandpiper			LOW			X	X	X				X	X	X		-	-	-
	Least tern	C		LOW			X	X	X	X	X						-	-	-
	Lesser black-backed gull			LOW	X	X	X	X	X				X	X	X	X	-	-	-
	Ring-billed gull			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Royal tern			MODERATE			X	X	X	X	X	X	X	X			-	-	-
	Ruddy turnstone			LOW			X	X	X				X	X	X		-	-	-
	Sanderling			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Sandwich tern	C		LOW			X	X	X	X	X	X	X	X			-	-	-
	Semipalmated plover			LOW	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Semipalmated sandpiper			LOW				X	X				X				-	-	-
	Willet			LOW			X	X	X	X	X	X	X	X			-	-	-
2	American black duck			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-
	American wigeon			HIGH	X	X	X	X	X	X			X	X	X	X	MAY-JUN	-	-
	Canada goose			LOW	X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-
	Gadwall			HIGH	X	X	X	X	X				X	X	X	X	APR-MAY	-	-
	Green-winged teal			HIGH	X	X	X	X	X				X	X	X	X	-	-	-
	Tundra swan			MODERATE	X	X	X	X	X				X	X	X	X	-	-	-
3	American bittern			LOW	X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-
	American black duck			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-
	American coot			LOW	X	X	X	X	X				X	X	X	X	-	-	-
	American wigeon			LOW	X	X	X	X	X	X			X	X	X	X	MAY-JUN	-	-
	Blue-winged teal			MODERATE			X	X	X	X	X	X	X				MAY-JUN	-	-
	Bufflehead			LOW	X	X							X	X	X	X	-	-	-
	Canada goose			MODERATE	X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-
	Cattle egret			LOW						X	X	X					JUN-AUG	-	-
	Common merganser			LOW	X	X	X	X	X				X	X	X	X	-	-	-
	Common moorhen	C		LOW	X	X	X	X	X	X			X	X	X	X	MAY-JUN	-	-
	Gadwall			MODERATE	X	X	X	X	X				X	X	X	X	APR-MAY	-	-
	Glossy ibis	C		LOW			X	X	X	X	X	X	X	X			-	-	-
	Great blue heron			LOW	X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUL	-	-
	Great egret	C		MODERATE			X	X	X	X	X	X	X	X			-	-	-
	Greater yellowlegs			LOW				X	X				X				-	-	-
	Green-winged teal			HIGH	X	X	X	X	X				X	X	X	X	-	-	-
	Killdeer			LOW			X	X	X	X	X	X	X	X			-	-	-
	King rail			MODERATE	X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUN	-	-
	Least bittern			LOW			X	X	X	X	X	X					MAY-JUN	-	-
	Least sandpiper			LOW			X	X	X				X	X	X		-	-	-
	Lesser yellowlegs			MODERATE				X	X				X				-	-	-
	Mallard			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-
	Northern pintail			MODERATE	X	X							X	X	X	X	-	-	-
	Northern shoveler			LOW	X	X	X	X	X				X	X	X	X	-	-	-
	Pied-billed grebe			LOW	X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUN	-	-
	Ruddy duck			LOW	X	X	X	X	X				X	X	X	X	-	-	-
	Scaup			LOW	X	X	X	X	X				X	X	X	X	-	-	-
	Semipalmated plover			LOW	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Semipalmated sandpiper			MODERATE				X	X				X				-	-	-
	Short-billed dowitcher			LOW			X	X	X								-	-	-
	Snow goose			MODERATE	X	X	X	X	X				X	X	X	X	-	-	-
	Snowy egret			MODERATE	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Sora			LOW	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Spotted sandpiper			LOW			X	X	X				X	X	X		-	-	-
	Tricolored heron	C		LOW			X	X	X	X	X	X	X	X			-	-	-
	Tundra swan			MODERATE	X	X	X	X	X				X	X	X	X	-	-	-
	Virginia rail			LOW	X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUN	-	-
	Wood duck			MODERATE			X	X	X	X	X	X	X	X			APR-MAY	-	-
4	Osprey						X	X	X	X	X	X	X	X			MAR-AUG	-	-
5	Greater yellowlegs			LOW				X	X				X				-	-	-
	Lesser yellowlegs			MODERATE				X	X				X				-	-	-
	Semipalmated sandpiper			MODERATE				X	X				X				-	-	-
8	Brown pelican	C					X	X	X	X	X	X	X	X			-	-	-
	Common loon				X	X	X								X	X	-	-	-
	Northern gannet			HIGH	X	X	X								X	X	-	-	-
	Red-breasted merganser			VERY HIGH	X	X	X								X	X	-	-	-
	Red-necked grebe					X	X										-	-	-
	Red-throated loon				X	X	X								X	X	-	-	-
10	Lesser scaup			MODERATE	X	X	X	X	X				X	X	X	X	-	-	-
	Snow goose				X	X	X	X	X				X	X	X	X	-	-	-
11	American black duck			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-
	American coot			LOW	X	X	X	X	X				X	X	X	X	-	-	-
	American wigeon			LOW	X	X	X	X	X	X			X	X	X	X	MAY-JUN	-	-
	Blue-winged teal			MODERATE			X	X	X	X	X	X	X				MAY-JUN	-	-
	Gadwall			MODERATE	X	X	X	X	X				X	X	X	X	APR-MAY	-	-
	Green-winged teal			HIGH	X	X	X	X	X				X	X	X	X	-	-	-
	Mallard			VERY HIGH	X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-
	Northern pintail			MODERATE	X	X							X	X	X	X	-	-	-
	Northern shoveler			LOW	X	X	X	X	X				X	X	X	X	-	-	-
	Wood duck			MODERATE			X	X	X	X	X	X	X	X			APR-MAY	-	-
13	American wigeon			HIGH	X	X	X	X	X				X	X	X	X	-	-	-
	Gadwall			HIGH	X	X	X	X	X				X	X	X	X	-	-	-
14	Black scoter			HIGH	X	X	X	X							X	X	-	-	-
	Surf scoter				X	X	X	X							X	X	-	-	-
	White-winged scoter				X	X	X	X							X	X	-	-	-
109	American bittern			LOW	X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-
	Great blue heron			< 10 NESTS	X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUL	-	-
	King rail			LOW	X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUN	-	-
	Least bittern			LOW			X	X	X	X	X	X					MAY-JUN	-	-
	Virginia rail			LOW	X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUN	-	-
110	American black duck			HIGH	X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-
	Canada goose				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-
	Great blue heron			LOW	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Great egret	C		LOW			X	X	X	X	X	X	X	X			-	-	-
	Green-winged teal			HIGH	X	X	X	X	X				X	X	X	X	-	-	-
	Mallard				X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-
111	Bald eagle	T	T		X	X	X	X	X	X	X				X		MAR-MAY	-	-
	Least bittern			LOW-MODERATE			X	X	X	X	X	X					APR-MAY	-	-
	Mallard				X	X							X	X	X	X	-	-	-
112	American bittern			LOW	X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-
	American black duck				X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-
	Clapper rail			VERY LOW	X	X	X	X	X	X	X	X	X	X			APR-MAY	-	-
	King rail			MODERATE	X	X	X	X	X				X	X	X	X	APR-MAY	-	-

Biological information shown on the maps represents known concentration areas or occurrences, but does not necessarily represent the full distribution or range of each species. This is particularly important to recognize when considering potential impacts to protected species.

Virginia: ESIMAP 2 (cont.)

BIOLOGICAL RESOURCES: (cont.)

BIRD: (cont.)

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Nesting	Migrating	Molting
112	Mallard				X	X							X	X	X	X	-	-	-
	Virginia rail			LOW			X	X	X	X	X	X	X	X	X		APR-MAY	-	-
113	American black duck			LOW	X	X	X	X				X	X	X	X		-	-	-
	Gadwall			LOW	X	X	X	X	X			X	X	X	X		-	-	-
	Great blue heron			LOW	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Great egret	C		LOW			X	X	X	X	X	X	X	X	X		-	-	-
	Mallard			LOW	X	X	X	X	X			X	X	X	X		-	-	-
	Tundra swan			LOW	X	X	X	X	X			X	X	X	X		-	-	-
406	Great blue heron			5 NESTS	X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUL	-	-
432	Great blue heron			10 NESTS	X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUL	-	-
562	Peregrine falcon	T					X	X	X	X	X	X					MAR-AUG	-	-

FISH:

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Spawning	Eggs	Larvae	Juveniles	Adults
3	Black crappie				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	-	-	JAN-DEC	JAN-DEC
	Bluegill				X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	-	-	-	JAN-DEC
	Bowfin				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-	-	JAN-DEC
	Brown bullhead				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-	-	JAN-DEC
	Chain pickerel				X	X	X	X	X	X	X	X	X	X	X	X	FEB-APR	-	-	-	JAN-DEC
	Chubsucker				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
	Common carp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-AUG	-	-	-	JAN-DEC
	Largemouth bass				X	X	X	X	X	X	X	X	X	X	X	X	MAR-MAY	-	-	-	JAN-DEC
	Pumpkinseed				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUN	-	-	JAN-DEC	JAN-DEC
	White perch				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Yellow perch				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
6	Alewife				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	American eel				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Atlantic menhaden				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Blueback herring				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Bowfin				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-	-	JAN-DEC
	Brown bullhead				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-	-	JAN-DEC
	Common carp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-AUG	-	-	-	JAN-DEC
	Spot				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Summer flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	White perch				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	APR-JUN	APR-JUN	JAN-DEC	JAN-DEC
	Yellow perch				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-	JAN-DEC	JAN-DEC
7	Atlantic croaker						X	X	X	X	X	X	X	X	X	X	-	-	-	AUG-DEC	MAY-NOV
	Atlantic mackerel					X	X										-	-	-	-	MAR-APR
	Atlantic menhaden				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	MAY-OCT
	Black drum						X	X	X	X	X	X	X				-	-	-	-	APR-OCT
	Black sea bass						X	X	X	X	X	X	X				JUN-OCT	-	-	APR-OCT	APR-OCT
	Bluefish						X	X	X	X	X	X	X	X			-	-	-	MAY-NOV	APR-NOV
	Butterfish					X	X	X	X	X	X	X	X	X			-	-	-	JUL-NOV	MAR-NOV
	Crevalle jack				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Northern kingfish						X	X	X	X	X	X	X				MAY-AUG	-	-	-	APR-OCT
	Northern searobin					X	X	X	X	X	X	X	X				-	-	-	-	MAR-OCT
	Pollock				X	X	X	X								X	-	-	-	-	DEC-APR
	Red drum							X	X	X	X	X	X	X			JUL-NOV	-	-	-	MAY-NOV
	Red hake					X	X	X	X			X	X	X			-	-	-	FEB-MAY	FEB-MAY SEP-NOV
	Sandbar shark							X	X	X	X	X	X				-	-	-	MAY-OCT	MAY-OCT
	Scup (porgy)						X	X	X	X	X	X	X	X			-	-	-	JUN-OCT	MAR-OCT
	Silver hake				X	X	X	X	X				X	X	X		-	-	-	-	OCT-MAY
	Southern kingfish (whiting)							X	X	X	X	X	X				-	-	-	-	APR-OCT
	Spanish mackerel							X	X								-	-	-	-	APR-MAY
	Spiny dogfish				X	X	X	X							X	X	-	-	-	-	NOV-APR
	Spot				X	X	X	X	X	X	X	X	X	X	X	X	-	-	DEC-APR	MAR-NOV	MAR-NOV
	Spotted hake						X	X	X	X			X	X	X		-	-	-	MAR-JUN	MAR-JUN SEP-NOV
	Spotted seatrout							X	X	X	X	X	X	X	X		MAY-JUL	-	-	APR-NOV	APR-NOV
	Summer flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	-	OCT-MAY	-	APR-OCT
	Tautog				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	-	-	-	JAN-DEC
	Weakfish						X	X	X	X	X	X	X	X	X		APR-AUG	-	MAY-AUG	APR-NOV	APR-NOV

HABITAT:

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D
113	Rare plant				X	X	X	X	X	X	X	X	X	X	X	X

INVERTEBRATE:

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Spawning	Eggs	Larvae	Juveniles	Adults
3	Brackishwater clam				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
	Carolina marsh clam				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
6	Brackishwater clam				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
7	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	-	-	MAY-NOV	JAN-DEC	JAN-DEC
	Channeled whelk				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC

MARINE MAMMAL:

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Mating	Calving	Pupping	Molting
7	Bottlenose dolphin							X	X	X	X	X	X	X			-	-	-	-
	Common dolphin								X	X	X	X	X	X			-	-	-	-
	Harbor porpoise				X	X	X	X	X						X		-	-	-	-
	Humpback whale	E	E		X	X	X	X	X	X	X	X	X	X	X	X	-	JAN-DEC	-	-

REPTILE:

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Nesting	Hatching	Internesting	Juveniles	Adults
7	Green sea turtle	T	T						X	X	X	X	X	X	X	X	-	-	-	MAY-NOV	-
	Kemp's ridley sea turtle	E	E						X	X	X	X	X	X	X	X	-	-	-	MAY-NOV	MAY-NOV
	Leatherback sea turtle	E	E						X	X	X	X	X	X	X	X	-	-	-	-	MAY-NOV
	Loggerhead sea turtle	T	T						X	X	X	X	X	X	X	X	-	-	-	MAY-NOV	MAY-NOV
576	Loggerhead sea turtle	T	T						X	X	X	X	X	X	X	X	MAY-NOV	-	-	-	MAY-NOV
577	Loggerhead sea turtle	T	T						X	X	X	X	X	X	X	X	MAY-NOV	-	-	-	MAY-NOV

HUMAN USE RESOURCES:

COAST GUARD:

HUN#	Name	Contact	Phone
65	LITTLE ISLAND USCG STATION		

MANAGEMENT AREA:

HUN#	Name	Contact	Phone
118	PRINCESS ANNE WILDLIFE MANAGEMENT AREA	VDGIF	804/367-1000

Biological information shown on the maps represents known concentration areas or occurrences, but does not necessarily represent the full distribution or range of each species. This is particularly important to recognize when considering potential impacts to protected species.

Virginia: ESIMAP 2 (cont.)

HUMAN USE RESOURCES: (cont.)

PARK:

HUN#	Name	Contact	Phone
137	FALSE CAPE STATE PARK	VA DCR	757/426-7128

WATER INTAKE:

HUN#	Name	Contact	Phone
145	WATER INTAKE	JOHN GALLEGOS	757/721-2412

WILDLIFE REFUGE:

HUN#	Name	Contact	Phone
146	BACK BAY NATIONAL WILDLIFE REFUGE	U.S. FISH AND WILDLIFE SERVICE	757/721-2412

Biological information shown on the maps represents known concentration areas or occurrences, but does not necessarily represent the full distribution or range of each species. This is particularly important to recognize when considering potential impacts to protected species.

Virginia: ESIMAP 3

BIOLOGICAL RESOURCES:

BIRD:

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Nesting	Migrating	Molting
8	Brown pelican	C					X	X	X	X	X	X	X	X	X		-	-	-
	Common loon				X	X	X								X	X	-	-	-
	Northern gannet			HIGH	X	X	X								X	X	-	-	-
	Red-breasted merganser			VERY HIGH	X	X	X								X	X	-	-	-
	Red-necked grebe					X	X										-	-	-
	Red-throated loon				X	X	X								X	X	-	-	-
14	Black scoter			HIGH	X	X	X	X							X	X	-	-	-
	Surf scoter				X	X	X	X							X	X	-	-	-
	White-winged scoter				X	X	X	X							X	X	-	-	-
113	American black duck			LOW	X	X	X	X	X			X	X	X	X	X	-	-	-
	Gadwall			LOW	X	X	X	X	X			X	X	X	X	X	-	-	-
	Great blue heron			LOW	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-
	Great egret	C		LOW			X	X	X	X	X	X	X	X	X		-	-	-
	Mallard			LOW	X	X	X	X	X			X	X	X	X	X	-	-	-
	Tundra swan			LOW	X	X	X	X	X			X	X	X	X	X	-	-	-
562	Peregrine falcon	T					X	X	X	X	X	X					MAR-AUG	-	-

FISH:

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Spawning	Eggs	Larvae	Juveniles	Adults
6	Alewife				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	American eel				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Atlantic menhaden				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Blueback herring				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Bowfin				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-	-	JAN-DEC
	Brown bullhead				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-	-	JAN-DEC
	Common carp				X	X	X	X	X	X	X	X	X	X	X	X	MAY-AUG	-	-	-	JAN-DEC
	Spot				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Summer flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	White perch				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	APR-JUN	APR-JUN	JAN-DEC	JAN-DEC
	Yellow perch				X	X	X	X	X	X	X	X	X	X	X	X	APR-JUN	-	-	JAN-DEC	JAN-DEC
7	Atlantic croaker						X	X	X	X	X	X	X	X	X		-	-	-	AUG-DEC	MAY-NOV
	Atlantic mackerel					X	X										-	-	-	-	MAR-APR
	Atlantic menhaden				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	MAY-OCT
	Black drum						X	X	X	X	X	X	X				-	-	-	-	APR-OCT
	Black sea bass						X	X	X	X	X	X	X				JUN-OCT	-	-	APR-OCT	APR-OCT
	Bluefish						X	X	X	X	X	X	X	X			-	-	-	MAY-NOV	APR-NOV
	Butterfish					X	X	X	X	X	X	X	X	X			-	-	-	JUL-NOV	MAR-NOV
	Crevalle jack				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	-
	Northern kingfish						X	X	X	X	X	X	X				MAY-AUG	-	-	-	APR-OCT
	Northern searobin					X	X	X	X	X	X	X	X				-	-	-	-	MAR-OCT
	Pollock				X	X	X	X								X	-	-	-	-	DEC-APR
	Red drum						X	X	X	X	X	X	X				JUL-NOV	-	-	-	MAY-NOV
	Red hake					X	X	X	X			X	X	X			-	-	-	FEB-MAY	FEB-MAY SEP-NOV
	Sandbar shark							X	X	X	X	X	X				-	-	-	MAY-OCT	MAY-OCT
	Scup (porgy)						X	X	X	X	X	X	X	X			-	-	-	JUN-OCT	MAR-OCT
	Silver hake				X	X	X	X	X					X	X	X	-	-	-	-	OCT-MAY
	Southern kingfish (whiting)							X	X	X	X	X	X				-	-	-	-	APR-OCT
	Spanish mackerel							X	X								-	-	-	-	APR-MAY
	Spiny dogfish				X	X	X	X							X	X	-	-	-	-	NOV-APR
	Spot				X	X	X	X	X	X	X	X	X	X	X	X	-	-	DEC-APR	MAR-NOV	MAR-NOV
	Spotted hake						X	X	X	X			X	X	X		-	-	-	MAR-JUN	MAR-JUN SEP-NOV
	Spotted seatrout							X	X	X	X	X	X	X	X		MAY-JUL	-	-	APR-NOV	APR-NOV
	Summer flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	-	OCT-MAY	-	APR-OCT
	Tautog				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	-	-	-	JAN-DEC
	Weakfish							X	X	X	X	X	X	X	X		APR-AUG	-	MAY-AUG	APR-NOV	APR-NOV
18	Alewife					X	X	X	X	X							-	-	-	-	FEB-JUN
	American eel				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	SEP-DEC
	American shad				X	X	X	X	X	X				X	X		-	-	-	NOV-MAR	JAN-JUN
	Atlantic croaker							X	X	X	X	X	X	X	X		-	-	-	AUG-DEC	MAY-NOV
	Atlantic mackerel					X	X										-	-	-	-	MAR-APR
	Atlantic menhaden				X	X	X	X	X	X	X	X	X	X	X	X	-	-	MAY-NOV	JAN-DEC	MAY-OCT
	Atlantic silverside				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	-	-	JAN-DEC	JAN-DEC
	Atlantic spadefish											X	X	X	X		-	-	-	AUG-OCT	AUG-NOV
	Atlantic sturgeon		C		X	X	X	X	X	X	X	X	X	X			-	-	-	-	JAN-OCT
	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	-	-	JAN-DEC	JAN-DEC
	Black drum							X	X	X	X	X	X	X	X		APR-JUN	APR-JUN	APR-JUN	APR-NOV	APR-NOV
	Black sea bass							X	X	X	X	X	X	X			JUN-OCT	-	-	APR-OCT	APR-OCT
	Blueback herring				X	X	X	X	X	X					X	X	-	-	-	NOV-MAR	JAN-JUN
	Bluefish							X	X	X	X	X	X	X	X		-	-	-	MAY-NOV	APR-NOV
	Butterfish						X	X	X	X	X	X	X	X	X		-	-	-	JUL-NOV	MAR-NOV
	Clearnose skate							X	X	X	X	X	X	X			-	-	-	-	MAY-NOV
	Gobies				X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-OCT	JAN-DEC	JAN-DEC
	Harvestfish							X	X	X	X	X	X	X			-	-	-	JUL-OCT	APR-OCT
	Hickory shad				X	X	X	X	X	X					X	X	-	-	-	NOV-MAR	JAN-JUN
	Hogchoker				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	MAY-SEP	MAY-SEP	JAN-DEC	JAN-DEC
	Inland silverside				X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-	JAN-DEC	JAN-DEC
	Minnows				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	-	-	JAN-DEC	JAN-DEC
	Mummichog				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	-	-	JAN-DEC	JAN-DEC
	Northern kingfish							X	X	X	X	X	X	X			-	-	-	-	APR-OCT
	Northern pipefish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUN	-	-	JAN-DEC	JAN-DEC
	Northern puffer						X	X	X	X	X	X	X	X			MAY-AUG	-	-	MAR-OCT	MAR-OCT
	Northern searobin						X	X	X	X	X	X	X	X			MAY-JUL	-	-	-	MAR-OCT
	Red drum							X	X	X	X	X	X	X			JUL-NOV	-	-	AUG-SEP	MAY-NOV
	Red hake					X	X	X	X			X	X	X			-	-	-	FEB-MAY	FEB-MAY SEP-NOV
	Sandbar shark							X	X	X	X	X	X				-	-	-	MAY-OCT	MAY-OCT
	Scup (porgy)						X	X	X	X	X	X	X	X			-	-	-	JUN-OCT	MAR-OCT
	Silver hake				X	X	X	X	X					X	X	X	-	-	-	-	OCT-MAY
	Silver perch				X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-	JAN-DEC	JAN-DEC
	Spot				X	X	X	X	X	X	X	X	X	X	X	X	-	-	DEC-APR	MAR-NOV	MAR-NOV
	Spotted hake						X	X	X	X			X	X	X		-	-	-	MAR-JUN	MAR-JUN SEP-NOV
	Spotted seatrout							X	X	X	X	X	X	X	X		MAY-JUL	-	-	APR-NOV	APR-NOV
	Striped bass				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
	Striped killifish				X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	-	-	JAN-DEC	JAN-DEC
	Summer flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	-	OCT-MAY	JAN-DEC	APR-OCT
	Tautog				X	X	X	X						X	X	X	-	-	-	-	OCT-APR
	Threadfin shad					X	X	X	X			X	X	X			-	-	-	-	FEB-MAY SEP-NOV
	Weakfish						X	X	X	X	X	X	X	X			APR-AUG	-	MAY-AUG	APR-NOV	APR-NOV

HABITAT:

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D
113	Rare plant				X	X	X	X	X	X	X	X	X	X	X	X

Biological information shown on the maps represents known concentration areas or occurrences, but does not necessarily represent the full distribution or range of each species. This is particularly important to recognize when considering potential impacts to protected species.

