OIL SPILL CONTINGENCY PLAN
TESORO SALT LAKE CITY REFINERY

STATEMENT OF CORPORATE COMMITMENT

This Oil Spill Contingency Plan (OSCP) has been prepared for operation of the Tesoro Salt Lake City Refinery, located in Salt Lake City, Utah. The refinery has a capacity to process about 55,000 barrels of sweet (low sulfur) crude oil per day. Approximately 70% of the crude oil run at the facility is domestic and 30% Canadian. Additional storage capacity is provided by the remote terminal located approximately 2.5 miles northwest of the refinery. About half of the products produced by the refinery are supplied into the local Salt Lake City market. The balance of the refinery's production is shipped via pipeline to customers in southern Idaho and eastern Washington. Operations at the refinery include receipt, storage, and shipment of petroleum products by pipeline, truck and railcar. Products stored at the refinery include gasoline, distillates, fuel oil, and propane. The total refinery oil storage capacity is approximately (b) (7)(F) [redacted] barrels.

MANAGEMENT APPROVAL AND MANPOWER AUTHORIZATION

The necessary resources to implement this OSCP are hereby committed. In the event of an oil spill for which Tesoro is responsible, best efforts will be initiated to expeditiously control and remove any harmful quantity of oil discharged. Tesoro has adopted and uses the Region 8 Area Contingency Plan. Copies of the plans are kept on-site and ready for use at the facility by Tesoro personnel. These documents will be evaluated semiannually to be sure they are current and updated as necessary.

[signature]
Matthew Marusich
Manager, Operations

12/17/12
Date

RESPONSE PLAN COVER SHEET

TESORO SALT LAKE CITY REFINERY

Facility Owner: Tesoro Refining & Marketing Company LLC

Facility Operator: Tesoro Refining & Marketing Company

Owner/ Operator Mailing Address: 19100 Ridgewood Parkway, San Antonio, TX 78259

Owner/ Operator Phone No.: (210) 299-6066

Facility Name: Tesoro Salt Lake City Refinery

Facility Address (street address or route): 474 W. 900 N., Salt Lake City, Utah 84103

Facility Phone No.: (801) 521-4883

[redacted]

Dun & Bradstreet Number: 15-134-3530

Largest Aboveground Oil Storage Tank Capacity (gallons): [redacted]

Number of Aboveground Oil Storage Tanks: 103

Standard Industrial Classification (SIC) Code: 2911

Maximum Oil Storage Capacity (gallons): [redacted]

Worst Case oil Discharge Amount (gallons): [redacted]

Facility Distance to Navigable Water. Mark the appropriate line.

0 - ¼ mile: X ¼ - ½ mile: ____ ½ - 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 X

Does the facility have a total oil storage capacity greater than or equal to 1 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 X

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculate using the appropriate formula in Appendix C or a comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?

YES X NO ____

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculate using the appropriate formula in Appendix C or a comparable formula) such that a discharge from the facility would shut down a drinking water intake?

YES ____ NO X

Does the facility have a total oil storage capacity greater than or equal to 1 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 5 years?

YES ____ NO X

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: M. J. Marusich Date: 12/17/12

Name: Matthew Marusich Title: Manager, Operations

(Please type or print.)

RESPONSE PLAN COVER SHEET

TESORO REMOTE TANK FARM

Facility Owner Tesoro Logistics Operation LLC

Facility Operator Tesoro Logistics LP

Owner/ Operator Mailing Address 19100 Ridgewood Parkway, San Antonio, TX 78259

Owner/ Operator Phone No. (210) 299-6066

Facility Name Tesoro Salt Lake City Remote Tank Farm

Facility Address (street address or route) 1300 W. 1700 N., Salt Lake City, Utah 84103

Facility Phone No. none

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

Dun & Bradstreet Number 96-804-2452

Largest Aboveground Oil Storage Tank Capacity (gallons) (b) (7)(F) [redacted]

Number of Aboveground Oil Storage Tanks 17

Standard Industrial Classification (SIC) Code 5171

Maximum Oil Storage Capacity (gallons) (b) (7)(F) [redacted]

Facility Distance to Navigable Water. Mark the appropriate line.

0 - ¼ mile X ¼ - ½ mile ____ ½ - 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 X

Does the facility have a total oil storage capacity greater than or equal to 1 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 X

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculate using the appropriate formula in Appendix C or a comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?

YES X NO ____

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculate using the appropriate formula in Appendix C or a comparable formula) such that a discharge from the facility would shut down a drinking water intake?

YES ____ NO X

Does the facility have a total oil storage capacity greater than or equal to 1 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 5 years?

YES ____ NO X

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 12/14/12

Name Rick Weyen Title V. P. Operations

(Please type or print.)

TABLE OF CONTENTS

SECTION 1 INTRODUCTION

1.1 PURPOSE AND SCOPE

The purpose of this OSCP is to provide a plan that, when implemented, is capable of protecting natural resources of the United States. The OSCP is designed to illustrate Tesoro's capability to ensure prompt and proper removal of oil and to minimize environmental damages.

The OSCP has been prepared so that procedures established by this plan are in compliance with federal, state, and local oil spill contingency plans which establish criteria and guidelines for the response to an oil spill. It is intended to be used in conjunction with the Region 8, Regional and Area Contingency Plan (ACP).

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

The geographical area covered by this OSCP includes the area immediately surrounding the Salt Lake City Refinery, and the portions of the Jordan River, the drainage canal and adjacent shoreline which could be affected by a spill from the refinery. The facility location is illustrated in **Figure 1.2**.