Virginia: ESIMAP 3 (cont.)

BIOLOGICAL RESOURCES: (cont.)

INVERTEBRATE:

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Spawning	Eggs	Larvae	Juveniles	Adults
6	Brackishwater clam				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
7	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	-	-	MAY-NOV	JAN-DEC	JAN-DEC
	Channeled whelk				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
18	Horseshoe crab				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
	Knobbed whelk				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
19	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-SEP	MAY-NOV	JAN-DEC	JAN-DEC
	Channeled whelk				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC

MARINE MAMMAL:

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Mating	Calving	Pupping	Molting
7	Bottlenose dolphin							X	X	X	X	X	X	X			-	-	-	-
	Common dolphin								X	X	X	X	X	X			-	-	-	-
	Harbor porpoise				X	X	X	X	X							X	-	-	-	-
	Humpback whale	E	E		X	X	X	X	X	X	X	X	X	X	X	X	-	JAN-DEC	-	-
18	Harbor porpoise				X	X	X	X	X							X	-	-	-	-
20	Bottlenose dolphin							X	X	X	X	X	X	X			-	-	-	-

REPTILE:

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Nesting	Hatching	Internesting	Juveniles	Adults
7	Green sea turtle	T	T					X	X	X	X	X	X	X	X	X	-	-	-	MAY-NOV	-
	Kemp's ridley sea turtle	E	E					X	X	X	X	X	X	X	X	X	-	-	-	MAY-NOV	MAY-NOV
	Leatherback sea turtle	E	E					X	X	X	X	X	X	X	X	X	-	-	-	-	MAY-NOV
	Loggerhead sea turtle	T	T					X	X	X	X	X	X	X	X	X	-	-	-	MAY-NOV	MAY-NOV
576	Loggerhead sea turtle	T	T					X	X	X	X	X	X	X	X	X	MAY-NOV	-	-	-	MAY-NOV

HUMAN USE RESOURCES:

WILDLIFE REFUGE:

HUN#	Name	Contact	Phone
146	BACK BAY NATIONAL WILDLIFE REFUGE	U.S. FISH AND WILDLIFE SERVICE	757/721-2412

Biological information shown on the maps represents known concentration areas or occurrences, but does not necessarily represent the full distribution or range of each species. This is particularly important to recognize when considering potential impacts to protected species.

Virginia: ESIMAP 4

BIOLOGICAL RESOURCES:

BIRD:

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Nesting	Migrating	Molting
413	Yellow-crowned night-heron	C		3 NESTS			X	X	X	X	X	X	X	X	X		MAY-JUL	-	-
433	Yellow-crowned night-heron	C		4 NESTS			X	X	X	X	X	X	X	X	X		MAY-JUL	-	-
454	Yellow-crowned night-heron	C		8 NESTS			X	X	X	X	X	X	X	X	X		MAY-JUL	-	-

FISH:

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Spawning	Eggs	Larvae	Juveniles	Adults
18	Alewife					X	X	X	X	X							-	-	-	-	FEB-JUN
	American eel				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	SEP-DEC
	American shad				X	X	X	X	X	X				X	X		-	-	-	NOV-MAR	JAN-JUN
	Atlantic croaker							X	X	X	X	X	X	X	X		-	-	-	AUG-DEC	MAY-NOV
	Atlantic mackerel					X	X										-	-	-	-	MAR-APR
	Atlantic menhaden				X	X	X	X	X	X	X	X	X	X	X	X	-	-	MAY-NOV	JAN-DEC	MAY-OCT
	Atlantic silverside				X	X	X	X	X	X	X	X	X	X	X	X	MAR-JUL	-	-	JAN-DEC	JAN-DEC
	Atlantic spadefish											X	X	X	X		-	-	-	AUG-OCT	AUG-NOV
	Atlantic sturgeon	C			X	X	X	X	X	X	X	X	X	X			-	-	-	-	JAN-OCT
	Bay anchovy				X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	-	-	JAN-DEC	JAN-DEC
	Black drum						X	X	X	X	X	X	X	X			APR-JUN	APR-JUN	APR-JUN	APR-NOV	APR-NOV
	Black sea bass						X	X	X	X	X	X	X				JUN-OCT	-	-	APR-OCT	APR-OCT
	Blueback herring				X	X	X	X	X	X				X	X		-	-	-	NOV-MAR	JAN-JUN
	Bluefish						X	X	X	X	X	X	X	X			-	-	-	MAY-NOV	APR-NOV
	Butterfish					X	X	X	X	X	X	X	X	X			-	-	-	JUL-NOV	MAR-NOV
	Clearnose skate							X	X	X	X	X	X	X			-	-	-	-	MAY-NOV
	Gobies				X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	APR-SEP	APR-OCT	JAN-DEC	JAN-DEC
	Harvestfish						X	X	X	X	X	X	X				-	-	-	JUL-OCT	APR-OCT
	Hickory shad				X	X	X	X	X	X				X	X		-	-	-	NOV-MAR	JAN-JUN
	Hogchoker				X	X	X	X	X	X	X	X	X	X	X	X	MAY-SEP	MAY-SEP	MAY-SEP	JAN-DEC	JAN-DEC
	Inland silverside				X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-	JAN-DEC	JAN-DEC
	Minnows				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	-	-	JAN-DEC	JAN-DEC
	Mummichog				X	X	X	X	X	X	X	X	X	X	X	X	APR-AUG	-	-	JAN-DEC	JAN-DEC
	Northern kingfish							X	X	X	X	X	X	X			-	-	-	-	APR-OCT
	Northern pipefish				X	X	X	X	X	X	X	X	X	X	X	X	MAY-JUN	-	-	JAN-DEC	JAN-DEC
	Northern puffer						X	X	X	X	X	X	X	X			MAY-AUG	-	-	MAR-OCT	MAR-OCT
	Northern searobin						X	X	X	X	X	X	X	X			MAY-JUL	-	-	-	MAR-OCT
	Red drum							X	X	X	X	X	X	X			JUL-NOV	-	-	AUG-SEP	MAY-NOV
	Red hake					X	X	X	X			X	X	X			-	-	-	FEB-MAY	FEB-MAY
																					SEP-NOV
	Sandbar shark							X	X	X	X	X	X				-	-	-	MAY-OCT	MAY-OCT
	Scup (porgy)						X	X	X	X	X	X	X	X			-	-	-	JUN-OCT	MAR-OCT
	Silver hake				X	X	X	X	X					X	X	X	-	-	-	-	OCT-MAY
	Silver perch				X	X	X	X	X	X	X	X	X	X	X	X	APR-MAY	-	-	JAN-DEC	JAN-DEC
	Spot				X	X	X	X	X	X	X	X	X	X	X	X	-	-	DEC-APR	MAR-NOV	MAR-NOV
	Spotted hake					X	X	X	X			X	X	X			-	-	-	MAR-JUN	MAR-JUN
																					SEP-NOV
	Spotted seatrout						X	X	X	X	X	X	X	X			MAY-JUL	-	-	APR-NOV	APR-NOV
	Striped bass				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
	Striped killifish				X	X	X	X	X	X	X	X	X	X	X	X	APR-SEP	-	-	JAN-DEC	JAN-DEC
	Summer flounder				X	X	X	X	X	X	X	X	X	X	X	X	-	-	OCT-MAY	JAN-DEC	APR-OCT
	Tautog				X	X	X				X	X	X				-	-	-	-	OCT-APR
	Threadfin shad					X	X	X	X			X	X	X			-	-	-	-	FEB-MAY
																					SEP-NOV
	Weakfish						X	X	X	X	X	X	X	X			APR-AUG	-	MAY-AUG	APR-NOV	APR-NOV

INVERTEBRATE:

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Spawning	Eggs	Larvae	Juveniles	Adults
18	Horseshoe crab				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
	Knobbed whelk				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC
19	Blue crab				X	X	X	X	X	X	X	X	X	X	X	X	MAY-OCT	MAY-SEP	MAY-NOV	JAN-DEC	JAN-DEC
	Channeled whelk				X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	JAN-DEC	JAN-DEC

MARINE MAMMAL:

RAR#	Species	S	F	Conc.	J	F	M	A	M	J	J	A	S	O	N	D	Mating	Calving	Pupping	Molting
18	Harbor porpoise				X	X	X	X	X							X	-	-	-	-
20	Bottlenose dolphin							X	X	X	X	X	X	X			-	-	-	-

Biological information shown on the maps represents known concentration areas or occurrences, but does not necessarily represent the full distribution or range of each species. This is particularly important to recognize when considering potential impacts to protected species.

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

Due to the extremely high water table VADEQ accepted the fact that a bottom leak in a tank would readily evolve to a visible state along the tank chime area. The DEQ has specific requirements for using monitoring wells for leak detection; the high water table precludes us from using monitoring wells. Tank 2002 has a double bottom with interstitial space and an approved leak detection capability.

Kristen Starry
Paralegal

October 4, 2011

Moran Environmental Recovery, LLC
251 Levy Road
Atlantic Beach, FL 32233

Dear Sir/Madame:

Enclosed please find one original of the Standby Emergency Response Addendum between Moran Environmental Recovery, LLC that was recently executed by both parties.

Should you have any questions regarding this Agreement, please feel free to contact me.

Regards,

Kristen Starry
Paralegal

Enclosure

P.O. Box 781609 • San Antonio, Texas 78278 • (210) 918-3945
Kristen.McCartney@NuStarEnergy.com

Standby Emergency Response Addendum

This Standby Emergency Response Addendum ("Addendum") is entered into by and between NuStar Logistics, L.P. ("Company"), a Delaware limited partnership, with its principal place of business at 2330 N. Loop 1604 West, San Antonio, TX 78248 and Moran Environmental Recovery, LLC ("Contractor"), Delaware limited liability company with offices at 251 Levy Road, Atlantic Beach, Florida 32233, on July 27, 2010. This Addendum supplements the Master Environmental Services Agreement between the Parties (as hereinafter defined) dated August 14, 2008 ("Agreement"). Except as provided in this Addendum, all terms of the Agreement remain in effect. In the event of an inconsistency between this Addendum and the Agreement, this Addendum will prevail.

This Addendum consists of these terms and conditions together with Exhibit A, Exhibit B, Exhibit C and Exhibit D attached hereto and incorporated herein, and all exhibits and addenda executed by the Parties from time to time that reference and incorporate this Addendum. Company and Contractor agree as follows:

RECITALS

A. Contractor owns, maintains and operates certain equipment for use in the containment, recovery and cleanup of oil spills, and Contractor has Personnel who are trained in oil spill response and who are proficient in the use of this equipment and who are available and have agreed o respond to oil spills in and about the locations described on Exhibit A hereto ("Facilities").

B. Company and certain of its Affiliates operate pipelines and terminals primarily for the transportation and storage of liquid products. Company (as defined below) desires to contract with Contractor for (1) the standby availability of oil spill containment and cleanup services at Facilities and (2) the provision of such services at such Facilities. In addition, in order to expedite the process of Company and its Affiliates engaging Contractor to provide additional services at other locations ("New Locations"), Company and Contractor desire to agree in advance that the terms and conditions of this Addendum that will govern any such engagement of future locations.

C. Company and Contractor agree on the terms and conditions set forth herein.

AGREEMENTS

ARTICLE I

Definitions

As used in this Addendum, the following terms shall have the following respective meanings:

"Adverse Weather" means weather conditions that make it difficult for response Equipment and Personnel to clean up and/or remove spilled oil as further defined in 40 CFR Part 112.

"Affiliate" shall mean the parent(s) of a party to this Addendum and each entity of which such party or its parent(s) owns directly or indirectly 50% or more of the ownership or partnership interest.

"Area of Interest" shall mean the geographical extent of real property on which a spill originating from a Facility within the Facilities owned or operated by Company has occurred or migrated, to include public and private properties, beaches, harbors and waters along the waterfront and the coastal portions of the Facilities and all that territory within the jurisdiction of any relevant Captain of the Port at Facilities; provided that nothing herein shall preclude the Parties from contracting or cooperating with persons or organizations in other geographic areas for the purposes set forth in the recitals above.

"Company" means an entity that engages Contractor to perform Work pursuant to this Addendum, which entity may be Company or any Affiliate.

"Equipment" shall mean the equipment owned, leased on a regular basis, or otherwise regularly used by Contractor in order to make available the Services.

"Facility" shall mean any mobile or fixed, onshore or offshore building, structure, installation, equipment, pipe, or pipeline (other than a vessel or a public vessel) of Company within the Area of Interest and set forth in Attachment A.

"Facility Response Plan" means a document used by: (1) federal, state, and local agencies to guide planning and response procedures regarding spill of oil, hazardous substances, or other emergencies; (2) a document used by industry as a response plan to spills of oil, hazardous substances, or other emergencies occurring upon their vessels or at their facilities.

"Incident Commander" shall mean a qualified individual identified in the Facility Response Plan and designated by Company to be the primary Company representative in charge of overseeing oil spill containment and cleanup services. The Incident Commander may change during the duration of an incident response upon notification to Contractor.

"Law" means any and all applicable federal, state, and local codes, constitutions, decrees, directives, laws, licenses, ordinances, injunctions, orders, permits, regulations, requirements, rules, and statutes.

"Liabilities" means actions, claims, causes of action, costs, demands, damages, expenses, fines, lawsuits, liabilities, losses, obligations, and penalties including court costs, defense costs, and reasonable attorneys' fees.

"New Locations" has the meaning set forth in the recitals.

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"Oil" shall mean all substances included in the definition of "oil" in the Oil Pollution Act of 1990, and in Section 12-5-500 of the Official Code of Georgia Annotated (O.C.G.A. § 12-5-500), as such statutes may be amended or revised from time to time.

"OSRO" shall mean an approved Oil Spill Removal Organization as certified by the U.S. Coast Guard.

"Party" means either Company or Contractor, and "Parties" means both Company and Contractor.

"Personnel" shall mean all individuals Contractor herein commits to make available to Company to perform the Services and all individuals Contractor actually uses to perform the Services, including employees of any subcontractor utilized by Contractor as well as Contractor's own employees.

"Purchase Order" shall mean the document used by Company to engage Contractor to perform Services at New Locations or Work at Facilities or New Locations that shall describe the Work, designate the time for performance, and state the compensation to be paid. Contractor may accept a Purchase Order to provide Services at New Locations in writing and Contractor must accept a Purchase Order for performance of the Work as further described in Article II.

"Representatives" means officers, directors, employees, and borrowed servants of the referenced entity and its affiliates.

"Services" shall mean the standby availability to complete specific oil spill containment and clean up services and the actual completion of work rendered by the Contractor at Company's Facility(ies) as further described in Article II.

"Site" shall mean the site of any oil spill covered by this Addendum.

"Supplies" shall mean manpower, equipment and materials used to contain, recover, remediate, and protect employees, the public and the environment during a spill event or natural disaster.

"Work" shall mean a written description of the specific scope of the oil spill containment and clean up Services to be performed in response to an actual or threatened spill from a Facility as further described in Article II and attached to a Purchase Order.

ARTICLE II

Services

2.1. General. The Contractor shall provide to Company oil spill cleanup and containment Services in the Area of Interest, using the Equipment, Supplies and Personnel

available as set forth below in accordance with Laws, including, but not limited to, 40 CFR 112. The Services shall be available on a twenty-four hour/seven day a week standby basis for threatened spills and shall include actual containment, recovery and cleanup in the event of a spill. Contractor shall provide Company with a priority response compared to any other parties.

2.2. Initiation of Work. In the event of an actual or threatened spill at/from a Facility, and if Company desires Services with respect to such spill, Company may notify the Contractor orally of such actual or threatened spill (the "Designated Spill") by a direct telephone call to Contractor's contact number, which is 1-800-oil-tank. Such notification shall include company name, the name and title of the caller, the estimated location of the Site requiring emergency oil containment and cleanup Services, the type of oil involved, if known, the estimated size of the Designated Spill, if known, whether the Designated Spill is on land or in water, the identity of and contact information for the Incident Commander with whom Contractor is to coordinate until notified otherwise, and any other relevant information relating to the Designated Spill then known to the caller.

Company agrees to use reasonable efforts to confirm in writing all oral notifications within twenty-four (24) hours of giving such oral notice, by providing Contractor with a written description of the scope of the Work to be performed. Said written confirmation and description attached to a Purchase Order may be sent to Contractor by e-mail to Contractor at _____or facsimile transmission to Contractor's facsimile number, which is _____. In the event of a conflict between the terms of such written description attached to a Purchase Order and this Addendum, the terms of this Addendum shall prevail.

Contractor will respond as soon as practicable after receiving oral notification of such a Designated Spill. Following the initial response and deployment, Contractor will continue to marshal the necessary Equipment and Personnel and proceed to the Site or such other effected area as quickly as reasonably possible and in accordance with the Law and the Facility Response Plan.

2.3. Mobilization Standby. Company may limit its response initiation to a notice of "mobilization standby." If Company so limits its initiation, Contractor shall bring its Personnel and Equipment to a high state of readiness, but shall not dispatch Equipment or Personnel to the Site until Company thereafter gives express verbal instruction to Contractor to respond to the Designated Spill. For the period of time Contractor is on mobilization standby, Company shall pay Contractor at the straight time rate or the overtime rate (as described on Exhibit B hereto), as appropriate, a minimum of four (4) hours for each person standing-by.

2.4. Scope of Spill Response. Company acknowledges that Services provided by Contractor under this Addendum are provided to the maximum extent practicable in response to an emergency; that the purpose of each spill response is to ensure the safety of the Facility and to mitigate or prevent, to the maximum extent practicable, the environmental damage and health and safety risks resulting from a spill of oil; that it may not ultimately be possible to fully remove all such substances from the Site or other affected areas. Contractor does not warrant, by the terms of this Addendum or by undertaking spill response Services pursuant to this Addendum, that such

response will render the Site, or areas affected by the spill, safe for any human activity or in a state of compliance with any Laws. However, nothing stated in this subsection shall diminish or relieve Contractor from fully complying with the provisions and obligations set forth in this Addendum and its obligations under Law.

2.5 Equipment & Supplies. Contractor shall make available to Company, as, when and where requested, as outlined above, oil spill containment and recovery Supplies and related types of Equipment of the types, makes and/or models, having the capacity ratings, and in the minimum quantities as necessary to perform the oil spill response Services in response to an emergency as required by the relevant Facility Response Plan in a timely and professional manner. A list of the minimum Equipment that will be available for each Designated Spill is set forth in Exhibit C attached hereto.

All Equipment and Supplies furnished by Contractor shall be designed so as to operate effectively in Adverse Weather and under such other conditions as may reasonably be expected to be encountered in the area in which it is to be used.

Such Equipment and Supplies shall be stored at a location, or locations, sufficiently near to the Facilities at which it might be utilized so as to enable the mobilization, travel and response times required by Law and those times stipulated in the relevant Facility Response Plan to be met. Contractor shall keep a daily listing of all Equipment and Supplies brought to the site of the cleanup efforts, and shall detail all Supplies used on the site daily.

Contractor shall maintain all Equipment and Supplies in good working order at all times and shall test Equipment periodically for serviceability. Following any use of the Equipment for Services, training, inspection or other lawful purpose, Contractor shall promptly perform any necessary cleaning, replacement or repair of such Equipment and Supplies.

Contractor shall maintain proper licensing of its Equipment to the extent said Equipment is required to be licensed by applicable Laws.

Contractor acknowledges that the Coast Guard, Environmental Protection Agency or other relevant governmental authorities with jurisdiction ("Governmental On-Scene Coordinator") may from time to time require access to Contractor's Equipment and Supply inventory to verify its condition and availability.

2.6 Personnel. Contractor shall make available to Company as, when and where required, trained and qualified response teams, in sufficient numbers and having the necessary skills and experience necessary to perform the oil spill response Services in response to an emergency as required by the relevant Facility Response Plan in a timely and professional manner.

Contractor shall have Personnel on call on a twenty-four (24) hour basis. These Personnel will be based or stationed at locations sufficiently near to the Facilities at which they might be utilized so as to enable the mobilization, travel and response times required by Law and those times stipulated in the relevant Facility Response Plan to be met. Contractor shall keep a daily log

of all Personnel working on the Site or such other effected areas and shall detail the position held and hours worked by each individual.

Contractor agrees that it will maintain and that it will require its subcontractors to maintain a drug-free and alcohol-free workplace, and Contractor agrees to implement an appropriate testing program of its Personnel to ensure that such a workplace is maintained. In the event work is provided, Contractor agrees to remove from the Site any of Contractor's Personnel upon the request of the Incident Commander.

Contractor shall maintain proper licensing of its Personnel to the extent said Personnel are required to be licensed by applicable Laws.

2.7 Priority. In the event of an actual or threatened oil spill at a Facility, Contractor shall accord to Company a priority response compared to Parties with whom Contractor has no stand-by contract, except to the extent if Contractor would be required to remove Equipment and Personnel from the site of another response to in order to respond to a Designated Spill of Company. In the event Contractor receives notification of the need for oil spill response Services from more than one party with whom Contractor has entered into a stand-by agreement similar to this Addendum, then Contractor shall accord priority to party first notifying Contractor pursuant to Section 2.2. Company acknowledges that Contractor may be otherwise directed by a responsible governmental authority exercising lawful authority to use its response Personnel, Equipment and Supplies in connection with other oil spills. In such event, the priority provisions of this Section 2.7 shall have no effect to the extent said provisions are inconsistent with such directions of such responsible governmental authority.

2.8 Contractor Coordination. Company acknowledges that Contractor may have entered into arrangements with subcontractors, other emergency oil spill response contractors, response networks and/or oil spill cooperatives as may be necessary in order to enable Contractor to perform its obligations under this Addendum. Fee schedules for subcontractor services shall be provided the Company prior to mobilization for a specific emergency response. Contractor will be responsible for the acts and omissions of its Personnel and its subcontractors, and its other emergency oil spill response contractors and their Personnel, in the same capacity as it is responsible for its own acts and omissions.

Contractor acknowledges that Company may have also entered into arrangements with other emergency oil spill response contractors, response networks, oil spill cooperatives and/or subcontractors as may be necessary to ensure compliance with each Facility Response Plan. Contractor further acknowledges that unless otherwise dictated by the Governmental On-Scene Coordinator for the Designated Spill, Company will coordinate all activities of any and all oil spill response organizations that have responded to the Designated Spill, the regulatory authorities and agencies, any and all other persons, organizations, agencies or entities that may be involved in the emergency response efforts. The Parties acknowledge that the provisions of this Addendum in no way require Company to utilize the Services of Contractor in the event of an oil spill in the Area of Interest.

2.9 Incident Commander. All Services provided by Contractor, its Personnel and Subcontractors shall be performed under the direction and control of Company's Incident Commander. Company will notify Contractor of the identity of and provide contact information for the Incident Commander. The Incident Commander may change as the Designated Spill progresses. Company will designate a new Incident Commander as needed and inform Contractor of the change. Upon being directed by Company's Incident Commander, Contractor and/or any or all subcontractors shall cease all cleanup operations, unless Contractor is otherwise directed by a responsible governmental authority exercising lawful authority.

2.10 Contingency Plans. Company may identify the Contractor in any Facility oil spill cleanup contingency plan filed by Contractor with the United States Coast Guard or any other similar governmental authority as being available to provide oil spill assistance to Company. Company has furnished Contractor a paper or electronic copy of the Facility Response Plan for each Facility covered by this Addendum. Contractor has reviewed each Facility Response Plan and represents and warrants that based on standby agreements with subcontractors and other entities, Contractor has the Equipment, Supplies, Personnel, expertise and capability to fulfill the Facility Response Plan's requirements as they relate to Contractor. Contractor will use its best efforts to provide Services in accordance with each Facility Response Plan and otherwise as provided herein. Company will inform Contractor of all material changes or amendments to each of the Facility Response Plans to the extent such change would affect the ability of Contractor to perform oil spill response Services in response to an actual or threatened spill.

ARTICLE III

Contractor Obligations

3.1 General. Contractor shall furnish all Personnel, supervision, labor, Supplies, Equipment and subcontracted items necessary for the performance and completion of Contractor's Services hereunder at the rates set forth in the schedule of fees attached hereto as Exhibit B. Said schedule of fees is subject to revision, annually, upon thirty (30) days written notice provided, however, that no change in such fees will become effective for any Designated Spill where Contractor's response to the Designated Spill commenced prior to any such notification of a change in fees.

3.2 Trained Personnel. Contractor represents and warrants that all Personnel it provides under the terms of this Addendum shall at all times be trained and qualified to perform the required oil spill response Services in response to an actual or threatened spill emergency in accordance with industry standards and all applicable federal, state and/or local regulations or requirements for oil spill or hazardous substance emergency response. Contractor will maintain a minimum of thirty (30) trained responders based or stationed at locations sufficiently near to the Facilities at which they might be utilized that have a minimum of twenty-four (24) hours of OSHA Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) training.

When requested by Company, Contractor shall participate in, and shall cause its Personnel to participate in, Company's sponsored training programs, exercises and periodic unannounced

drills, provided Company agrees to compensate Contractor for the cost of labor, for the cost of returning the Equipment to serviceability, and for the reasonable rent of such Equipment, as provided in the Exhibit B.

Contractor shall not charge Company for desktop drills (up to a maximum of two (2) per year per Facility) conducted by Contractor for the benefit of Company, so long as each such desktop drill lasts no more than one (1) day and involves the participation of no more than two (2) individuals.

3.3 Intentionally Omitted.

3.4 Contractor Employee Safety. Contractor shall take all necessary precautions to ensure the safety of its Personnel and shall comply with all applicable Laws including those pertaining to health and safety. Contractor will comply with Company's then-current policies for contractors at the Work site, including Company's safety, security, and drug and alcohol policies that are provided by Company to Contractor. Contractor will request a copy of Company's then-current policies that are applicable to the Work prior to accepting a Purchase Order.

Contractor shall erect and properly maintain at all times and as required by the oil spill response Services being performed, all necessary and appropriate safeguards for the protection of persons, property and the environment.

3.5 Contractor Records. Contractor shall keep complete and accurate records detailing Contractor's conformance to its obligations under this Addendum, including, without limitation, health and safety records, exercise and drill records, and Equipment and Supply inventories, Equipment maintenance and usage records for a period of three (3) years, beyond the latter of the term of this Addendum, completion of work or a longer period as may be required by Law or for such longer periods if said records are required for use in any pending arbitration and/or litigation at the expiration of said term. Additionally, in the event Contractor performs Work under this Addendum, Company shall have the right to audit, at its own expense, upon giving reasonable notice to Contractor, the records of Contractor as they pertain to Contractor's obligations under this Addendum and charges billed to Company.

3.6 Contractor Licenses/Permits. Contractor shall acquire and maintain any and all required government or agency licenses, permits, authorizations, certifications and/or approvals as may be necessary to perform emergency oil spill response Services.

3.7 Company Owned Supplies and Equipment. Any and all Supplies and Equipment including, but not limited to individual personal protective equipment, issued to Contractor and/or Contractor's Personnel by Company during the course of any Designated Spill is to be returned to Company upon completion of the Work. A detailed listing of all such Supplies and Equipment issued to Contractor will be maintained by Company. The cost of any item(s) which are not timely returned to Company by Contractor will be charged to Contractor. This return requirement shall not apply to any disposable items utilized by Contractor while performing the Work, to the extent such items are no longer serviceable. The provisions of this Section 3.7 do not obligate

Company to provide Contractor any Supplies and Equipment in conjunction with Contractor's performance of Work pursuant to this Addendum.

ARTICLE VIII

Fees and Charges

4.1 Fees for Services. As compensation for any non-emergency Services rendered hereunder, Company shall pay to the Contractor any undisputed invoices within thirty (30) days after receipt for the amounts set forth in Exhibit B for Equipment, Personnel, and Supplies, as provided in Section 3.1 above.

4.2 Major Spill Response Billing. In the event of Work under a major spill that will take more than seven (7) days to clean up that requires the use of subcontractors, including tugboat companies, Contractor may submit field work sheets on a daily basis to Company which itemize all charges incurred by Contractor or its subcontractor(s) for each such twenty-four (24) hour period. Upon receipt of such field work sheets, Company shall guarantee payment of ninety percent (90%) of such charges, allowing ten percent (10%) retainage for final invoice review, and shall make payment of such amounts as quickly as practically possible under the circumstances, which shall at the most be within ten (10) days of delivery of each such twenty-four (24) hour period's field work sheets. Such amounts not timely paid within ten (10) days shall accrue interest at the rate of the then-existing prime rate plus eighteen percent (18%) per annum, or the maximum permissible under Law, whichever is lesser. Daily billing may continue for up to one (1) month.

Contractor shall exercise good faith efforts to use the lowest cost available qualified subcontractors, and shall use subcontractors only when the requirements of the Work surpass the resources of Contractor.

4.3 Other Oil Spill Response Billing. In responding to Designated Spills under this Addendum that only require the resources of Contractor, Contractor shall invoice Company and Company shall pay Contractor's invoices in accordance with the Master Environmental Services Addendum between the Parties.

ARTICLE V

Minimum Insurance Requirements

With respect to Contractor's performance under the Addendum, and in addition to Contractor's obligations of indemnification thereunder, Contractor shall, at its sole cost and expense, obtain and maintain insurance policies set out in Exhibit D attached hereto.

ARTICLE VI

Disposal of Waste

Company shall be solely responsible for the disposal, including but not limited to selection of the site for disposal and the means of transportation to the site, of all substances collected by the Contractor or other individuals during any cleanup of a Designated Spill, including but not limited to all oil, oil refuse, oily debris, oil absorbent, dispersant, and any other waste materials, whether or not such materials are considered dangerous or hazardous. Company shall be solely responsible for obtaining any permits required by the federal or state government prior to such disposal.

ARTICLE VII

Indemnification

7.1 Indemnity. ***To the maximum extent permitted by applicable Laws, Contractor will release, indemnify, defend, and hold harmless Company, its Affiliates, and its and their Representatives (collectively, the "Indemnified Parties") from and against any and all Liabilities arising out of the Work in connection with: (a) the breach by Contractor of this Addendum; (b) injuries and death to people; (c) damage to property; and (d) violation of Laws. Contractor intends the foregoing release, indemnity, defense, and hold harmless obligations to apply to the extent that the Liabilities were caused by the negligent acts or omissions or willful misconduct of the Contractor. Contractor intends the foregoing release, indemnity, defense, and hold harmless obligations to survive the completion of any Work, and the termination of this Addendum.***

7.2 Notwithstanding anything to the contrary herein, it is understood and agreed by the Parties that Contractor will at all times under this Addendum retain any exemption or limitation from liability ("Responder Immunity") pursuant to the Federal Water Pollution Control Act, as amended (FWPCA) 33 U.S.C.A. § 1251 et seq., the Oil Pollution Act of 1990, as amended (OPA-90) 33 U.S.C.A. § 2701 et seq., and any other applicable Federal, state or local law, regulation or ordinance which provides such responder immunity. Operation of such immunity shall be suspended if Contractor is grossly negligent or engages in willful misconduct. For purposes of this indemnity, "gross negligence" shall not be deemed to include Contractor's lack of available Equipment, Supplies or Personnel or failure of Contractor's Equipment. In addition, the term "gross negligence" shall not be deemed to include acts performed by the Contractor at the direction of the U.S. Coast Guard or other governmental authority or at the direction of the Company.

7.3 Defense. If a Liability arises which Contractor is required to defend the Indemnified Parties under this Addendum, the applicable Indemnified Party shall notify Contractor as soon as is commercially possible and Contractor shall provide outside counsel reasonably acceptable to Company for said defense within ten (10) days of Company's notice to Contractor requesting defense. If Contractor fails to provide such counsel within this time period, then the Indemnified Parties may appoint their own outside counsel at Contractor's expense for said defense until Contractor provides such counsel.

7.4 Upon submission of a final statement or invoice for each project completed hereunder, Contractor shall warrant that there are no amounts owed by it or by any of its

subcontractors if any that could become the basis for a materialman's lien under relevant Law against Company's property. In consideration of the final payment made in full for such amounts legitimately owed to Contractor for any work completed under this Addendum, Contractor agrees to defend, indemnify and hold harmless Company against any such materialman's liens arising out of or in any way connected with or resulting from Contractor's or any of its subcontractor's non-payment or disputed payments, for Services rendered hereunder.

ARTICLE VIII

Miscellaneous

8.1 Press Releases. All information provided to the press shall be the responsibility of Company. All statements made by contractor require Company's prior approval. Any statement, if approved, shall be limited to a response that Services are being performed on behalf of Company, a brief description of the Services being performed, the role of the Contractor and a statement that all further inquiries shall be directed to Company.

8.2 Notices. Except for initial oral or telephone notification of a Designated Spill described in Section 2.2, any notice provided for by this Addendum and any other notice, demand or communication that any Party may wish to send to the other in connection with this Addendum shall be in writing and either delivered in person, sent via a nationally recognized express mail service, sent via facsimile transmission with receipt confirmed or sent by registered or certified U.S. mail, first class postage prepaid, return receipt requested, and addressed as follows:

Notice provided to Company shall be provided to the Incident Commander identified to Company as per Section 2.2 above,

With a Copy to:

Attn: Senior Manager, Strategic Sourcing
2330 N. Loop 1604 W.
San Antonio, Texas 78248
Fax: (210) 918-5495

With a copy to:

Attn: General Counsel
2330 N. Loop 1604 W.
San Antonio, Texas 78248
Fax: (210) 918-5500

Notice to Contractor:

Moran Environmental Recovery, LLC
251 Levy Road

Atlantic Beach, Florida 32233
Attn: Contract Manager (Urgent Contract Matter)

8.3 Governing Law, Interpretation. This Addendum will be governed and construed in accordance with the laws of the State of New York, without reference to the choice of law principles thereof. Any disputes arising out of this Addendum will be subject to the exclusive jurisdiction of the U.S. District Court located in the Borough of Manhattan, New York if federal jurisdiction is available and to the courts of the State of New York located in the Borough of Manhattan, New York if federal jurisdiction is not available. Company and Contractor irrevocably waive any right to a trial by jury in connection with any disputes arising out of this Addendum.

8.4 Amendments. This Addendum and the Exhibits thereto constitute the entire agreement between the Parties and supersedes any and all prior agreements. The Addendum may only be amended, modified, supplemented or altered in writing signed by the Parties.

8.5 Assignments. This Addendum and any rights or duties hereunder shall not be assigned by either Party without the express written consent of the other, except as provided below. The following assignments shall be permitted: (a) a transfer by a Party of its interest to an Affiliate of such Party; or (b) a corporate reorganization of a Party, by merger or otherwise; provided in each case the assignee assumes in writing all obligations under this Addendum from such transferring or reorganized Party. Any attempted assignment in violation of this Section 8.5 shall be null and void.

8.6 Binding on Successors. This Addendum shall be binding upon, and shall inure to the benefit of, the Parties and their respective successors and permitted assigns.

8.7 Attorney's Fees. If any litigation is commenced by the Parties arising out of this Addendum, the prevailing Party shall be entitled to recover a reasonable allowance for attorneys' fees and expenses.

8.8 Waiver. No waiver by either Party of any provision or condition of this Addendum shall be construed or deemed to be a waiver by such Party of any other provision or condition of this Addendum or a waiver of any subsequent breach of the same provision or condition, unless such waiver is specifically expressed in writing, signed by the waiving Party.

8.9 Severability. If any provision of this Addendum or portion thereof is declared invalid for any reason, the invalid provisions or portion thereof shall be deemed omitted and the remaining terms shall nevertheless be carried into effect.

IN WITNESS THEREOF, the Parties have executed this Addendum as of the date first above written.

NuStar Logistics, L.P.
By: NuStar GP, Inc., its general partner

Name: Todd Denton
Title: Vice President

Moran Environmental Recovery, LLC

Name: Robert Callahan
Title: CFO

EXHIBIT A

List of Facilities

Moran Environmental Recovery Response for NuStar Energy

Facility	Region	(b) (7)(F)	Site Type	Responding Office
Moblile Terminal (Blakeley)	GC	[redacted]	Terminal	Orange Beach
Moblile Terminal (Chickasaw 1&2)	GC		Terminal	Orange Beach
Montgomery Terminal	GC		Terminal	Orange Beach
Moundville Terminal	GC		Terminal	Orange Beach
Jacksonville Terminal	GC		Terminal	Jacksonville
Bremen Terminal	GC		Terminal	Savannah
				Charleston
				Orange Beach
Brunswick Terminal (Guidance)	GC		Terminal	Savannah
				Jacksonville
Macon Terminal	GC		Terminal	Savannah
Savannah Terminal	GC		Terminal	Savannah
Savannah Asphalt Refinery	REF		Refinery	Savannah
St. James Terminal	GC		Terminal	Orange Beach
Andrews AFB	EC		Terminal	Baltimore
Baltimore Terminal	EC		Terminal	Baltimore
Piney Point Terminal	EC		Terminal	Baltimore
Salisbury Terminal	EC		Terminal	Baltimore
				Norfolk

PHMSA 00004701

Moran Environmental Recovery Response for NuStar Energy

Facility	Region	[redacted] (b) (7)(F)	Site Type	Responding Office
Wilmington Asphalt Terminal	REF		Terminal	Charleston
				Norfolk
Linden Marine JV Terminal #1	EC		Terminal	New Castle
				Newtown
Linden NuTOP Terminal #2	EC		Terminal	New Castle
				Newtown
Paulsboro Terminal	EC		Terminal	New Castle
Paulsboro Asphalt Refinery	REF		Refinery	New Castle
Dumfries Terminal	EC		Terminal	Norfolk
				Norfolk
Virginia Beach Terminal	EC		Terminal	Norfolk

PHMSA 00004702

EXHIBIT B

Fee schedules

EXHIBIT C

Equipment List

EXHIBIT D

Minimum Insurance Requirements

With respect to Contractor's performance under the Agreement, and in addition to Contractor's obligations of indemnification thereunder, Contractor shall, at its sole cost and expense, obtain and maintain the following insurance policies:

Policy	Limits	Coverage
Workers' Compensation	Amount required by law in each state where Contractor conducts operations.	Must include coverage for alternate employers and borrowed servants, if leased employees will be used. To the extent Contractor's activities are subject to the Jones Act, the Longshore and Harbor Workers Compensation Act, or the Defense Base Act (collectively, the "Acts"), the Workers' Compensation policy must be endorsed to cover all liability under any such Acts.
Stop Gap Employers Liability	$500,000 (each accident or disease)	Required in all states where Workers' Compensation insurance is a monopolistic state-run system.
Employer's Liability	• $500,000 for bodily injury (each accident) • $500,000 for bodily injury by disease (policy limits) • $500,000 for bodily injury by disease (each employee)	
Commercial General Liability, and Contractors Pollution Liability	• $2,000,000 general aggregate limit • $1,000,000 each occurrence limit (bodily injury/property damage) • $1,000,000 each occurrence limit (personal injury and advertising injury) • $2,000,000 aggregate limit (products/completed operations) • $1,000,000 each occurrence	Must be written on Insurance Services Office (ISO) Form CG 00 01 12 04 or a substitute form providing equivalent coverage, covering liability arising from premises, operations, personal injury, advertising injury, products/completed operations, and liability assumed under an insured contract (including tort

	limit (products/completed operations) • $1,000,000 each occurrence limit (fire legal liability) • $1,000,000 each occurrence limit (contractors pollution legal liability)	liability of another assumed in a business contract). To cover the legal liability of the Insured for loss or damage to vessels or to property caused by said vessels, craft, and equipment, cargoes, freights, and other interest on board, which are in the c/c/c/ for the purpose of Oil Spill Clean-Up Activities and/or Operations. Including Sudden & Accidental Pollution.
Business Automobile Liability	$1,000,000 combined single limit (bodily injury/property damage)	Must include coverage for all owned, non-owned and hired vehicles and mobile equipment. Must include coverage at least as broad as Insurance Services Office (ISO) CA 99 48 and be endorsed to include Motor Carrier Act endorsement MCS 90 if hazardous material will be hauled in the vehicle.
Hull & Machinery	Hull Liability to Full Agreed Hull Values	Hull & Machinery - American Institute Time Hull Clauses June, 1977, or equivalent. Said policy shall include geographic extensions of coverage to the Gulf of Mexico and other areas in which the vessel(s) may operate and shall have minimum limits equal to or in excess of the full value of the vessel(s) with the deductible in said policy not exceeding $25,000.00, and shall delete from the Inchmaree Clause the exception "other than an assured" in the coverage of negligence of Charterer. Said policy shall also include collision/tower's liability coverage with the sistership

		clause unamended.
Protection & Indemnity	$1,000,000 CSL	Protection and Indemnity Insurance (as per SP 23 form or equivalent) including, but not limited to, coverage for injuries to or death of masters, mates, and members of the crew, third parties, transportation, wages, maintenance and cure, and wreck removal, and in rem protection, third party bodily injury pollution, contractual liability coverage covering Owner's obligations under the Agreement with geographic extensions of coverage to the Gulf of Mexico and other areas in which the vessel may operate, with minimum combined primary and excess limits in an amount of at least $1,000,000.00 with the deductible in said policy not exceeding $25,000.00, and including excess collision/tower's liability coverage, to the extent not covered in the Hull Policy alone.
Vessel Owner Pollution	Inclusive of OPA 90 and CERCLA to $1,000,000 Each	Pollution Insurance at least as broad as the policy form of the WQIS in effect at the time of the effective date of the Agreement, and providing insurance coverage for an against liability for pollution damages and pollution clean-up expenses as provided for under the Oil Pollution Act of 1990 (OPA 90), the Federal Water Pollution Control Act (Clean Water Act), the Comprehensive Environmental Response and Liability Act (CERCLA)

		obligations mandated by local and national laws, orders, rules and regulations and covering liability for damages to person or property, for clean up of, or for spills, contamination, pollution, by or from any polluting substance, whether escaping from any platform, pipeline, barge or vessel, resulting from, caused by or related to the management, operation, navigation or control of the vessel with minimum combined primary and excess limits in the amount of not less than $1,000,000.00. This coverage may be obtained by way of endorsement to the appropriate insurances above or by way of a standalone policy.
Umbrella/Excess Liability	$10,000,000 each occurrence limit	Must include terms at least as broad as the underlying policies above.

All policies will, to the fullest extent allowable by law, include a waiver of subrogation in favor of Company, its Affiliates, and each of their respective Representatives. All policies except Workers Compensation will (i) include Company, its Affiliates, and each of their respective Representatives as additional insureds (collectively, the "Company Insured Group"); and (ii) be primary and non-contributory with respect to any insurance or self-insurance maintained by Company. Any additional insured endorsement may be either specific to the Company Insured Group or "blanket" or "automatic" (i.e., addressing any person or entity), as required by contract. Contractor shall provide a copy of the additional insured endorsement to Company within 60 days of the date of execution of this Agreement and within 60 days of each policy renewal.

Contractor covenants and agrees to:

(A) maintain the insurance coverages and limits required hereby and any additional insurance and/or bonds required by law (i) at all times during the term of this Agreement and until completion of all Work associated with this Agreement, whichever is later; and (ii) with respect to any coverage maintained in a "claims-made" policy, for two (2) years following termination of this Agreement or completion of all Work associated with this Agreement, whichever is later; provided that, if a "claims-made" policy is maintained, the retroactive date must precede the date of commencement of Work under this Agreement;

(B) require each subcontractor who may perform Work under this Agreement or enter upon the Work site to maintain coverages, requirements, and limits at least as broad as those listed in this Exhibit B (including any Umbrella/Excess Liability requirements) from the time when the subcontractor begins Work, throughout the term of the subcontractor's Work and, with respect to any coverage maintained on a "claims-made" policy, for two (2) years following completion of subcontractor's Work;

(C) procure the required insurance from an insurance company eligible to do business in the state or states where Work will be performed and having and maintaining a Financial Strength Rating of "A-" or better and a Financial Size Category of "VII" or better, as rated in the A.M. Best Key Rating Guide for Property and Casualty Insurance Companies; provided, however, with respect to Workers' Compensation insurance, Contractor may procure such insurance from the state fund of the state where Work is to be performed; and

(D) deliver to Company certificates of insurance stating the types of insurance and policy limits, and further provide, or cause the issuing insurance company to provide, at least 30 days prior written notice to Company of any cancellation, non-renewal, reduction or material change in coverage, terms, or limits. Contractor shall deliver such certificates (i) prior to execution of this Agreement and prior to commencement of any Work; (ii) prior to expiration of any insurance policy required under this Agreement; and (iii) for any coverage maintained on a "claims-made" policy, for two (2) years following the termination of this Agreement or completion of all Work associated with this Agreement, whichever is later.

Company and Contractor further covenant and agree that (i) the failure of Company to demand such certificate of insurance or failure of Company to identify a deficiency therein will not be construed as a waiver of Contractor's obligation to maintain the insurance required under this Agreement; (ii) the insurance required under this Agreement does not represent that coverage and limits will necessarily be adequate to protect Contractor, nor be deemed as a limitation of Contractor's liability to Company in this Agreement; (iii) Contractor may meet the required insurance coverages and limits with any combination of primary and umbrella/excess liability insurance; and (iv) Contractor is solely responsible for any deductible or self-insured retention.

Client#: 84954 MORAENV

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 05/12/2011

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Irene Roberts	
Willis of Connecticut, LLC 185 Asylum Street 25th Floor Hartford, CT 06103-3708	PHONE (A/C, No, Ext): 860-756-7351	FAX (A/C, No): 860-756-7351
	E-MAIL ADDRESS: Irene.roberts@willis.com	
	INSURER(S) AFFORDING COVERAGE	NAIC #
	INSURER A : Nautilus Insurance Company	17370
INSURED Moran Environmental Recovery, LLC 75 D. York Ave Randolph, MA 02368	INSURER B : Starr Surplus Lines Insurance C	13604
	INSURER C : Great Divide Insurance Company	25224
	INSURER D : United States Fire Insurance Co	11690
	INSURER E :	
	INSURER F :	

COVERAGES CERTIFICATE NUMBER: REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	GENERAL LIABILITY			ECPO152728410	02/28/2011	02/28/2012	EACH OCCURRENCE	$1,000,000
	[X] COMMERCIAL GENERAL LIABILITY						DAMAGE TO RENTED PREMISES (Ea occurrence)	$100,000
	[ ] CLAIMS-MADE [X] OCCUR						MED EXP (Any one person)	$5,000
							PERSONAL & ADV INJURY	$1,000,000
							GENERAL AGGREGATE	$2,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						PRODUCTS - COMP/OP AGG	$2,000,000
	[ ] POLICY [ ] PRO-JECT [ ] LOC							$
C	AUTOMOBILE LIABILITY			BAP152728510	02/28/2011	02/28/2012	COMBINED SINGLE LIMIT (Ea accident)	$1,000,000
C	[X] ANY AUTO			MAA152728610	02/28/2011	02/28/2012	BODILY INJURY (Per person)	$
	[ ] ALL OWNED AUTOS [ ] SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	[X] HIRED AUTOS [X] NON-OWNED AUTOS						PROPERTY DAMAGE (Per accident)	$
	[X] MSC-90							$
B	[ ] UMBRELLA LIAB [X] OCCUR			SLSLXNV73013211	02/28/2011	02/28/2012	EACH OCCURRENCE	$15,000,000
	[X] EXCESS LIAB [ ] CLAIMS-MADE						AGGREGATE	$15,000,000
	[ ] DED [X] RETENTION $10000							$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N			WCA15278710	02/28/2011	02/28/2012	[X] WC STATU-TORY LIMITS [ ] OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? [N]	N/A		**USL&H INCLUDED**			E.L. EACH ACCIDENT	$1,000,000
	(Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$1,000,000
							E.L. DISEASE - POLICY LIMIT	$1,000,000
A	Contractors Poll-ution/Prof Liab			ECPO152728410	02/28/2011	02/28/2012	$1,000,000/$2,000,000 $50,000 Deductible	
D	Property			244195794	02/28/2011	02/28/2012	$10,825,008/Replacement	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Certificate holder is included as an additional insured with respects to general liability as required by written signed contract per the provisions of form ECP1004 and with respects to business automobile form#ENV2223; General liability is primary and non contributory as required by written and signed contract per the provisions of form ECP1004, Waiver of subrogation is granted in favor of the certificate holder atima as required by written for General Liability (form #ENV2004),Business Automobile(form #CA 0444)and (See Attached Descriptions)

CERTIFICATE HOLDER	CANCELLATION
NuStar Logistics, LP, its affiliates, and thier directors, officers, employees and borrowed servants P.O. Box 781609 San Antonio, TX 78278	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE

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DESCRIPTIONS (Continued from Page 1)

Workers Compensation(form #WC0003) (04/06). Business Automobile includes form CA 9948-attached. The Excess Liability follows form over the general liability; contractors pollution; professional liability; business automobile and workers compensations

-

Commercial Property includes: Buildings, Business Personal Property and Business Income including Extra Expense, EDP, Contractors' Equipment owned, leased, and/or rented usual to an environmental field operation / Amount of insurance; $10,825,008 w/$10,000 Deductible / Special Form / Replacement Basis

ENDORSEMENT

This endorsement forms a part of the policy to which it is attached. Please read it carefully.

ADDITIONAL INSURED – BLANKET

This endorsement modifies insurance provided under the following:

ENVIRONMENTAL COMBINED POLICY

In consideration of the premium charged and notwithstanding anything contained in this policy to the contrary, it is hereby agreed and understood that this endorsement shall apply only to the Coverage Part(s) corresponding with the box or boxes marked below.

☒ **COVERAGES A AND B – GENERAL LIABILITY**

☒ **COVERAGE D – CONTRACTORS POLLUTION LIABILITY**

SECTION III – WHO IS AN INSURED is amended to include as an insured, with respect to Coverage **A**, **B** and **D**, any person(s) or organization(s) when you and such person(s) or organization(s) have agreed in a written contract or written agreement that such person(s) or organization(s) be added as an additional insured on your policy. Such written contract or written agreement must be in effect prior to the performance of **your work** which is the subject of such written contract or written agreement.

Such additional insured status applies only:

1. Under **COVERAGE A BODILY INJURY AND PROPERTY DAMAGE LIABILITY** and **COVERAGE B PERSONAL AND ADVERTISING INJURY LIABILITY** for claims or **suits** resulting from:

   a. Your work **performed for such person(s) or organization(s) in the performance of your ongoing operations for the additional insured; or**

   b. **Your work** performed for such person(s) or organizations(s) and included in the **products-completed operations hazard.**

2. Under **COVERAGE D CONTRACTORS POLLUTION LIABILITY** for claims or **suits** arising out of **pollution conditions** that are the result of:

   a. Your work **performed for such person(s) or organization(s) in the performance of your ongoing operations for the additional insured; or**

   b. Your work **performed for such person(s) or organizations(s) and included in the** products-completed operations hazard.

With respect to damages caused by **your work**, as described above, the coverage provided hereunder shall be primary and not contributing with any other insurance available to those person(s) or organization(s) with which you have so agreed in a written contract or written agreement.

ALL OTHER TERMS AND CONDITIONS OF THE POLICY SHALL APPLY AND REMAIN UNCHANGED.

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ENDORSEMENT

This endorsement forms a part of the policy to which it is attached. Please read it carefully.

WAIVER OF SUBROGATION

It is agreed that the Company, in the event of any payment under this policy, waives its right of recovery against any Principal, but only at the specific written request of the Named Insured either before or after loss, wherein such waiver has been included before loss as part of a contractual undertaking by the Named Insured.

This waiver shall apply only with respect to losses occurring due to operations undertaken as per the specific contract existing between the Named Insured and such Principal and shall not be construed to be a waiver with respect to other operations of such Principal in which the Named Insured has no contractual interest.

No waiver of subrogation shall directly or indirectly apply to any employee, employees or agents of either the Named Insured or of the Principal, and the Company reserves its right or lien to be reimbursed from any recovery funds obtained by any injured employee.

This waiver does not apply in any jurisdiction or situation where such waiver is held to be illegal or against public policy or in any situation wherein the Principal against whom subrogation is to be waived is found to be solely negligent.

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ENDORSEMENT

This endorsement forms a part of the policy to which it is attached. Please read it carefully.

BUSINESS AUTO - ADDITIONAL INSURED WHEN REQUIRED BY CONTRACT OR AGREEMENT

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE FORM

Section II – Liability Coverage A. – Coverage, 1. Who is an Insured, is amended to add:

d. Any person or organization to whom you become obligated to include as an additional insured under this policy, as a result of any contract or agreement you enter into, excluding contracts or agreements for professional services, which requires you to furnish insurance to that person or organization of the type provided by this policy, but only with respect to liability arising out of your operations or premises owned by or rented to you. However, the insurance provided will not exceed the lesser of:

1. The coverage and/or limits of this policy; or

2. The coverage and/or limits required by said contract or agreement.

ALL OTHER TERMS AND CONDITIONS OF THE POLICY SHALL APPLY AND REMAIN UNCHANGED.

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POLICY NUMBER: BAP1527285-10

COMMERCIAL AUTO
CA 04 44 03 10

WAIVER OF TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US (WAIVER OF SUBROGATION)

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE FORM
BUSINESS AUTO PHYSICAL DAMAGE COVERAGE FORM
GARAGE COVERAGE FORM
MOTOR CARRIER COVERAGE FORM
TRUCKERS COVERAGE FORM

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by the endorsement.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Named Insured:	Moran Environmental Recovery, LLC
Endorsement Effective Date:	2011-02-28

SCHEDULE

Name(s) Of Person(s) Or Organization(s):
Any person or organization with whom you have entered into a written contract because of payments we make under this Coverage Form.
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

The **Transfer Of Rights Of Recovery Against Others To Us** Condition does not apply to the person(s) or organization(s) shown in the Schedule, but only to the extent that subrogation is waived prior to the "accident" or the "loss" under a contract with that person or organization.

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WCA 1527287 - 10 02/28/11 RNM 03/28/11

WORKERS COMPENSATION AND EMPLOYERS LIABILITY INSURANCE POLICY WC 00 03 13 (04-84)

WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule.

This agreement shall not operate directly or indirectly to benefit any one not named in the Schedule.

Schedule

Any Principal wherein such waiver has
been included before loss as part of a contractual
undertaking by the Named Insured.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

POLLUTION LIABILITY – BROADENED COVERAGE FOR COVERED AUTOS – BUSINESS AUTO, MOTOR CARRIER AND TRUCKERS COVERAGE FORMS

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE FORM
MOTOR CARRIER COVERAGE FORM
TRUCKERS COVERAGE FORM

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by the endorsement.

A. Liability Coverage is changed as follows:

1. Paragraph **a.** of the **Pollution** Exclusion applies only to liability assumed under a contract or agreement.
2. With respect to the coverage afforded by Paragraph **A.1.** above, Exclusion **B.6. Care, Custody Or Control** does not apply.

B. Changes In Definitions

For the purposes of this endorsement, Paragraph **D.** of the **Definitions** Section is replaced by the following:

D. "Covered pollution cost or expense" means any cost or expense arising out of:

1. Any request, demand, order or statutory or regulatory requirement that any "insured" or others test for, monitor, clean up, remove, contain, treat, detoxify or neutralize, or in any way respond to, or assess the effects of "pollutants"; or
2. Any claim or "suit" by or on behalf of a governmental authority for damages because of testing for, monitoring, cleaning up, removing, containing, treating, detoxifying or neutralizing, or in any way responding to or assessing the effects of "pollutants".

"Covered pollution cost or expense" does not include any cost or expense arising out of the actual, alleged or threatened discharge, dispersal, seepage, migration, release or escape of "pollutants":

a. Before the "pollutants" or any property in which the "pollutants" are contained are moved from the place where they are accepted by the "insured" for movement into or onto the covered "auto"; or

b. After the "pollutants" or any property in which the "pollutants" are contained are moved from the covered "auto" to the place where they are finally delivered, disposed of or abandoned by the "insured".

Paragraphs **a.** and **b.** above do not apply to "accidents" that occur away from premises owned by or rented to an "insured" with respect to "pollutants" not in or upon a covered "auto" if:

(1) The "pollutants" or any property in which the "pollutants" are contained are upset, overturned or damaged as a result of the maintenance or use of a covered "auto"; and

(2) The discharge, dispersal, seepage, migration, release or escape of the "pollutants" is caused directly by such upset, overturn or damage.

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Department of Transportation

Federal Motor Carrier Safety Administration

ENDORSEMENT FOR MOTOR CARRIER POLICIES OF INSURANCE FOR PUBLIC LIABILITY UNDER SECTIONS 29 AND 30 OF THE MOTOR CARRIER ACT OF 1980

Form Approved: OMB No.: 2125-0074

Issued to: Moran Environmental Recovery, LLC of 75D York Avenue, Randolph, MA 02368

Dated at Three Ravinia Drive, Atlanta, GA 30346 on 03/01/2011.

Amending Policy No.: BAP1527285-10 Effective Date: 03/01/2011

Name of Insurance Company: Great Divide Insurance Company

Countersigned by _____
Authorized Company Representative

The policy to which this endorsement is attached provides primary or excess insurance, as indicated by "☒," for the limits shown:

☒ This insurance is primary and the company shall not be liable for amounts in excess of $ 1,000,000 for each accident.

☐ This insurance is excess and the company shall not be liable for amounts in excess of $ _____ for each accident in excess of the underlying limit of $_____ for each accident.

Whenever required by the Federal Motor Carrier Safety Administration (FMCSA), the company agrees to furnish the FMCSA a duplicate of said policy and all its endorsements. The company also agrees, upon telephone request by an authorized representative of the FMCSA, to verify that the policy is in force as of a particular date. The telephone number to call is: 404-443-2040. Cancellation of this endorsement may be affected by the company or the insured by giving (1) thirty-five (35) days notice in writing to the other party (said 35 days notice to commence from the date the notice is mailed, proof of mailing shall be sufficient proof of notice), and (2) if the insured is subject to the FMCSA's jurisdiction, by providing thirty (30) days notice to the FMCSA (said 30 days notice to commence from the date the notice is received by the FMCSA at its office in Washington, D.C.).

DEFINITIONS AS USED IN THIS ENDORSEMENT

ACCIDENT includes continuous or repeated exposure to conditions which results in bodily injury, property damage, or environmental damage which the insured neither expected nor intended.
MOTOR VEHICLE means a land vehicle, machine, truck, tractor, trailer, or semitrailer propelled or drawn by mechanical power and used on a highway for transporting property, or any combination thereof.
BODILY INJURY means injury to the body, sickness or disease to any person, including death resulting from any of these.
ENVIRONMENTAL RESTORATION means restitution for the loss, damage, or destruction of natural resources arising out of the accidental discharge, dispersal, release or escape into or upon the land, atmosphere, watercourse, or body of water, of any commodity transported by a motor carrier. This shall include the cost of removal and the cost of necessary measures taken to minimize or mitigate damage to human health, the natural environment, fish, shellfish, and wildlife.
PROPERTY DAMAGE means damage to or loss of use of tangible property.
PUBLIC LIABILITY means liability for bodily injury or property damage.

The insurance policy to which this endorsement is attached provides automobile liability insurance and is amended to assure compliance by the insured, within the limits stated herein, as a motor carrier of property, with Sections 29 and 30 of the Motor Carrier Act of 1980 and the rules and regulations of the Federal Motor Carrier Safety Administration.

In consideration of the premium stated in the policy to which this endorsement is attached, the insurer (the company) agrees to pay, within the limits of liability described herein, any final judgement received against the insured for public liability resulting from negligence in the operation, maintenance or use of motor vehicles subject to financial responsibility requirements of Sections 29 and 30 of the Motor Carrier Act of 1980 regardless of whether or not each motor vehicle is specifically described in the policy and whether or not such negligence occurs on any route or in any territory authorized to be served by the insured or elsewhere. Such insurance as is afforded, for public liability, does not apply to injury to or death of the insured's employees while engaged in the course of their employment, or property transported by the insured, designated as cargo. It is understood and agreed that no condition, provision, stipulation or limitation contained in the policy, this endorsement, or any other endorsement thereon, or violation thereof, shall relieve the company from liability or from the payment of any final judgement, within the limits of liability herein described, irrespective of the financial condition, insolvency or bankruptcy of the insured.
However, all terms, conditions and limitations in the policy to which the endorsement is attached shall remain in full force and effect as binding between the insured and the company. The insured agrees to reimburse the company for any payment made by the company on account of any accident, claim, or suit involving a breach of the terms of the policy, and for any payment that the company would not have been obligated to make under the provisions of the policy except for the agreement contained in this endorsement.

It is further understood and agreed that, upon failure of the company to pay any final judgement recovered against the insured as provided herein, the judgement creditor may maintain an action in any court of competent jurisdiction against the company to compel such payment.

The limits of the company's liability for the amounts prescribed in this endorsement apply separately to each accident and any payment under the policy because of any one accident shall not operate to reduce the liability of the company for the payment of final judgements resulting from any other accident.

THE SCHEDULE OF LIMITS SHOWN BELOW DOES NOT PROVIDE COVERAGE.
The limits shown in the schedule are for information purposes only.

SCHEDULE OF LIMITS
Public Liability

Type of Carriage	Commodity Transported	Jan. 1, 1985
(1) For-hire (In interstate or foreign commerce, with a gross vehicle weight rating of 10,000 or more pounds).	Property (nonhazardous).	$750,000
(2) For-hire and Private (In interstate, foreign, or intrastate commerce, with a gross vehicle weight rating of 10,000 or more pounds).	Hazardous substances, as defined in 49 CFR 171.8, transported in cargo tanks, portable tanks, or hopper-type vehicles with capacities in excess of 3,500 water gallons; or in bulk Divisions 1.1, 1.2, and 1.3 materials, Division 2.3, Hazard Zone A or Division 6.1, Packing Group 1, Hazard Zone A material; in bulk Division 2.1 or 2.2; or highway route controlled quantities of a Class 7 material, as defined in 49 CFR 173.403.	$5,000,000
(3) For-hire and Private (In interstate or foreign commerce, in any quantity; or in intrastate commerce, in bulk only; with a gross vehicle weight rating of 10,000 or more pounds).	Oil listed in 49 CFR 172.101; hazardous waste, hazardous materials, and hazardous substances defined in 49 CFR 171.8 and listed in 49 CFR 172.101, but not mentioned in (2) above or (4) below.	$1,000,000
(4) For-hire and Private (In interstate or foreign commerce, with a gross vehicle weight rating of less than 10,000 pounds).	Any quantity of Division 1.1, 1.2 or 1.3 material; any quantity of a Division 2.3, Hazard Zone A, or Division 6.1, Packing Group 1, Hazard Zone A material; or highway route controlled quantities of a Class 7 material as defined in 49 CFR 173.403.	$5,000,000

SCHEDULE OF LIMITS
Public Liability

For-hire motor carriers of passengers operating in interstate or foreign commence

Vehicle Seating Capacity	Minimum Insurance
(1) Any vehicle with a seating capacity of 16 passengers or more.	$ 5,000,000
(2) Any vehicle with a seating capacity of 15 passengers or less.	1,500,000

Department of Transportation

Federal Motor Carrier Safety Administration

ENDORSEMENT FOR MOTOR CARRIER POLICIES OF INSURANCE FOR PUBLIC LIABILITY UNDER SECTIONS 29 AND 30 OF THE MOTOR CARRIER ACT OF 1980

Form Approved; OMB No.: 2125-0074

Issued to: Moran Environmental Recovery, LLC of 75D York Avenue, Randolph, MA 02368

Dated at Three Ravinia Drive, Atlanta, GA 30346 on 03/01/2011.

Amending Policy No.: MAA1527286-10 Effective Date: 03/01/2011

Name of Insurance Company: Great Divide Insurance Company

Countersigned by _____
Authorized Company Representative

The policy to which this endorsement is attached provides primary or excess insurance, as indicated by "☒," for the limits shown:

☒ This insurance is primary and the company shall not be liable for amounts in excess of $ 1,000,000 for each accident.

☐ This insurance is excess and the company shall not be liable for amounts in excess of $ _____ for each accident in excess of the underlying limit of $_____ for each accident.

Whenever required by the Federal Motor Carrier Safety Administration (FMCSA), the company agrees to furnish the FMCSA a duplicate of said policy and all its endorsements. The company also agrees, upon telephone request by an authorized representative of the FMCSA, to verify that the policy is in force as of a particular date. The telephone number to call is: 404-443-2040. Cancellation of this endorsement may be affected by the company or the insured by giving (1) thirty-five (35) days notice in writing to the other party (said 35 days notice to commence from the date the notice is mailed, proof of mailing shall be sufficient proof of notice), and (2) if the insured is subject to the FMCSA's jurisdiction, by providing thirty (30) days notice to the FMCSA (said 30 days notice to commence from the date the notice is received by the FMCSA at its office in Washington, D.C.).

DEFINITIONS AS USED IN THIS ENDORSEMENT

ACCIDENT includes continuous or repeated exposure to conditions which results in bodily injury, property damage, or environmental damage which the insured neither expected nor intended.

MOTOR VEHICLE means a land vehicle, machine, truck, tractor, trailer, or semitrailer propelled or drawn by mechanical power and used on a highway for transporting property, or any combination thereof.

BODILY INJURY means injury to the body, sickness or disease to any person, including death resulting from any of these.

ENVIRONMENTAL RESTORATION means restitution for the loss, damage, or destruction of natural resources arising out of the accidental discharge, dispersal, release or escape into or upon the land, atmosphere, watercourse, or body of water, of any commodity transported by a motor carrier. This shall include the cost of removal and the cost of necessary measures taken to minimize or mitigate damage to human health, the natural environment, fish, shellfish, and wildlife.

PROPERTY DAMAGE means damage to or loss of use of tangible property.

PUBLIC LIABILITY means liability for bodily injury or property damage.

The insurance policy to which this endorsement is attached provides automobile liability insurance and is amended to assure compliance by the insured, within the limits stated herein, as a motor carrier of property, with Sections 29 and 30 of the Motor Carrier Act of 1980 and the rules and regulations of the Federal Motor Carrier Safety Administration.

In consideration of the premium stated in the policy to which this endorsement is attached, the insurer (the company) agrees to pay, within the limits of liability described herein, any final judgement received against the insured for public liability resulting from negligence in the operation, maintenance or use of motor vehicles subject to financial responsibility requirements of Sections 29 and 30 of the Motor Carrier Act of 1980 regardless of whether or not each motor vehicle is specifically described in the policy and whether or not such negligence occurs on any route or in any territory authorized to be served by the insured or elsewhere. Such insurance as is afforded, for public liability, does not apply to injury to or death of the insured's employees while engaged in the course of their employment, or property transported by the insured, designated as cargo. It is understood and agreed that no condition, provision, stipulation or limitation contained in the policy, this endorsement, or any other endorsement thereon, or violation thereof, shall relieve the company from liability or from the payment of any final judgement, within the limits of liability herein described, irrespective of the financial condition, insolvency or bankruptcy of the insured.

However, all terms, conditions and limitations in the policy to which the endorsement is attached shall remain in full force and effect as binding between the insured and the company. The insured agrees to reimburse the company for any payment made by the company on account of any accident, claim, or suit involving a breach of the terms of the policy, and for any payment that the company would not have been obligated to make under the provisions of the policy except for the agreement contained in this endorsement.

It is further understood and agreed that, upon failure of the company to pay any final judgement recovered against the insured as provided herein, the judgement creditor may maintain an action in any court of competent jurisdiction against the company to compel such payment.

The limits of the company's liability for the amounts prescribed in this endorsement apply separately to each accident and any payment under the policy because of any one accident shall not operate to reduce the liability of the company for the payment of final judgements resulting from any other accident.

THE SCHEDULE OF LIMITS SHOWN BELOW DOES NOT PROVIDE COVERAGE.

The limits shown in the schedule are for information purposes only.

SCHEDULE OF LIMITS
Public Liability

Type of Carriage	Commodity Transported	Jan. 1, 1985
(1) For-hire (In interstate or foreign commerce, with a gross vehicle weight rating of 10,000 or more pounds).	Property (nonhazardous).	$750,000
(2) For-hire and Private (In interstate, foreign, or intrastate commerce, with a gross vehicle weight rating of 10,000 or more pounds).	Hazardous substances, as defined in 49 CFR 171.8, transported in cargo tanks, portable tanks, or hopper-type vehicles with capacities in excess of 3,500 water gallons; or in bulk Divisions 1.1, 1.2, and 1.3 materials, Division 2.3, Hazard Zone A or Division 6.1, Packing Group 1, Hazard Zone A material; in bulk Division 2.1 or 2.2; or highway route controlled quantities of a Class 7 material, as defined in 49 CFR 173.403.	$5,000,000
(3) For-hire and Private (In interstate or foreign commerce, in any quantity; or in intrastate commerce, in bulk only; with a gross vehicle weight rating of 10,000 or more pounds).	Oil listed in 49 CFR 172.101; hazardous waste, hazardous materials, and hazardous substances defined in 49 CFR 171.8 and listed in 49 CFR 172.101, but not mentioned in (2) above or (4) below.	$1,000,000
(4) For-hire and Private (In interstate or foreign commerce, with a gross vehicle weight rating of less than 10,000 pounds).	Any quantity of Division 1.1, 1.2 or 1.3 material; any quantity of a Division 2.3, Hazard Zone A, or Division 6.1, Packing Group 1, Hazard Zone A material; or highway route controlled quantities of a Class 7 material as defined in 49 CFR 173.403.	$5,000,000

SCHEDULE OF LIMITS
Public Liability

For-hire motor carriers of passengers operating in interstate or foreign commence

Vehicle Seating Capacity	Minimum Insurance
(1) Any vehicle with a seating capacity of 16 passengers or more.	$ 5,000,000
(2) Any vehicle with a seating capacity of 15 passengers or less.	1,500,000

Form Approved
OMB No. 2125-0074

ENDORSEMENT FOR MOTOR CARRIER POLICIES OF INSURANCE FOR PUBLIC LIABILITY UNDER SECTIONS 29 AND 30 OF THE MOTOR CARRIER ACT OF 1980

Issued to **Moran Environmental Recovery, LLC** of **75 D. York Avenue, Randolph, MA 02368**

Dated at **399 Park Avenue, 8th Floor, New York, NY** this **11th** day of **March** **2011**

Amending Policy No. **SLSLXNV73013211** Effective Date **February 28, 2011**

Name of Insurance Company **Starr Surplus Lines Insurance Company**

Telephone Number (**646**) **227-6559** Countersigned by Alex Pittigmano
Authorized Company Representative

The policy to which this endorsement is attached provides primary or excess insurance, as indicated by the "x", for the limits shown:

This insurance is primary and the company shall not be liable for amounts in excess of $ _____ for each accident.

➢ This insurance is excess and the company shall not be liable for amounts in excess of $ **4,000,000** for each accident in excess of the underlying limit of $ **1,000,000** for each accident.

Whenever required by the Federal Highway Administration (FHWA) or the Interstate Commerce Commission (ICC), the company agrees to furnish the FHWA or the ICC a duplicate of said policy and all its endorsements. The company also agrees, upon telephone request by an authorized representative of the FHWA or the ICC, to verify that the policy is in force as of a particular date. The telephone number to call is:

(**646**) **227-6559** .

Cancellation of this endorsement may be effected by the company or the insured by giving (1) thirty-five (35) days of notice in writing to the other party (said 35 days notice to commence from the date the notice is mailed, proof of mailing shall be sufficient proof of notice), and (2) if the insured is subject to the ICC's jurisdiction, by providing thirty (30) days notice to the ICC (said 30 days notice to commence from the date the notice is received by the ICC at its office in Washington, D.C.).

DEFINITIONS AS USED IN THIS ENDORSEMENT

ACCIDENT includes continuous or repeated exposure to conditions, which results in bodily injury, property damage, or environmental damage, which the insured neither expected nor intended.

MOTOR VEHICLE means a land vehicle, machine, truck, tractor, trailer, or semitrailer propelled or drawn by mechanical power and used on a highway for transporting property, or any combination thereof.

BODILY INJURY means injury to the body, sickness, or disease to any person, including death resulting from any of these.

ENVIRONMENTAL RESTORATION means restitution for the loss, damage, or destruction of natural resources arising out of the acci-dental discharge, dispersal, release or escape into or upon the land, atmosphere, watercourse, or body of water, of any commodity transported by a motor carrier. This shall include the cost of removal and the cost of necessary measures taken to minimize or mitigate damage to human health, the natural environment, fish, shellfish, and wildlife.

PROPERTY DAMAGE means damage to or loss of use of tangible property.

PUBLIC LIABILITY means liability for bodily injury, property damage, and environmental restoration.

The insurance policy to which this endorsement is attached provides automobile liability insurance and is amended to assure compliance by the insured, within the limits stated herein, as a motor carrier of property, with Sections 29 and 30 of the Motor Carrier Act of 1980 and the rules and regulations of the Federal Highway Administration (FHWA) and the Interstate Commerce Commission (ICC).

In consideration of the premium stated in the policy to which this endorsement is attached, the insurer (the company) agrees to pay, within the limits of liability described herein, any final judgement recovered against the insured for public liability resulting from negligence in the operation, maintenance or use of motor vehicles subject to the financial responsibility requirements of Sections 29 and 30 of the Motor Carrier Act of 1980 regardless of whether or not each motor vehicle is specifically described in the policy and whether or not such negligence occurs on any route or in any territory authorized to be served by the insured or elsewhere. Such insurance as is afforded, for public liability, does not apply to injury to or death of the insured's employees while engaged in the course of their employment, or property transported by the insured, designated as cargo. It is understood and agreed that no condition, provision, stipulation, or limitation contained in the policy, this endorsement, or any other endorsement thereon, or violation thereof, shall relieve the company from liability or from the payment of any final judgement, within the limits of liability herein described, irrespective of the financial condition, insolvency or bankruptcy of the insured. However, all terms, conditions, and limitations in the policy to which the endorsement is attached shall remain in full force and effect as binding between the insured and the company. The insured agrees to reimburse the company for any payment made by the company on account of any accident, claim, or suit involving a breach of the terms of the policy, and for any payment that the company would not have been obligated to make under the provisions of the policy except for the agreement contained in this endorsement.

It is further understood and agreed that, upon failure of the company to pay any final judgement recovered against the insured as provided herein, the judgement creditor may maintain an action in any court of competent jurisdiction against the company to compel such payment.

The limits of the company's liability for the amounts prescribed in this endorsement apply separately, to each accident, and any payment under the policy because of any one accident shall not operate to reduce the liability of the company for the payment of final judgements resulting from any other accident.

The Motor carrier Act of 1980 requires limits of financial responsibility according to type of carriage and commodity transported by the motor carrier. It is the MOTOR CARRIER'S obligation to obtain the required limits of financial responsibility.
THE SCHEDULE OF LIMITS SHOWN ON THE REVERSE SIDE DOES NOT PROVIDE COVERAGE.
The limits shown in the schedule are for information purposes only.

Form MCS-90 (OVER)

SCHEDULE OF LIMITS
Public Liability

	Type of Carriage	Commodity Transported	Minimum Insurance
(1)	For-hire (in interstate or foreign commerce).	Property (nonhazardous)	$ 750,000
(2)	For-hire and Private (in interstate, foreign, or intrastate commerce).	Hazardous substances transported in cargo tanks, or hopper-type vehicles with capacities in excess of 3,500 water gallons; or in bulk class A or B explosives, poison gas (Poison A), liquefied compressed gas, or compressed gas; or highway route controlled quantity radioactive materials.	5,000,000
(3)	For-hire and Private in interstate commerce: in any quantity) or (in intrastate commerce: in bulk only).	Oil listed in 49 CFR 172.101, hazardous waste, hazardous materials and hazardous substances defined in 49 CFR 171.8 and listed in 49 CFR 172.101, but not mentioned in (2) above or (4) below.	1,000,000
(4)	For-hire and Private (in interstate or foreign commerce).	Any quantity of Class A or B explosives, any quantity of poison gas (Poison A), or highway route controlled quantity radioactive materials.	5,000,000

Note: The type of carriage listed under (1), (2), and (3) apply to vehicles with a gross vehicle weight rating of 10,000 pounds or more. The type of carriage listed under number (4) applies to all vehicles with gross vehicle weight rating of less than 10,000 pounds.

SCHEDULE OF LIMITS
Public Liability

For-hire motor carriers of passengers operating in interstate or foreign commerce

Vehicle Seating Capacity	Minimum Insurance
(1) Any vehicle with a seating capacity of 16 passengers or more.	$ 5,000,000
(2) Any vehicle with a seating capacity of 15 passengers or less.	1,500,000

STANDBY EMERGENCY RESPONSE AGREEMENT

This Agreement is made this 2nd day of August, 2010, by and between Clean Harbors Environmental Services, Inc., a Massachusetts corporation, with offices located at 42 Longwater Drive Norwell, Massachusetts, 02061-9149, ("Contractor") and NuStar Logistics, L.P., a Delaware limited partnership, with its principal place of business at 2330 N. Loop 1604 West, San Antonio, TX 78248 ("Logistics").

RECITALS

A. Contractor owns, maintains and operates certain equipment for use in the containment, recovery and cleanup of oil spills, and Contractor has Personnel who are trained in oil spill response and who are proficient in the use of this equipment and who are available and have agreed o respond to oil spills in and about the locations described on EXHIBIT D hereto ("Customer Locations").

B. Logistics and certain of its Affiliates operate pipelines and terminals primarily for the transportation and storage of liquid products. Customer (as defined below) desires to contract with Contractor for (1) the standby availability of oil spill containment and cleanup services at Customer Locations and (2) the provision of such services at such Customer Locations. In addition, in order to expedite the process of Logistics and its Affiliates engaging Contractor to provide additional services at other locations ("New Locations"), Logistics and Contractor desire to agree in advance that the terms and conditions of this Agreement that will govern any such engagement of future locations.

C. Customer and Contractor agree on the terms and conditions set forth herein.

AGREEMENTS

ARTICLE I

Definitions

As used in this Agreement, the following terms shall have the following respective meanings:

"Adverse Weather" means weather conditions that make it difficult for response equipment and personnel to clean up and/or remove spilled oil as further defined in 40 CFR Part 112.

"Affiliate" shall mean the parent of a party to this Agreement and each entity of which such party or its parent owns directly or indirectly 50% or more of the ownership or partnership interest.

"Area of Interest" shall mean the geographical extent of real property on which a spill originating from a Facility within the Customer Locations owned or operated by Customer has occurred or migrated, to include public and private properties, beaches, harbors and waters along the waterfront and the coastal portions of the Customer Locations and all that territory within the jurisdiction of any relevant Captain of the Port at Customer Locations; provided that nothing herein shall preclude the parties from contracting or cooperating with persons or organizations in other geographic areas for the purposes set forth in the recitals above.

"Customer" means an entity that engages Contractor to perform Work pursuant to this Agreement, which entity may be Logistics or any Affiliate.

"Equipment" shall mean the equipment owned, leased on a regular basis, or otherwise regularly used by Contractor in order to make available the Services.

"Facility" shall mean any mobile or fixed, onshore or offshore building, structure, installation, equipment, pipe, or pipeline (other than a vessel or a public vessel) of Customer within the Area of Interest.

"Incident Commander" shall mean a qualified individual identified in the Facility Response Plan and designated by Customer to be the primary Customer representative in charge of overseeing oil spill containment and cleanup services. The Incident Commander may change during the duration of an incident response upon notification to Contractor.

"Law" means any and all applicable federal, state, and local codes, constitutions, decrees, directives, laws, licenses, ordinances, injunctions, orders, permits, regulations, requirements, rules, and statutes.

"Liabilities" means actions, claims, causes of action, costs, demands, damages, expenses, fines, lawsuits, liabilities, losses, obligations, and penalties including court costs, defense costs, and reasonable attorneys' fees.

"Oil" shall mean all substances included in the definition of "oil" in the Oil Pollution Act of 1990, and in Section 12-5-500 of the Official Code of Georgia Annotated (O.C.G.A. § 12-5-500), as such statutes may be amended or revised from time to time.

"OSRO" shall mean an approved Oil Spill Removal Organization as certified by the U.S. Coast Guard.

"Personnel" shall mean all individuals Contractor herein commits to make available to Customer to perform the Services and all individuals Contractor actually uses to perform the Services, including employees of any subcontractor utilized by Contractor as well as Contractor's own employees.

"Purchase Order" shall mean the document used by Company to engage Contractor to perform Services at New Locations or Work at Customer Locations or New Locations that shall

describe the Work, designate the time for performance, and state the compensation to be paid. Contractor may accept a Purchase Order to provide Services at New Locations in writing and Contractor must accept a Purchase Order for performance of the Work as further described in Article III.

"Representatives" means officers, directors, employees, and borrowed servants of the referenced entity and its affiliates.

"Services" shall mean the standby availability to complete and the actual completion of specific oil spill containment and cleanup services rendered by the Contractor as further described in Article III.

"Site" shall mean the site of any oil spill covered by this Agreement.

"Work" shall mean a written description of the specific scope of the work to be performed in response to an actual or threatened spill from a Facility as further described in Article III and attached to a Purchase Order.

ARTICLE II

Term; Termination

2.1 Term. The term of this Agreement shall begin on August 2, 2010 continue from year to year unless earlier terminated or extended pursuant to the terms of this Agreement. The term of this Agreement shall automatically be extended on an annual basis thereafter and any extensions may be terminated by either party upon ninety (90) days written notice to the other.

2.2. Effect of Termination. Upon termination of this Agreement, Contractor's obligation to provide Services as required hereunder, shall terminate and have no further force or effect. The remaining provisions of this Agreement, including Customer's obligation to pay fees and charges incurred pursuant to the terms of this Agreement prior to its termination, and the mutual indemnities provided for hereunder, shall survive the termination.

2.3. Suspension and Termination

2.3.1 Notice. Customer may suspend or terminate the performance of the Work, in whole or in part, upon notice to Contractor. In such notice, Customer will specify whether the suspension or termination is for all or part of the Work. If the suspension or termination is for part of the Work, Contractor will continue to perform that part of the Work that has not been suspended or terminated without interruption.

2.3.2 Reactivation. Customer may reactivate suspended Work by providing notice to Contractor. If Customer does not reactivate any Work that is suspended within 90 days of the date of the Customer's notice suspending the Work, such Work will be deemed to have been

terminated. The schedule for completing reactivated Work will be extended by the number of days of the suspension plus a reasonable amount of time for re-mobilization.

2.3.3 Breach. A party will be in default if it: (a) breaches this Agreement, and the breach is not cured within fifteen (15) days of notice from the non-defaulting party; (b) becomes insolvent (which means the failure to pay any obligations when due); or (c) files or has filed against it a petition in bankruptcy, for reorganization, or for appointment of a receiver or trustee. In the event of default, the non-defaulting party may, in addition to exercising any other rights at law or in equity, immediately terminate the Agreement or affected Work upon notice to the defaulting party. If Customer terminates this Agreement as a result of Contractor's default, Contractor will be liable to Customer, in addition to any other damages to which Customer may be entitled at law or in equity, for the difference between: the amount that would have been paid by Customer to Contractor to complete the Work but for the termination; and the actual amount paid by Customer to complete the Work.

ARTICLE III

Services

3.1. General. The Contractor shall provide to Customer oil spill cleanup and containment Services in the Area of Interest, using the Equipment, supplies and Personnel available as set forth below in accordance with Laws, including, but not limited to, 40 CFR 112. The Services shall be available on a twenty-four hour/seven day a week standby basis for threatened spills and shall include actual containment, recovery and cleanup in the event of a spill.

3.2. Initiation of Services. In the event of an actual or threatened spill from a Facility, and if Customer desires Services with respect to such spill, Customer may notify the Contractor orally of such actual or threatened spill (the "Designated Spill") by a direct telephone call to Contractor's contact number, which is 1-800-oil-tank. Such notification shall include company name, the name and title of the caller, the estimated location of the Site requiring emergency oil containment and cleanup services, the type of oil involved, if known, the estimated size of the Designated Spill, if known, whether the Designated Spill is on land or in water, the identity of and contact information for the Incident Commander with whom Contractor is to coordinate until notified otherwise, and any other relevant information relating to the Designated Spill then known to the caller.

Customer agrees to use reasonable efforts to confirm in writing all oral notifications within twenty-four (24) hours of giving such oral notice, by providing Contractor with a written description of the scope of the Work to be performed. Said written confirmation and description attached to a Purchase Order may be sent to Contractor by overnight delivery facsimile transmission to Contractor's telecopier number, which is 781-792-5903. In the event of a conflict between the terms of such written description attached to a Purchase Order and this Agreement, the terms of this Agreement shall prevail.

3.3. Mobilization Standby. Customer may limit its response initiation to a notice of "mobilization standby." If Customer so limits its initiation, Contractor shall bring its Personnel and equipment to a high state of readiness but shall not dispatch equipment or Personnel to the Site until Customer thereafter gives express verbal instruction to Contractor to respond to the Designated Spill. For the period of time Contractor is on mobilization standby, Customer shall pay Contractor at the straight time rate or the overtime rate (as described on EXHIBIT C hereto), as appropriate, a minimum of four (4) hours for each person standing-by.

3.4. Scope of Spill Response. Customer acknowledges that spill response services provided by Contractor under this Agreement are provided to the maximum extent practicable in response to an emergency; that the purpose of each spill response is to ensure the safety of the Facility and to mitigate or prevent, to the maximum extent practicable, the environmental damage and health and safety risks resulting from a spill of oil; that it may not ultimately be possible to fully remove all such substances from the Site or other affected areas. Contractor does not warrant, by the terms of this Agreement or by undertaking spill response services pursuant to this Agreement, that such response will render the Site, or areas affected by the spill, safe for any human activity or in a state of compliance with any Laws. However, nothing stated in this subsection shall diminish or relieve Contractor from fully complying with the provisions and obligations set forth in this Agreement.

Contractor will respond as soon as practicable after receiving oral notification of such a Designated Spill. Following the initial response and deployment, Contractor will continue to marshal the necessary equipment and Personnel and proceed to the Site or such other effected area as quickly as reasonably possible and in accordance with the Law and the Facility Response Plan.

3.5 Equipment. Contractor shall make available to Customer, as, when and where requested, as outlined above, oil spill containment and recovery and related types of equipment of the types, makes and/or models, having the capacity ratings, and in the minimum quantities as necessary to perform the oil spill response services in response to an emergency as required by the relevant Facility Response Plan in a timely and professional manner. A list of the minimum equipment that will be available is set forth in EXHIBIT A attached hereto.

All equipment furnished by Contractor shall be designed so as to operate effectively in Adverse Weather and under such other conditions as may reasonably be expected to be encountered in the area in which it is to be used.

Such equipment shall be stored at a location, or locations, sufficiently near to the facilities at which it might be utilized so as to enable the mobilization, travel and response times stipulated in the relevant Facility Response Plan to be met. Contractor shall keep a daily listing of all equipment and supplies brought to the site of the cleanup efforts, and shall detail all supplies used on the site daily.

Contractor shall maintain all equipment in good working order at all times and shall test equipment periodically for serviceability. Following any use of the equipment for spill response services, training, inspection or other lawful purpose, Contractor shall promptly perform any necessary cleaning, replacement or repair of such equipment.

Contractor shall maintain proper licensing of its equipment to the extent said equipment is required to be licensed by applicable Laws.

Contractor acknowledges that the Coast Guard, Environmental Protection Agency or other relevant governmental authorities with jurisdiction ("Governmental On-Scene Coordinator") may from time to time require access to Contractor's equipment and inventory to verify its condition and availability.

3.6 Personnel. Contractor shall make available to Customer as, when and where required, trained and qualified response teams, in sufficient numbers and having the necessary skills and experience necessary to perform the oil spill response services in response to an emergency as required by the relevant Facility Response Plan in a timely and professional manner.

Contractor shall have Personnel on call on a twenty-four (24) hour basis. These Personnel will be based or stationed at locations sufficiently near to the Facilities at which they might be utilized so as to enable the mobilization, travel and response times stipulated in the relevant Facility Response Plan to be met. Contractor shall keep a daily log of all Personnel working on the Site or such other effected areas and shall detail the position held and hours worked by each individual.

Contractor agrees that it will maintain and that it will require its subcontractors to maintain a drug-free and alcohol-free workplace, and Contractor agrees to implement an appropriate testing program of its Personnel to ensure that such a workplace is maintained. In the event Services are provided, Contractor agrees to remove from the Site any of Contractor's Personnel upon the request of the Incident Commander.

Contractor shall maintain proper licensing of its Personnel to the extent said Personnel are required to be licensed by applicable Laws.

3.7 Priority. In the event of an oil spill at a Facility, Contractor shall accord to Customer a priority response compared to parties with whom Contractor has no stand-by contract, except to the extent if Contractor would be required to remove equipment and Personnel from the site of another response to in order to respond to a Designated Spill of Customer. In the event Contractor receives notification of the need for oil spill response services from more than one party with whom Contractor has entered into a stand-by agreement similar to this Agreement, then Contractor shall accord priority to party first notifying Contractor pursuant to Section 3.2. Customer acknowledges that Contractor may be otherwise directed by a responsible governmental authority exercising lawful authority to use its response Personnel, equipment and material in connection with other oil spills. In such event the priority provisions

of this Section 3.7 shall have no effect to the extent said provisions are inconsistent with such directions of such responsible governmental authority.

3.8 Contractor Coordination. Customer acknowledges that Contractor may have entered into arrangements with subcontractors, other emergency oil spill response contractors, response networks and/or oil spill cooperatives as may be necessary in order to enable Contractor to perform its obligations under this Agreement. Fee schedules for subcontractor services shall be provided and approved by the Customer prior to mobilization for a specific emergency response. Contractor will be responsible for the acts and omissions of its Personnel and its subcontractors, and its other emergency oil spill response contractors, in the same capacity as it is responsible for its own acts and omissions.

Contractor acknowledges that Customer may have also entered into arrangements with other emergency oil spill response contractors, response networks, oil spill cooperatives and/or subcontractors as may be necessary to ensure compliance with each Facility Response Plan. Contractor further acknowledges that unless otherwise dictated by the Governmental On-Scene Coordinator for the relevant incident, Customer will coordinate all activities of any and all oil spill response organizations that have responded to the incident, the regulatory authorities and agencies, any and all other persons, organizations, agencies or entities that may be involved in the emergency response efforts. The parties acknowledge that the provisions of this Agreement in no way require Customer to utilize the services of Contractor in the event of an oil spill in the Area of Interest.

3.9 Incident Commander. All Services provided by Contractor and its Personnel shall be performed under the direction and control of Customer's Incident Commander. Customer will notify Contractor of the identity of and provide contact information for the Incident Commander. The Incident Commander may change as the incident progresses. Customer will designate a new Incident Commander as needed and inform Contractor of the change. Contractor shall not engage the active services of any subcontractor without first obtaining the approval of the Customer's Incident Commander. Upon being directed by Customer's Incident Commander, Contractor and/or any or all subcontractors shall cease all cleanup operations, unless Contractor is otherwise directed by a responsible governmental authority exercising lawful authority.

3.10 Contingency Plans. Customer may identify the Contractor in oil spill cleanup contingency plans filed by Contractor with the United States Coast Guard or any other similar governmental authority as being available to provide oil spill assistance to Customer. Customer has furnished Contractor a paper or electronic copy of the Facility Response Plan for each Facility covered by this Agreement. Contractor has reviewed each Facility Response Plan and represents and warrants that based on standby agreements with subcontractors and other entities, it has the equipment, Personnel, expertise and capability to fulfill the Plan's requirements as they relate to Contractor. Contractor will use its best efforts to provide said services in accordance with each plan and otherwise as provided herein. Customer will inform Contractor of all material changes or amendments to each of the Facility Response Plans to the extent such would affect the ability of Contractor to perform oil spill response services in response to an emergency.

ARTICLE IV

Contractor Obligations

4.1 General. Contractor shall furnish all Personnel, supervision, labor, materials, tools, equipment and subcontracted items necessary for the performance and completion of Contractor's services hereunder at the rates set forth in the schedule of fees attached hereto as EXHIBIT C. Said schedule of fees is subject to revision (annually or more frequently as the case may be), upon thirty (30) days written notice provided, however, that no change in such fees will become effective for any Designated Spill where Contractor's response to said spill commenced prior to any such notification of a change in fees.

4.2 Trained Personnel. Contractor warrants that all Personnel it provides under the terms of this Agreement shall at all times be trained and qualified to perform the required oil spill response services in response to an emergency in accordance with industry standards and all applicable federal, state and/or local regulations or requirements for oil spill or hazardous substance emergency response. Contractor will maintain a minimum of thirty (30) trained responders based or stationed at locations sufficiently near to the Facilities at which they might be utilized that have a minimum of twenty-four (24) hours of OSHA Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) training.

When requested Contractor shall participate in, and shall cause its Personnel to participate in, Customer's sponsored training programs, exercises and periodic unannounced drills, provided Customer agrees to compensate Contractor for the cost of labor, for the cost of returning the equipment to serviceability, and for the reasonable rent of such equipment, as provided in the schedule of fees.

Contractor shall not charge Customer for desktop drills (up to a maximum of two (2) per year) conducted by Contractor for the benefit of Customer, so long as each such desktop drill lasts no more than one day and involves the participation of no more than two individuals.

4.3 Contractor Taxes. At all times Contractor shall be responsible for, any and all taxes assessed against Contractor by any taxing authority relating to the performance by Contractor of its services hereunder, including, without limitation, any taxes associated with income earned by Contractor's Personnel.

4.4 Contractor Employee Safety. Contractor shall take all necessary precautions to ensure the safety of its Personnel and shall comply with all applicable Laws including those pertaining to health and safety. Contractor agrees to abide by Customer's policies concerning Personnel health and safety at all times when Contractor Personnel are present at any Customer Facility

Contractor shall erect and properly maintain at all times and as required by the oil spill response services being performed, all necessary and appropriate safeguards for the protection of Contractor's Personnel. Contractor shall have no responsibility for the elimination or abatement

of safety hazards at a Facility spill site created by or otherwise related to services performed by another contractor engaged by Customer or by Customer's employees or agents. Customer agrees to require any such other contractors and its employees and agents to adhere fully to all applicable Laws and to comply with all reasonable requests and directions of Contractor for the elimination or abatement of any such safety hazards.

4.5 Contractor Records. Contractor shall keep complete and accurate records detailing Contractor's conformance to its obligations under this Agreement, including, without limitation, health and safety records, exercise and drill records, and equipment and supply inventories for a period of three (3) years, or until one (1) year beyond the term of this Agreement as extended, whichever period is shorter, or for any such longer period as may be required by Law or for such longer periods if said records are required for use in any pending arbitration and/or litigation at the expiration of said term. Additionally, equipment maintenance and usage records shall be maintained for the term of this Agreement, or for longer periods as required by Law, or any pending arbitration and/or litigation at the expiration of said term. In the event Contractor performs Services under this Agreement, Customer shall have the right to audit, at its own expense, upon giving reasonable notice to Contractor, the records of Contractor as they pertain to Contractor's obligations under this Agreement and charges billed to Customer. The parties agree that any such audit shall occur at a time mutually convenient to the parties.

4.6 Contractor Licenses/Permits. Contractor shall acquire and maintain any and all required government or agency licenses, permits, authorizations, certifications and/or approvals as may be necessary to perform emergency oil spill response services.

4.7 Customer Owned Equipment. Any and all equipment including, but not limited to individual personal protective equipment, issued to Contractor and/or Contractor's Personnel by Customer during the course of any emergency oil spill response is to be returned to Customer upon completion of the project or termination of Contractor's services, whichever occurs first. A detailed listing of all such equipment issued to Contractor will be maintained by Customer. The cost of any item(s) which are not timely returned to Customer by Contractor will be charged to Contractor. This return requirement shall not apply to any disposable items utilized by Contractor while performing the Work, to the extent such items are no longer serviceable. The provisions of this Section 4.7 do not obligate Customer to provide Contractor any equipment in conjunction with Contractor's performance of Work pursuant to this Agreement.

4.8 Other Contractor Representations. Contractor represents that: (i) Contractor is financially solvent, able to pay all debts as they mature, and possesses sufficient working capital to perform its obligations under any Work it accepts; (ii) Contractor's acceptance and performance of Work has been duly authorized; (iii) Work accepted by Contractor constitutes a legal, valid, and binding obligation of Contractor and is enforceable in accordance with its terms against Contractor (except as the enforceability hereof may be limited by bankruptcy, insolvency, reorganization or other similar laws); (iv) Contractor has the capability (including the supervision and labor) and experience necessary to perform the Services specified in this Agreement and the Work it accepts; (v) Contractor has independently evaluated the labor, supervision, services, material, equipment, permits, and authorizations necessary to perform the Services; and (vi)

Contractor will comply with Law in the performance of the Services, including environmental regulations, and other Laws that must be taken into account when performing the Services.

ARTICLE V

Fees and Charges

5.1 Fees for Services. As compensation for any non-emergency services rendered hereunder, Customer shall pay to the Contractor any undisputed invoices within thirty (30) days after receipt for the amounts set forth in EXHIBIT C for equipment, Personnel, and supplies, as provided in Section 4.1 above. As noted above, Contractor may revise such rates, upon giving at least thirty (30) days prior written notice to Customer of any such revision. Billing and payment for oil spill response services rendered to Customer by Contractor and any of its subcontractors shall be governed by the provisions of Sections 5.2 and 5.3 below, provided however that neither Contractor nor its subcontractors may raise their tariff rates as specified in EXHIBIT B and EXHIBIT C once they have commenced rendering Services at a Site until the Work is completed, unless thirty (30) days written notice of such an increase was given prior to Contractor being notified pursuant to Section 3.2. However, in the event Services at a Site are performed by Contractor for at least six (6) months, the tariff rates for Contractor and its subcontractors may be adjusted upwards upon thirty (30) days notice to Customer.

5.2 Major Spill Response Billing. In the event of an oil spill that requires the use of subcontractors, including tugboat companies, Contractor may submit field work sheets on a daily basis to Customer which itemize all charges incurred by Contractor or its subcontractor(s) for each such twenty-four (24) hour period. Upon receipt of such field work sheets, and officer of Customer shall guarantee payment of ninety percent (90%) of such charges, allowing ten percent (10%) retainage for final invoice review, and shall make payment of such amounts as quickly as practically possible under the circumstances, which shall at the most be within ten (10) days of delivery of each such twenty-four (24) hour period's field work sheets. Such amounts not timely paid within ten (10) days shall accrue interest at the rate of the then-existing prime rate plus eighteen percent (18%) per annum, or the maximum permissible under Law, whichever is lesser.

Thereafter, Contractor shall submit itemized bills, setting forth in detail all charges incurred, at the end of each two-week period during which oil spill response services are being performed under this Agreement. Customer shall make payment of all remaining charges legitimately owed Contractor pursuant to the provisions of this Agreement, including withheld retainage, within thirty (30) days of the receipt by Customer of such itemized bills.

Contractor shall exercise good faith efforts to use the lowest cost available qualified subcontractors, and shall use subcontractors only when the requirements of the Work surpass the resources of Contractor.

5.3 Other Oil Spill Response Billing. In responding to oil spills under this Agreement that only require the resources of Contractor, Contractor shall submit itemized bills setting forth

in detail all charges (based on the EXHIBIT C fee schedule) to Customer at the end of a five day period, during which oil spill response services are being performed under this Agreement, or upon completion of each separate project, whichever occurs earlier in time. Customer shall make payment of all legitimate charges therein, which are authorized pursuant to the provisions of this Agreement, within thirty (30) days of receipt of such itemized bill.

5.4 Financial Responsibility. Customer hereby represents and warrants that it has sufficient funds to pay the fees as described above, and that it is capable of meeting the financial obligations arising from the indemnification set forth in Article VIII.

ARTICLE VI

Minimum Insurance Requirements

With respect to Contractor's performance under the Agreement, and in addition to Contractor's obligations of indemnification thereunder, Contractor shall, at its sole cost and expense, obtain and maintain insurance policies set out in EXHIBIT E attached hereto.

ARTICLE VII

Independent Cleanup Operations

7.1 Use of Independent Contractors. Nothing in this Agreement shall be construed as requiring Customer to request the Services or request the use of the Equipment or supplies of the Contractor in connection with oil spill cleanup or containment activities, and Customer may, if it so desires, purchase or contract for its own cleanup equipment and materials, or engage any other entity to assist it with the cleanup of spills. In addition, Customer may employ its own or other equipment, materials, supplies and employees and/or contractors in conjunction with those provided by the Contractor.

7.2 Disposal of Waste. Customer shall be solely responsible for the disposal, including but not limited to selection of the site for disposal and the means of transportation to the site, of all substances collected by the Contractor or other individuals during any cleanup of a Designated Spill, including but not limited to all oil, oil refuse, oily debris, oil absorbent, dispersant, and any other waste materials, whether or not such materials are considered dangerous or hazardous. Customer shall be solely responsible for obtaining any permits required by the federal or state government prior to such disposal.

ARTICLE VIII

Indemnification

8.1 Indemnity. ***To the maximum extent permitted by applicable Laws, Contractor will release, indemnify, defend, and hold harmless Customer, its Affiliates, and its and their Representatives (collectively, the "Indemnified Parties") from and against any and all Liabilities arising out of the Work in connection with: (a) the breach by Contractor of this Agreement; (b) injuries and death to people; (c) damage to property; and (d) violation of Laws. Contractor intends the foregoing release, indemnity, defense, and hold harmless obligations to apply to the extent that the Liabilities were caused by the negligent acts or omissions or willful misconduct of the Contractor. Contractor intends the foregoing release, indemnity, defense, and hold harmless obligations to survive the completion of any Work, and the termination of this Agreement.***

8.2 Notwithstanding anything to the contrary herein, it is understood and agreed by the parties that Contractor will at all times under this Agreement retain any exemption or limitation from liability ("Responder Immunity") pursuant to the Federal Water Pollution Control Act, as amended (FWPCA) 33 U.S.C.A. § 1251 et seq., the Oil Pollution Act of 1990, as amended (OPA-90) 33 U.S.C.A. § 2701 et seq., and any other applicable Federal, state or local law, regulation or ordinance which provides such responder immunity. Operation of such immunity shall be suspended if Contractor is negligent or engages in willful misconduct.

8.3 Defense. If a Liability arises which Contractor is required to defend the Indemnified Parties under this Agreement, Contractor shall provide outside counsel reasonably acceptable to Customer for said defense within ten (10) days of Customer's notice to Contractor requesting defense. If Contractor fails to provide such counsel within this time period, then the Indemnified Parties may appoint their own outside counsel at Contractor's expense for said defense until Contractor provides such counsel.

8.4 Upon submission of a final statement or invoice for each project completed hereunder, Contractor shall warrant that there are no amounts owed by it or by any of its subcontractors if any that could become the basis for a Materialman's lien under relevant Law against Customer's property. In consideration of the final payment made in full for such amounts legitimately owed to Contractor for any project or deployment drill completed under this Agreement, Contractor agrees to defend, indemnify and hold harmless Customer against any such Materialman's liens arising out of or in any way connected with or resulting from Contractor's or any of its subcontractor's non-payment or disputed payments, for services rendered hereunder.

ARTICLE IX

Miscellaneous

9.1 Press Releases. All information provided to the press shall be the responsibility of Customer. Should it be necessary for the Contractor to respond to the press also, statements by

the Contractor will indicate that Services are being performed on behalf of Customer, will describe the Services being performed and the role of the Contractor and will direct all further inquiries to Customer.

9.2 Notices. Except for initial oral or telephone notification of a Designated Spill described in Section 3.2, any notice provided for by this Agreement and any other notice, demand or communication that any party may wish to send to the other in connection with this Agreement shall be in writing and either delivered in person, sent via a nationally recognized express mail service, sent via facsimile transmission with receipt confirmed or sent by registered or certified U.S. mail, first class postage prepaid, return receipt requested, and addressed as follows:

Notice provided to Customer shall be provided to the Incident Commander identified to Customer as per Section 3.2 above,

With a Copy to:

Attn: Director, Procurement
2330 N. Loop 1604 W.
San Antonio, Texas 78248
Fax: (210) 918-5495

With a copy to:

Attn: General Counsel
2330 N. Loop 1604 W.
San Antonio, Texas 78248
Fax: (210) 918-5500

Notice to Contractor:

Clean Harbors Environmental Services, Inc.
42 Longwater Drive
Norwell , Massachusetts 02061-9149
Attn: General Counsel (Urgent Contract Matter)

9.3 Governing Law, Interpretation. This Agreement will be governed and construed in accordance with the laws of the State of Texas, without reference to the choice of law principles thereof. Any disputes arising out of this Agreement will be subject to the exclusive jurisdiction of the U.S. District Court located in the Harris County, Texas if federal jurisdiction is available and to the courts of the State of Texas located in the Harris County, Texas if federal jurisdiction is not available. Customer and Contractor irrevocably waive any right to a trial by jury in connection with any disputes arising out of this Agreement.

9.4 Amendments. This Agreement and the Exhibits thereto constitute the entire agreement between the parties and supersedes any and all prior agreements. The Agreement may only be amended, modified, supplemented or altered in writing signed by the parties.

9.5 Assignments. This Agreement and any rights or duties hereunder shall not be assigned by either party without the express written consent of the other, except as provided below. The following assignments shall be permitted: (a) a transfer by a party of its interest to an Affiliate of such party; or (b) a corporate reorganization of a party, by merger or otherwise; provided in each case the assignee assumes in writing all obligations under this Agreement from such transferring or reorganized party. Any attempted assignment in violation of this Section 9.5 shall be null and void.

9.6 Binding on Successors. This Agreement shall be binding upon, and shall inure to the benefit of, the parties and their respective successors and permitted assigns.

9.7 Attorney's Fees. If any arbitration is commenced by the parties arising out of this Agreement, the prevailing party shall be entitled to recover a reasonable allowance for attorneys' fees and expenses, to be determined by the arbitrators.

9.8 Waiver. No waiver by either party of any provision or condition of this Agreement shall be construed or deemed to be a waiver by such party of any other provision or condition of this Agreement or a waiver of any subsequent breach of the same provision or condition, unless such waiver is specifically expressed in writing, signed by the waiving party.

9.9 Severability. If any provision of this Agreement or portion thereof is declared invalid for any reason, the invalid provisions or portion thereof shall be deemed omitted and the remaining terms shall nevertheless be carried into effect.

[signature page to follow]

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

NuStar Logistics, L.P.
By: NuStar GP, Inc., its general partner

VP Sourcing
NuStar Logistics L.P.

Clean Harbors Environmental Services, Inc.

William F. Connors
Senior Vice President
8/30/2010

EXHIBIT A

OSRO Equipment List

CleanHarbors
ENVIRONMENTAL SERVICES®

Site Services National Emergency Response Rates / NuStar Energy Terminals L.P.
Equipment

Earth Moving Equipment	UoM	Price
Backhoe Loader, 1 Yard Bucket	HR	$79.00
Fork Attachment for Bobcat Loader	DAY	$58.00
Bobcat Loader/Mini Excavator	HR	$74.00
Sweeper Attachment for Bobcat Loader	DAY	$142.00
Bulldozer 6-13 ton	DAY	$680.00
Excavator	HR	$100.00
Loader, 3 Yard Bucket	HR	$77.00
Electric Power Tools		
1/2in Drill, Electric	DAY	$43.00
Circular Saw, Electric	DAY	$60.00
Mercury Vacuum	DAY	$206.00
Reciprocating Saw (Sawzall), Electric	DAY	$79.00
Wet Vacuum (Shop Vac)	DAY	$43.00
Field Analytical		
4 Gas/5 Gas Meter	DAY	$178.00
Bailer & Sampling Equipment	DAY	$60.00
Draeger Air Monitoring Pump	DAY	$79.00
Explosion/Oxygen Meter	DAY	$126.00
Geiger Counter Meter	DAY	$157.00
Geoprobe	DAY	$228.00
Hydrogen Cyanide Meter	DAY	$130.00
Hydrostatic Tester	DAY	$115.00
Interface Probe	DAY	$126.00
Lumex RA915+ Mercury Vapor Analyzer	DAY	$513.00
Mercury Vapor Analyzer	DAY	$262.00
Particulate Meter, Mini Ram or equivalent	DAY	$126.00
Personal Air Pump Meter	DAY	$60.00
pH Meter	DAY	$60.00
PID Meter	DAY	$126.00
Well Purging/Sampling Pump	DAY	$60.00
Gas Powered Tools		
Brush Cutter/Power Broom	DAY	$122.00
Chain Saw	DAY	$122.00
Cutoff Saw (Demo)	DAY	$131.00
Light Duty Truck/Response Equipment		
Emergency Response Van	HR	$79.00
Pickup/Van/Car/Crew Cab	HR	$21.00
Spill Trailer	DAY	$195.00
Stake Body/Utility Truck	HR	$37.00
Utility Drum Trailer/Boom Trailer	DAY	$195.00

CleanHarbors
ENVIRONMENTAL SERVICES

Site Services National Emergency Response Rates / NuStar Energy Terminals L.P.

Equipment

Heavy Duty Trucks	UoM	Price
Box Truck, 10 Wheel	HR	$64.00
Box Truck (6 Wheel)	HR	$64.00
Heavy Duty Liftgate Truck	HR	$68.00
Dump Truck, 10 Wheel	HR	$80.00
Tractor Only, No Trailer	HR	$60.00
Tractor w/Box Van	HR	$80.00
Tractor w/Flatbed/Lowbed	HR	$82.00
Tractor w/Dump Trailer	HR	$85.00
Tractor w/Rolloff Trailer	HR	$82.00
High Powered Vacuum Truck/Cusco	HR	$135.00
Skid Mounted Vacuum System	HR	$63.00
5800cfm Air Mover/Guzzler	HR	$135.00
Tractor w/Liquid Transporter	HR	$87.00
Vactor w/Cyclone	HR	$150.00
Vactor w/HEPA Filter	HR	$144.00
Vactor w/High Rail	HR	$168.00
Tractor w/Vacuum Trailer	HR	$93.00
Vacuum Truck, Straight	HR	$75.00

**** Decontamination of Vacuumed Trucks, Vactors, Cuscos, Trailers, etc. not included**
Some may require personnel entry, some may be deconned at a local truck wash.

Hoses/Pipe		
2in Cross Link Poly Chem Hose, 25ft	DAY	$37.00
3in Cross Link Poly Chem Hose, 25 ft	DAY	$51.00
4in Cross Link Poly Chem Hose, 25ft	DAY	$67.00
4in Flex Hose	FT	$2.75
6in Flex Hose	FT	$3.50
4in Lay Flat Hose, 25ft	DAY	$60.00
6in Lay Flat Hose, 25ft	DAY	$79.00
2in Oil Suction Hose, 25ft	DAY	$31.00
3in Oil Suction Hose, 25ft	DAY	$42.00
4in Oil Suction Hose, 25ft	DAY	$60.00
6in Oil Suction Hose, 25ft	DAY	$87.00
Wash Hose, 1/2in x 50ft	DAY	$17.00

Pneumatic Power Tools		
3/4in Drill, Rotary Hammer	DAY	$91.00
Jackhammer, 40Lb	DAY	$65.00
Jackhammer, 60Lb	DAY	$82.00
Jackhammer, 90Lb	DAY	$98.00
Pneumatic Chipping Gun	DAY	$105.00
Steel Nibbler, Pneumatic	DAY	$131.00

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Site Services National Emergency Response Rates / NuStar Energy Terminals L.P.
Equipment

Marine Response Equipment	UoM	Price
Power Workboat, 12-14ft	DAY	$298.00
Power Workboat, 15-17ft	DAY	$356.00
Power Workboat, 17-22ft	DAY	$596.00
Power Workboat, 23-30ft	DAY	$654.00
Power Workboat, 23ft-30ft, Twin Engine	DAY	$857.00
Power Barge Boat, 26ft-30ft, Twin Engine	DAY	$925.00
Boat/Workskiff without Motor	DAY	$142.00
OSRV (Marco/JBF or Equivalent) 28-30ft	DAY	$5,475.00
Rigid Hull Inflatable (RIB) (18ft-22ft)	DAY	$785.00
Landing Craft (LCM) (26ft-28ft) Twin Engine	DAY	$850.00
Underwater ROV	DAY	$1,255.00
10 inch Swamp Boom per foot per day	FT	$1.78
18in Containment Boom per Foot per Day	FT	$1.99
24in Containment Boom per Day	FT	$2.57
36in Containment Boom per Day	FT	$2.88
Drum Skimmer (24in-36in)	DAY	$627.00
1 inch Belt Skimmer	MO	$569.00
Rotating Skimmer Unit	DAY	$816.00
Skimmer, Duck Bill	DAY	$28.00
Skim Pack	DAY	$162.00
Weir Skimmer Unit	DAY	$173.00
Hydraulic Power Pack	DAY	$220.00
PFD Survival Suit	DAY	$79.00
PFD Work Vest Rental	DAY	$26.00
OSRV Belt Drive Replacement	EA	$1,302.00
OSRV belt-light oil pads (Set of 4)	EA	$758.00

****** Vessel costs include first tank of fuel only ******

*** Cost of Decontamination of Marine Response Equipment not included.**

*** Replacement Skimming Belts will be priced on request as needed.**

Pressure Washing Equipment		
1000psi Pressure Washer	DAY	$100.00
2000psi Pressure Washer	DAY	$109.00
2500psi Hot Water Pressure Washer	DAY	$341.00
2500psi Pressure Washer	DAY	$118.00
3000psi Hot Water Pressure Washer	DAY	$376.00
2D/Automated Nozzle For Use With a Water Blaster	HR	$65.00
3D/Automated Nozzle For Use With a Water Blaster	HR	$81.00
Water Blaster, 30gpm/10,000psi	HR	$71.00
Water Blaster, 20,000psi	HR	$136.00
Water Blaster, 40,000psi	HR	$165.00
Water Blaster 80gpm/10,000psi	HR	$162.00

Respiratory Protection		
2 Man Breathing System	DAY	$288.00
4 Man Breathing System	DAY	$366.00
Breathing Air Hose, 100ft	DAY	$105.00
Air Breathing Machine	DAY	$341.00
Negative Air Machine (Blower w/ HEPA filter)	DAY	$262.00
Respirator, Full Face	DAY	$32.00
Self Contained Breathing Apparatus (SCBA)	DAY	$262.00

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Site Services National Emergency Response Rates / NuStar Energy Terminals L.P.

Equipment

Pumping/Transferring Pumps	UoM	Price
1in Double Diaphragm Pump	DAY	$97.00
2in Centrifugal Pump	DAY	$110.00
2in Chemical Diaphragm Pump	DAY	$182.00
2in Double Diaphragm Pump	DAY	$137.00
2in Electric Submersible Pump	DAY	$86.00
2in Hale Pump	DAY	$109.00
3in Chemical Diaphragm Pump	DAY	$201.00
3in Diesel Lister Pump	DAY	$154.00
3in Double Diaphragm Pump	DAY	$154.00
3in Electrical Submersible Pump	DAY	$109.00
4in Centrifugal Pump	DAY	$154.00
4in Double Diaphragm Pump	DAY	$212.00
4in Electric Submersible Pump	DAY	$159.00
4in Trash Pump	DAY	$285.00
4in Hydraulic Transfer Pump	HR	$35.00
6in Hydraulic Sludge Pump with Power Pack	DAY	$542.00
6in Hydraulic Transfer Pump	HR	$262.00
Drum Loader	DAY	$172.00
Electric Drum Pump	DAY	$109.00
Hand Pump	DAY	$35.00
Drum Vacuum, Pneumatic	HR	$32.00
Site Support		
150,000 BTU Portable Heater	DAY	$272.00
2,000 - 2,900 Gal Poly Storage Tank	DAY	$79.00
Frac Tank, Double Walled	DAY	$194.00
20,000 Gal Frac Tank	DAY	$162.00
3,000 - 3,900 Gal Steel Storage Tank	DAY	$27.00
300 - 500 Gal Poly Storage Tank	DAY	$42.00
4,000 - 6,000 Gal Poly Storage Tank	DAY	$96.00
4000 Watt Generator	DAY	$139.00
Air Compressor, 8/10cfm	DAY	$121.00
Air Compressor, 175cfm	DAY	$262.00
Vehicle ATV, 4X4 or 4X6	DAY	$366.00
Skid Mounted Liquid Phase Carbon System (10GPM)	DAY	$68.00
Carbon Filter System	DAY	$249.00
Decontamination Trailer	DAY	$183.00
Dewatering Box	DAY	$172.00
Dump Trailer, No Tractor Staged on Site	DAY	$74.00
Eyewash Station	DAY	$53.00
Generator, 5K	DAY	$157.00
Generator, 8K	DAY	$183.00
Generator, 12K	DAY	$162.00
15 Gal HEPA Vacuum	DAY	$172.00
Incident Command Unit	DAY	$1,568.00
Hopper	DAY	$4.30
Intermodel Container	DAY	$32.00
Intrinsically Safe Drop Light	DAY	$105.00

CleanHarbors
ENVIRONMENTAL SERVICES

Site Services National Emergency Response Rates / NuStar Energy Terminals L.P.
Equipment

Site Support	UoM	Price
Light Stand	DAY	$105.00
Light Tower w/Generator	DAY	$523.00
Office Trailer	DAY	$115.00
Portable Boiler	DAY	$910.00
Rolloff Container with Tarp & Bows	DAY	$20.00
Secondary Containment Unit	DAY	$41.00
Halogen Spotlight	DAY	$105.00
Tank Trailer/Transporter, No Tractor (For Storage Only)	DAY	$455.00
Vacuum Box, Watertight	DAY	$109.00
On-site Van Trailer (Tractor not included)	DAY	$201.00

**** Spotting fee, Liners, Cleaning of Unit not included**

Specialty Equipment		
Antiviral Disinfectant Fogger	DAY	$175.00
Cutting Torch/Acetylene Torch	DAY	$120.00
Electric Auger	DAY	$74.00
Auger, Manual	DAY	$65.00
Chemical Cleaning Unit	HR	$115.00
Compactor	DAY	$65.00
Walk Behind Concrete Saw	DAY	$228.00
Confined Space Entry Gear	DAY	$364.00
DBI/Rogliss Tripod	DAY	$65.00
Digital Camera	DAY	$86.00
Drum Crusher, Portable	DAY	$455.00
Drum Tilter, Mechanical	DAY	$172.00
Electric Blower	DAY	$87.00
Fiber Optic Camera	HR	$58.00
Fiber Optic Camera Truck	HR	$149.00
Forklift, 2000Lb Capacity	DAY	$418.00
Plasma Cutting TORCH	DAY	$237.00
Pnuematic Fan Blower	DAY	$87.00
Remote Drum Opener, Pnuematic	DAY	$1,192.00
Sand Blaster and Hose	HR	$29.00
Transit Set	DAY	$125.00

CleanHarbors
ENVIRONMENTAL SERVICES®

Site Services National Emergency Response Rates / NuStar Energy Terminals L.P.

Materials

Personal Protective Equipment (Per person per change out)	UoM	Price
Level A w/ResponderPlus Suit/Changeout	EA	$950.00
Level A w/Responder Suit/Changeout	EA	$750.00
Level B w/CPF2 or Polytyvec/Changeout	EA	$200.00
Level B w/CPF3 or Saranex Suit/Changeout	EA	$250.00
Level B w/CPF4 or Barricade Suit/Changeout	EA	$300.00
Level C w/CPF1,2 or Polytyvec/Changeout	EA	$60.00
Level C w/CPF4 or Barricade Suit/Changeout	EA	$120.00
Level C w/CPF3 or Saranex Suit/Changeout	EA	$75.00
Modified Level D (Tyvec, Gloves and Boots)	EA	$30.00
Communication Device for use with EPA Level A PPE	DAY	$160.00
Chemical Protective Garments		
Kappler CPF1 Suit (Blue)	EA	$34.00
Kappler CPF2 Suit (Grey)	EA	$56.00
Kappler CPF2 Suit w/Strapped Seams (Grey)	EA	$94.00
Kappler CPF3 Suit w/Hood & Boots (Tan)	EA	$127.00
Kappler CPF3 Suit w/Hood & Strapped Seams (Tan)	EA	$160.00
Kappler CPF4 Suit w/Hood & Boots (Green)	EA	$132.00
Chemrel Suit, Level C	EA	$80.00
Nomex Suit and Hood	EA	$55.00
Polycoated Rain Gear, 22mil	EA	$18.00
Tyvec, Polycoat HD/BT	EA	$18.00
Tyvec, Saranex	EA	$57.00
Tyvec, White	EA	$22.00
Hand Protection		
12in PVC Gloves	PAIR	$11.00
14in Neoprene Gloves	PAIR	$13.00
14in Nitrile Gloves	PAIR	$13.00
18in PVC Gloves	PAIR	$12.10
Cotton Winter Glove Liners	PAIR	$6.00
Cut Resistant Gloves	PAIR	$29.00
Latex Gloves	PAIR	$6.30
Leather Gloves	PAIR	$8.00
Puncture Resistant Gloves	PAIR	$34.00
Silver Shield Gloves	PAIR	$34.00
Foot Protection		
Non Steel Toe Chest Waders - Purchased	PAIR	$225.00
Disposable Boot Covers (Chicken Boots)	PAIR	$12.50
Head / Facial Protection		
16oz Eyewash	EA	$22.00
Earplugs	PAIR	$1.92
Face/Splash Shield	EA	$22.00
First Aid Kit, 25 Person	EA	$83.00
Respiratory Protection		
Acid Cartridges	PAIR	$29.00
Asbestos Cartridges	PAIR	$30.00
Chlorine Cartridges	PAIR	$29.00
Mercury Cartridges	PAIR	$54.00
MSA Chemical Cartridge	EA	$30.00
Organic Vapor Cartridges (No Dust)	PAIR	$29.00
Organic Vapor/Dust Combination Cartridges	PAIR	$51.00

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Site Services National Emergency Response Rates / NuStar Energy Terminals L.P.
Materials

DOT Shipping Containers	UoM	Price
5 Gal / 20 Litre Closed Poly Drum 1H1/Y1.8/170	EA	$29.00
5 Gal / 20 Litre Closed Steel Drum 1A1/Y1.8/300	EA	$34.00
5 Gal / 20 Litre Poly Drum 1H2/Y1.5/60	EA	$22.00
5 Gal / 20 Litre Steel Drum 1A2/Y1.8/100	EA	$34.00
5.5 Gal / 20 L Steel Drum 1A2/Y23/S	EA	$22.00
10 Gal / 40 Litre Fiber Drum	EA	$40.00
15 Gal / 60 Litre Poly Drum 1H1/Y1.8/100	EA	$71.00
16 Gal / 70 L Closed Poly Drum	EA	$61.00
16 Gal / 70 L Poly Drum 1H2/Y56/S	EA	$64.00
16 Gal Fiber Drum	EA	$29.00
20 Gal / 80 Litre Fiber Drum	EA	$34.00
20 Gal / 80 Litre Poly Drum (1H2/Y56/S)	EA	$100.00
30 Gal / 120 Litre Closed Poly Drum 1H1/Y1.8/100	EA	$78.00
30 Gal / 120 Litre Closed Steel Drum, New 1A2/Y1.6/200	EA	$94.00
30 Gal / 120 Litre Closed Steel Drum, Reconed 1A1/Y1.4/100	EA	$89.00
30 Gal / 120 Litre Fiber Drum 1G/X56/S	EA	$51.00
30 Gal / 120 Litre Poly Drum 1H2/Y142/S	EA	$84.00
30 Gal / 120 Litre Steel Drum, New 1A2/Y1.4/100	EA	$111.00
30 Gal / 120 Litre Steel Drum, Reconditioned 1A2/Y1.2/100	EA	$80.00
55 G / 205 L Closed Steel Drum, Recon 1A1/Y1.4/100 (17-E)	EA	$44.00
55 G / 205 L Steel Drum, Reconditioned 1A2/Y1.2/100 (17-H)	EA	$66.00
55 Gal / 205 L Stainless Steel Drum, Reconditioned	EA	$252.00
55 Gal / 205 Litre Closed Poly Drum 1H1/Y1.8/150	EA	$100.00
55 Gal / 205 Litre Closed Poly Drum 1H1/Y1.8/150, Recycled	EA	$98.00
55 Gal / 205 Litre Closed Steel Drum, New 1A1/Y1.8/300	EA	$97.00
55 Gal / 205 Litre Fiber Drum 1G/Y190/S	EA	$56.00
55 Gal / 205 Litre Poly Drum 1H2/Y237/S	EA	$149.00
55 Gal / 205 Litre Steel Drum Heavy Gauge 1A2/1.5/100 (17-C)	EA	$137.00
55 Gal / 205 Litre Steel Drum, New 1A2/Y1.5/100	EA	$110.00
55 Gal/205 Litre Steel Drum Poly Line 6HA1/X1.5/280 (6D/37M)	EA	$187.00
85 Gal / 320 Litre Steel Drum, New 1A2/X400/S	EA	$230.00
85 Gal / 320 Litre Steel Drum, Recycled 1A2/X400/S	EA	$195.00
110 Gal Steel Drum, New 1A2/Y400S	EA	$502.00
110 Gal Steel Drum, Reconditioned 1A2/Y400S	EA	$455.00
1 Cubic Yard Flexbin 11G/Y/2022/1122	EA	$154.00
1 Cubic Yard Supersac 13H2/Y/06	EA	$82.00
Cubic Yard Box for Non-Haz Waste	EA	$100.00
18x18x24in Nonhazardous Pathological Waste Box	EA	$10.00
4ft Fluorescent Tube Box 4G/Y275	EA	$25.00
Fluorescent Bulb Tubes, 4ft 100 bulb capacity	BOX2	$61.00
Fluorescent Bulb Tubes, 4ft 125 bulb capacity	BOX3	$61.00
Fluorescent Bulb Tubes, 4ft 150bulb capacity	BOX4	$61.00
Fluorescent Bulb Tubes, 8ft 100 bulb capacity	BOX2	$88.00
Fluorescent Bulb Tubes, 8ft 125 bulb capacity	BOX3	$88.00
8ft Fluorescent Tube Box 4G/Y275	EA	$27.00
Waste Wrangler	EA	$187.00

CleanHarbors
ENVIRONMENTAL SERVICES®

Site Services National Emergency Response Rates / NuStar Energy Terminals L.P.

Materials

DOT Shipping Containers	UoM	Price
Asbestos Bag	EA	$1.60
Drum Liners	EA	$22.00
Drum Rings/Bolts/Gaskets	EA	$29.00
Dump Trailer Poly Liner	EA	$96.00
Filter/Liner for Filter Box	EA	$356.00
Flexbin/Cubic Yard Box Liner	EA	$29.00
Pathological Waste Bag	EA	$6.10
Poly Sheet, 6mil 20ft x 100ft	EA	$115.00
Rolloff Poly Liner	EA	$78.00
Poly Bags, 6mil, per Roll	EA	$170.00
Vacbox Liner/Bladder	EA	$770.00
Hazardous Waste Labels	EA	$1.30
Labels - DOT	EA	$1.50
Absorbent Materials		
Absorbent Boom, 3in x 4ft	EA	$8.00
Absorbent Boom, 5in x 10ft x 4/Bale	BALE	$154.00
Absorbent Boom, 8in x 10ft x 4/Bale	BALE	$247.00
Absorbent Pad (101 Grade) 100/bale	BALE	$127.00
Absorbent Roll, 38in x 144ft	EA	$181.00
Absorbent Rug, 36in x 300ft	EA	$300.00
Absorbent Sweep, 17in x 100ft	BALE	$159.00
Activated Carbon for Water treatment systems	LBS	$3.10
Corn Cob Absorbent 40lb / 18 kg bag	BAG	$17.00
HGX Absorbent (Mercury absorbent)	LBS	$20.00
HGX Absorbent (Mercury Absorbent), 5 lbs container	EA	CALL
Oil Snare, Loose in Bag	BOX	$66.00
Oil Snare, on a Line, 50ft	EA	$97.00
Poly Absorbent, 20 lb / 23 kg	BAG	$105.00
Rags, 50 lb / 23 kg	BOX	$61.00
Saw Dust, 20 lb / 9 kg	BAG	$10.00
Speedi Dry	BAG	$12.00
SPI Solidification Particulate (Oil Bond)	LBS	$19.00
SPI Waterbond	LBS	$16.00
Vermiculite 4 cuft / 3 cubic meter	BAG	$32.00
Degreasers & Neutralizing Agents		
Antiviral Disinfectant	GAL	$45.00
142 Solvent	GAL	$11.00
Antifreeze, Concentrate	GAL	$5.80
Capsur	GAL	$170.00
Cirtic Acid Solution, 15%	GAL	$7.00
Citrus Cleaner Degreaser	GAL	$61.00
Diesel Fuel Used a Cleaner	GAL	CALL
Hydrated Lime, 50 lb / 23 kg	BAG	$8.00
Hydrochloric Acid	LBS	$3.60
Penetone Degreaser	GAL	$33.00
Pink Stuff Degreaser	GAL	$22.00
Sanimate Degreaser	GAL	$22.00
Sea Clean Degreaser, 5 Gal / 20 Litre	EA	$83.00
Simple Green Degreaser	GAL	$34.00
Soda Ash, 100 lb / 45 kg	BAG	$52.00
Sodium bisulfate 50 lb / 23 kg	BAG	$121.00
Sodium Hypochlorite, 15% (Bleach)	GAL	$9.00
Spray Gel	GAL	$31.00

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Site Services National Emergency Response Rates / NuStar Energy Terminals L.P.
Materials

Sampling And Lab Supplies	UoM	Price
8oz Sample Jars	EA	$14.00
CHLOR-D-TECT 4000 Test Kit (Halogens)	EA	$29.00
CHLOR'N'OIL Test Kit 0-50ppm PCB	EA	$39.00
Draeger Tube	EA	$29.00
Hanby Soil Reagent/Sample	EA	$56.00
pH Paper, 1-14/Roll	EA	$17.00
Sample Tube	EA	$17.00
2in Flange/Ring Gasket	EA	$6.00
3in Flange/Ring Gasket	EA	$7.00
4in Flange/Ring Gasket	EA	$9.30
8in Flange/Ring Gasket	EA	$16.00
10in Flange/Ring Gasket	EA	$19.00
14in Flange/Ring Gasket	EA	$22.00
24 - 36in Manhole Gasket	EA	$83.00
Marine Equipment		
3/8in Unguarded Galvanized Chain	FT	$7.00
Anchor, 18Lb	EA	$137.00
PFD Deck Suit	EA	$676.00
PFD Safety Light	EA	$29.00
1/2in Nylon Rope	FT	$1.00
1/2in Poly Rope	FT	$0.50
1/8in Poly Rope	FT	$0.40
Hand Tool/Construction Accessories		
16in Street Broom	EA	$35.00
24in Floor Broom	EA	$35.00
3 Gal Pump Spray Bottle	EA	$54.00
3/8in Manilla Rope	FT	$0.50
3/8in Manilla Rope Coil, 600ft	EA	$165.00
3in Long Handle Scraper	EA	$23.00
3in Scraper	EA	$15.00
Carbide Blade	EA	$14.30
12in Masonary Cutting Wheel Blade	EA	$16.00
12in Metal Cutting Wheel Blade	EA	$21.00
Caution Tape/Roll	EA	$56.00
Chemical Tape/Roll	EA	$51.00
Deck/Scrub Brush	EA	$18.00
Disposal Hand Pump/Syphon Pump	EA	$34.00

CleanHarbors
ENVIRONMENTAL SERVICES

Site Services National Emergency Response Rates / NuStar Energy Terminals L.P.
Materials

Hand Tool/Construction Accessories	UoM	Price
Duct Tape/Roll	EA	$12.00
Extension Cord, 50ft	EA	$56.00
Fence Stakes	EA	$9.10
Fence, Slit 100ft	EA	$143.00
Flat Shovel	EA	$32.00
Garden Hoe	EA	$30.00
Garden Rake	EA	$30.00
Pitch Fork	EA	$100.00
Plastic Shovel	EA	$55.00
Sawzall Blade	EA	$34.00
Shrink Wrap	ROL	$48.00
Small Sledge Hammer	EA	$40.00
Snow Fence/Safety Fence, 50ft	EA	$77.00
Spaded Shovel	EA	$35.00
Squeegee	EA	$37.00
Miscellaneous		
#25 Filter Bag	EA	$9.00
Acetylene Bottle	EA	$45.00
Breathing Air Bottle Refill	EA	$30.00
Collection Jar for Mercury Vacuum	EA	$44.00
Dump Truck Tarp	EA	$363.00
Filtration Bag for Mercury Vacuum	EA	$29.00
Hand Cleaner	EA	$33.00
Rolloff Bow	EA	$42.00
Rolloff Tarp	EA	$418.00
Nitrogen Cylinder	DAY	$66.00
Misc. Handtools	DAY	$34.00

EXHIBIT B

Fee schedules Contractor has obtained from such subcontractors and other entities for oil spill containment, recovery and cleanup services.

EXHIBIT C

Clean Harbors' Rate Sheet

CleanHarbors
ENVIRONMENTAL SERVICES®

Site Services National Emergency Response Rates / NuStar Energy Terminals L.P.

Labor

	UoM	Price
Field Personnel		
Field Technician	HR	$58.00
Senior Technician	HR	$63.00
Foreman	HR	$76.00
Equipment Operator	HR	$69.00
Supervisor	HR	$98.00
Project Manager	HR	$126.00
Chemist	HR	$90.00
Lead Chemist	HR	$116.00
Site Safety Officer	HR	$134.00
Technical Personnel		
Associate Engineer	HR	$95.00
Designer	HR	$100.00
Field Engineer/Scientist/Geologist	HR	$107.00
Field Inspector	HR	$82.00
Mechanic	HR	$96.00
Professional Engineer/LSP	HR	$151.00
Senior Engineer/Scientist/Geologist	HR	$120.00
Senior Mechanical Technician	HR	$87.00
Wastewater Treatment Operator	HR	$102.00
Welder	HR	$96.00
Administrative/Managerial Personnel		
Coordinator	HR	$126.00
General Manager	HR	$161.00
On Site Administration	HR	$65.00
Major Event "Strike Team"		
Strike Team Admin/Coordinator	HR	$131.00
Strike Team Logistics/Procurement	HR	$95.00
Strike Team Leader	HR	$183.00
Strike Team Operations Manager	HR	$136.00
Per Diem	DAY	$184.00

CleanHarbors
ENVIRONMENTAL SERVICES®

Site Services National Emergency Response Rates / NuStar Energy Terminals L.P.
Analytical

Organic Analyses	UoM	Price
Acid Extractables (method 625 or 8270)	EA	$269.00
Semivolatiles (methos 625 or 8270)	EA	$455.00
Base Neutral Extractables (method 625 or 8270)	EA	$309.00
BTEX (method 602 or 8020)	EA	$114.00
Fingerprint by GC/FID (ID and Quant)	EA	$174.00
Halogenated Volatiles (method 601 or 8010)	EA	$126.00
Chlorinated Herbicides (method 8150)	EA	$276.00
Polynuclear Aromatic Hydro (method 8310)	EA	$331.00
PCB water or soil (method 608, 8080 or 8081)	EA	$126.00
PCB oil (method 8080 or 8081)	EA	$109.00
PCB wipe (method 8080 or 8081)	EA	$109.00
Pesticides & PCBs (method 608, 8080 or 8081)	EA	$212.00
Pesticides (method 608, 8080 or 8081)	EA	$167.00
Tot. Petroluem Hydrocarbons as Diesel (method 8015)	EA	$120.00
Tot. Petroluem Hydrocarbons as Gasoline (method 8015)	EA	$105.00
Volatiles (method 624 or 8260)	EA	$206.00
Volatile Petroleum Hydrocarbons (standard)	EA	$120.00
Trace Metals Analyses		
Mercury (method 245.1, 7470 or 7471)	EA	$50.00
Individual metals by ICP (method 200 or 7000)	EA	$20.00
Inorganic Analyses		
Acidity (method 305.1)	EA	$28.00
Alkalinity (method method 310.1)	EA	$28.00
Ammonia (method 350.2)	EA	$38.00
Ash Content (method D482-80)	EA	$50.00
Biochemical Oxygen Demand (method 405.1)	EA	$50.00
BTU Heating Value (method D240-76)	EA	$144.00
Chloride (method 325.3)	EA	$28.00
Chemical Oxygen Demand (method 410)	EA	$38.00
Cyanide, Reactive (method 7.3.3.2)	EA	$55.00
Cyanide, Total (method 335.2 or 9010)	EA	$50.00
Fluoride (method 340.1)	EA	$33.00
Flashpoint (method 1010 or D1310-84)	EA	$43.00
Halogens (method D808 or D512)	EA	$152.00
Hardness (method 130.2)	EA	$28.00
Kjeldahl Nitrogen (method 351.3)	EA	$50.00
Nitrite (method 354.1)	EA	$33.00
Nitrate & Nitrite (method 353.2, 352.1 and 354.1)	EA	$38.00
Orthophosphate (method 365.2)	EA	$38.00
Paint Filter Test (method 9095)	EA	$33.00
pH (method 150.1 9040 or 9045)	EA	$22.00
Phenol, Total (method 420.1 or 9065)	EA	$50.00
Petroleum Hydrocarbon Oil & Grease (method 5520F)	EA	$92.00
Specific Gravity (method D1429-76)	EA	$55.00
Sulfate (method 375.4 or 9036)	EA	$33.00
Sulfide, Reactive (method 7.3.4.2)	EA	$60.00
Sulfide, Total (method 376.1 or 9030)	EA	$38.00
Sulfur (method D129-64)	EA	$103.00
Surfactants (method 425.1)	EA	$87.00

CleanHarbors

Site Services National Emergency Response Rates / NuStar Energy Terminals L.P.
Analytical

Inorganic Analyses	UoM	Price
Total Organic Carbon (method 415.1 or 9060)	EA	$77.00
Total Oil & Grease, Gravimetric (method 413.1 or 9070)	EA	$65.00
Tot. Pet. Hydrocarbons by IR (method 418.1)	EA	$85.00
Total Solids (method 160.3 or 2450G)	EA	$22.00
Total Suspended Solids (method 160.2)	EA	$22.00
Environmental Packages Toxicity Characteristic Leaching Procedure		
TCLP Semivolatiles (extraction not included) (method 8270)	EA	$455.00
TCLP extraction (for metals, BNA, Pest & Herb) (method 1311)	EA	$87.00
Full TCLP (includes extraction, Pesticides & Herbicides)	EA	$1,403.00
TCLP 8 Metals (extraction not included) (method 7000)	EA	$162.00
TCLP Pesticides (extraction not included) (meth8080 or 8081)	EA	$169.00
TCLP Volatiles (ZHE extraction not included) (method 8260)	EA	$201.00
Zero Headspace Extraction (for TCLP VOA)	EA	$114.00
Appendix IX Analyses		
Appendix IX Dioxin	EA	$1,895.00
Appendix IX Pesticides	EA	$304.00
Appendix IX Volatiles	EA	$336.00

Surcharge Schedule

Surcharge for expedited turnaround, data within 24hrs - 100%
Surcharge for expedited turnaround, data within 48hrs - 75%
Surcharge for expedited turnaround, data within 72hrs - 50%
Surcharge for expedited turnaround, data within 96hr - 35%

Waste Material Approval		
Profile Approval Fee (No Sample)	EA	$75.00
Sample & Profile Approval Fee	EA	$109.00

Customer Initials MB

Site Services National Emergency Response Rates / NuStar Energy Terminals L.P.
Notes

1. All labor, equipment, materials and services outlined in this Schedule of Rates will be invoiced at the rates listed, regardless of Clean Harbors' method of acquisition. Any items not described in this Schedule of Rates which are acquired by Clean Harbors shall be invoiced at Clean Harbors' cost plus a markup of thirty-five percent (35%). (Unless otherwise specified, these rates are not valid for response to Infectious Agents/Biologicals.)
2. Lodging and subsistence for Clean Harbors personnel and our subcontractors in the field are included in a per diem charge per person per day when working more than 30 miles from our closest operations center. The rate is outlined in the labor section of this document.
3. At it's sole discretion, Clean Harbors will determine the level of protection required for each project. Level A, B, C or D personal protection and safety packages will be invoiced at the rates shown in the Schedule of Rates.
4. The Schedule of Rates includes the cost of Clean Harbors basic medical monitoring program. Any special medical monitoring required by the client or the nature of the work will be added to the project scope and the client will invoiced at cost plus a markup of thirty-five percent (35%).
5. Clean Harbors' personnel and equipment will be charged portal-to-portal (mobilization and demobilization included). Services provided prior, during and/or subsequent to actual project site activities will also be charged at the Hourly Rate. This includes, but is not limited to, time taken by personnel to decontaminate and re-don protective clothing and equipment that is billed as part of the project.
6. Clean Harbors' normal employee workday is 7:00 am to 3:30 pm, Monday through Friday. Other work hours must be agreed to in writing in advance. No more than eight (8) hours of straight time will be billed for one person for one day. All time will be based upon a 24 hour day.
7. All hours worked in excess of eight (8) hours in the normal workday, as described above, as well as all hours worked all day Saturday are considered overtime and will be billed at 1.5 times the applicable straight time rate for all billable personnel.
8. Sunday and Holidays are considered premium time and will be billed at 2.0 times the applicable straight time rate for all billable personnel. Holidays are the legally observed United States Federal Holidays plus the day after Thanksgiving. When local laws or regulations recognize additional holidays or when local laws or regulations define premium hours in excess of this definition, Clean Harbors will invoice in accordance with local laws or regulations.
9. All emergency call-outs (i.e., less than 24-hour notice) will be subject to a minimum four (4) hour response charge or $2000.00 minimum charge, whichever is greater. Minimum charges do not apply to Transportation and Disposal.
10. A mobile communication charge of $50 per day will apply for each foreman and all supervisor personnel for all emergency response projects.
11. Charges for Safety Plans are assessed on all Emergency Response projects, or those involving OSHA regulated substances. Site Specific Health & Safety Plans prepared for the customer, or as required by applicable regulations, will be quoted on an individual basis.
12. All transportation equipment rates are subject to additional per mile charges for any day where total mileage exceeds 100 miles. These charges for high fuel consumption will be determined at the beginning of each job/project and maybe adjusted monthly.
13. A variable Energy and Security Recovery Fee (that fluctuates with the DOE national average diesel price), will be applied to the total invoice, excluding sales tax.
14. For the purposes of determining proper wages to be paid on prevailing wage projects, Field Technician and Senior Field Technician shall be defined as equivalent to the "Laborer" job description from the wage determination. Other Clean Harbors job titles should be consistent with existing prevailing wage categories.

    For equipment with both an Hourly Rate and a Daily Rate, Hourly Rates will apply up to 6 hours; then the Daily Rate will apply up to 12 hours

    After 12 hours and up to 18 hours the Hourly Rate will apply.
    After 18 hours two Daily Rate charges will be applied. No more than 2 Daily Rates will apply per calendar day.

    For equipment with only Daily Rates, a day will be charged up to 12 hours.
    After 12 hours and up to 18 hours, an Hourly Rate will apply calculated as the Daily Rate divided by 8 hours.
    After 18 hours two Daily Rates will apply. No more than 2 Daily Rates will apply per calendar day.

    For boats and other marine equipment, Daily Rates will apply regardless of the hours used per day. Only one Daily Rate will apply for each calendar day.
15. A day consists of a one calendar day. A new day begins at midnight and charges begin to accumulate at midnight for the next day.
16. For equipment identified in this Schedule of Rates that includes a Weekly Rate, a "Week" is defined as not more than seven (7) Daily Rate charges in a seven (7) day period, Monday through Sunday. The equipment will be subject to additional days or hours in excess of seven (7) Daily Rate charges in a week, not to exceed two weekly charges in a single 7 day week, Monday through Sunday.
17. All waste disposal from project and or response activities will be charged additionally to the rates lists herein. A Waste Document Preparation Fee of $125 per day will apply to any work generating waste. The fee includes labels, manifests/bills of lading and profiles.

18. The procedure to engage the Stand-by rate follows the following steps
Equipment 40% discount from published rates
All other rates associated with the Stand- by service stated below remain the same.

1. NuStar calls Clean Harbors to request specific equipment and people that they want ready for deployment.

2. Clean Harbors verifies with NuStar that these assets are available and will be placed on Stand-by starting on the agreed to date.

3. NuStar informs Clean Harbors to deploy to the site with the pre determined equipment and people which starts the ER rate OR NuStar calls Clean Harbors to remove these items from the Stand-by rate, thus releasing these assets to other customers and duties.

EXHIBIT D

Customer Locations

OSROs by Facility **Updated: 9/8/2010**

Facility	Region	(b) (7)(F)		State	Site Type	Contractor	First Responder Yes or No	Est. miles to nearest OSRO location
Baltimore Terminal	EC		Baltimore	MD	Terminal	CH	Yes	20
Blue Island Terminal	CE		Blue Island	IL	Terminal	CH	Yes	10
Dumfries Terminal	EC		Dumfries	VA	Terminal	CH	Yes	50
Houston Asphalt Terminal	REF		Houston	TX	Terminal	CH	Yes	15
Linden Marine JV Terminal #1	EC		Linden	NJ	Terminal	CH	Yes	18
Linden NuTOP Terminal #2	EC		Linden	NJ	Terminal	CH	Yes	20
Paulsboro Terminal	EC		Paulsboro	NJ	Terminal	CH	Yes	10
Virginia Beach Terminal	EC		Virginia Beach	VA	Terminal	CH	Yes	25

EXHIBIT E

Minimum Insurance Requirements

Policy	Limits	Coverage
Workers' Compensation	Amount required by law in each state where Contractor conducts operations.	Must include coverage for alternate employers and borrowed servants, if leased employees will be used. To the extent Contractor's activities are subject to the Jones Act, the Longshore and Harbor Workers Compensation Act, or the Defense Base Act (collectively, the "Acts"), the Workers' Compensation policy must be endorsed to cover all liability under any such Acts.
Stop Gap Employers Liability	$500,000 (each accident or disease)	Required in all states where Workers' Compensation insurance is a monopolistic state-run system.
Employer's Liability	• $500,000 for bodily injury (each accident) • $500,000 for bodily injury by disease (policy limits) • $500,000 for bodily injury by disease (each employee)	
Commercial General Liability	• $2,000,000 general aggregate limit • $1,000,000 each occurrence limit (bodily injury/property damage) • $1,000,000 each occurrence limit (personal injury and advertising injury) • $2,000,000 aggregate limit (products/completed operations) • $1,000,000 each occurrence limit (products/completed operations) • $1,000,000 each occurrence limit (fire legal liability)	Must be written on Insurance Services Office (ISO) Form CG 00 01 12 04 or a substitute form providing equivalent coverage, covering liability arising from premises, operations, personal injury, advertising injury, products/completed operations, and liability assumed under an insured contract (including tort liability of a third party assumed in a business contract).

Business Automobile Liability	$1,000,000 combined single limit (bodily injury/property damage)	Must include coverage for all owned, non-owned and hired vehicles.
Umbrella/Excess Liability	$10,000,000 each occurrence limit	Must include terms at least as broad as the underlying Employer's Liability, Commercial General Liability and Business Automobile Liability policies.
Environmental Insurance (Contractor's Pollution Liability)	• $10,000,0000 aggregate limit • $5,000,000 each occurrence limit	The policy must include Customer, its Affiliates, and their directors, officers, and employees as Additional Insureds. Contractor shall provide a copy of the Additional Insured endorsement to Customer. The policy must not contain an Insured vs. Insured exclusion, or the exclusion must be modified to allow Customer to bring a claim against Contractor. If required within the scope of Contractor's Work, the insurance required herein cannot exclude coverage for bodily injury, property damage, pollution or environmental harm resulting from or arising out of the Work, asbestos, lead or silica-related claims, claims, or liability arising out of the transportation and disposal of waste. The policy must contain a separation of insureds clause. If a motor vehicle is used in connection with the Work, the Business Automobile Liability policy will include coverage at least as broad as Insurance Services Office (ISO) CA 99 48 and be endorsed to include Motor Carrier Act endorsement MCS 90.

The Workers' Compensation, Commercial General Liability and Business Automobile Liability policies will, to the fullest extent allowable by law, include a waiver of subrogation in favor of

Customer, its Affiliates, and each of their respective officers, directors, employees and borrowed servants. The Commercial General Liability policy will (i) include Customer, its Affiliates, and each of their respective officers, directors, employees and borrowed servants as additional insureds (collectively, the "Customer Insured Group"); and (ii) be primary and non-contributory with respect to any insurance or self-insurance maintained by Customer. Any additional insured endorsement may be either specific to the Customer Insured Group or "blanket" or "automatic" (i.e., addressing any person or entity), as required by contract. The endorsement must include coverage for "completed operations" if the work involves construction, repairs, or maintenance. Contractor shall provide a copy of the additional insured endorsement to Customer within sixty (60) days of the date of execution of this Agreement and within sixty (60) days of each policy renewal.

Contractor covenants and agrees to:

(A) maintain the insurance coverages and limits required hereby and any additional insurance and/or bonds required by law (i) at all times during the term of this Agreement and until completion of all Work associated with this Agreement, whichever is later; and (ii) with respect to any coverage maintained in a "claims-made" policy, for two (2) years following termination of this Agreement or completion of all Work associated with this Agreement, whichever is later; provided that, if a "claims-made" policy is maintained, the retroactive date must precede the date of commencement of Work under this Agreement;

(B) require each subcontractor who may perform Work under this Agreement or enter upon the Work site to maintain coverages, requirements, and limits at least as broad as those listed in this Exhibit B (excluding any Umbrella/Excess Liability requirements) from the time when the subcontractor begins Work, throughout the term of the subcontractor's Work and, with respect to any coverage maintained on a "claims-made" policy, for two (2) years following completion of subcontractor's Work;

(C) procure the required insurance from an insurance company eligible to do business in the state or states where Work will be performed and having and maintaining a Financial Strength Rating of "A-" or better and a Financial Size Category of "VII" or better, as rated in the A.M. Best Key Rating Guide for Property and Casualty Insurance Companies; provided, however, with respect to Workers' Compensation insurance, Contractor may procure such insurance from the state fund of the state where Work is to be performed; and

(D) deliver to Customer certificates of insurance stating the types of insurance and policy limits, and further provide, or cause the issuing insurance company to provide, at least 30 days prior written notice to Customer of any cancellation, non-renewal, or reduction in coverage, terms, or limits. Contractor shall deliver such certificates (i) prior to execution of this Agreement and prior to commencement of any Work; (ii) prior to expiration of any insurance policy required under this Agreement; and (iii) for any coverage maintained on a "claims-made" policy, for two (2) years following the termination of this Agreement or completion of all Work associated with this Agreement, whichever is later.

Customer and Contractor further covenant and agree that (i) the failure of Customer to demand such certificate of insurance or failure of Customer to identify a deficiency therein will not be construed as a waiver of Contractor's obligation to maintain the insurance required under this Agreement; (ii) the insurance required under this Agreement does not represent that coverage and limits will necessarily be adequate to protect Contractor, nor be deemed as a limitation of Contractor's liability to Customer in this Agreement; (iii) Contractor may meet the required insurance coverages and limits with any combination of primary and umbrella/excess liability insurance; and (iv) Contractor is solely responsible for any deductible or self-insured retention.