1.2 REGULATORY MANDATE

This Oil Spill Contingency Plan (OSCP) has been prepared for the Tesoro Salt Lake City Refinery to satisfy federal oil spill planning requirements of the Environmental Protection Agency (EPA) established by the Oil Pollution Act of 1990 (OPA 90). Cross-references to agencies which may have spill response planning jurisdiction over this terminal are included in Appendix H. This has been prepared in accordance and used in conjunction with:

- Response Plans for Onshore Oil Pipelines (49 CFR Part 194)
- National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300),
- Region 8, Regional and Area Contingency Plan

1.3 CONTINGENCY PLAN UPDATES

The Tesoro Intermediate Safety Representative (ISR) in Salt Lake City, Utah will retain the master copy of this OSCP.

Copies of the OSCP will be distributed to the EPA, Department of Transportation (DOT) Pipeline and Hazardous Material Safety Administration (PHMSA), and other interested parties. A copy of this OSCP will be kept in the Refinery ISR's office at the Tesoro Salt Lake City Refinery where it will be immediately available for inspection or use. A record of plan distribution will be maintained by the Contingency Plans Administrator in San Antonio, Texas.

The Refinery ISR will review the OSCP with the Refinery Operators annually, use the OSCP during spill response drills, and practice policies which are described in this OSCP to assure that all personnel are familiar with the OSCP.

1.3.1 Routine Plan Updates

This OSCP will be reviewed annually by the Refinery ISR to ensure that plan information is current.

Changes, when made, will be recorded on the “Record of Revisions” log sheet, **Figure 1.4**. Plan holders will be notified of changes or revisions with a letter that identifies the revision number, date, section numbers, and page numbers. Replacement copies of the affected pages will be provided.

It will be the responsibility of each plan holder to ensure that all updates are promptly incorporated into their copy of the OSCP. All plan holders are encouraged to immediately advise the Tesoro Refinery ISR of any needed corrections which come to their attention.

1.3.2 Immediate Plan Updates

Tesoro will immediately modify its response plan to address a new or different operating condition or information that would substantially affect the implementation of a response plan and, within 30 days of making such a change, submit the change to EPA, PHMSA, Utah DEQ and all plan holders. Examples of changes in operating conditions that would cause a significant change to an operator's response plan are:

- Under 49 CFR 194.121(b):
  - (1) An extension of the existing pipeline or construction of a new pipeline in a response zone not covered by the previously approved plan;
  - (2) Relocation or replacement of the pipeline in a way that substantially affects the information included in the response plan, such as a change to the worst case discharge volume;
  - (3) The type of oil transported, if the type affects the required response resources, such as a change from crude oil to gasoline;
  - (4) The name of the oil spill removal organization;
  - (5) Emergency response procedures;
  - (6) The qualified individual;
  - (7) A change in the NCP or an ACP that has significant impact on the equipment appropriate for response activities; and

(8) Any other information relating to circumstances that may affect full implementation of the plan.

- Under 40 CFR 112.20(d)1:

(1) A change in the facility's configuration that materially alters the information included in the response plan;
(2) A change in the type of oil handled, stored, or transferred that materially alters the required response resources;
(3) A material change in capabilities of the oil spill removal organization(s) that provide equipment and personnel to respond to discharges of oil described in paragraph (h)(5) of this section;
(4) A material change in the facility's spill prevention and response equipment or emergency response procedures; and
(5) Any other changes that materially affect the implementation of the response plan.

1.3.3 Plan Amendments

This Plan is prepared and is submitted to the PHMSA and the EPA for approval every five years.

This OSCP is not intended to be a static document. It will be reviewed and amended as necessary whenever changes in facility operations require plan resubmission for EPA, PHMSA, or Utah Division of Environmental Response & Remediation to re-examine or re-approve the OSCP. These revisions/amendments include:

- The revision of applicable regulations;
- A significant change in the facility's configuration;
- Any changes to the facility that could materially increase the potential for spill incidents or changes the response system;
- The identity, capability, or availability of the response resources identified and available by contract or other approved means changes;
- The plan fails during an emergency response or drill;
- Facility ownership or management changes;
- The types of oil handled, stored or transported at the facility changes;
- The potential worst case discharge spill volume increases substantially; or
- The EPA, PHMSA or Utah Division of Environmental Response & Remediation determines that the plan does not meet the requirements and a written notice of the deficiencies is made.

This OSCP will be reviewed and resubmitted within five years of the previous submission or approval. The plan will be modified to address new or different operating conditions or information included in the plan. The revised plan will be resubmitted to all plan holders listed in the Record of Revisions.

Plan holders will be notified, in writing, as soon as possible (within 30 days for PHMSA or within 60 days for EPA) of any significant change which could affect implementation of this OSCP, including a substantial decrease in available spill response equipment.

Plan revisions that affect only the response personnel names or telephone numbers do not require resubmission for re-approval. However, all registered plan holders will periodically be sent these revisions.

1.3.4 Post Spill Review

Following drills, or an actual spill, the response effort and the OSCP will be reviewed and evaluated to ensure a continued preparedness to respond. Using the objective (i.e., core components) identified in **APPENDIX A**, Tesoro will conduct a debrief meeting and solicit the observations of the responders, including government members of the Unified Command, to determine how well the objectives were achieved. This analysis will be summarized in a written report and used to determine recommendations for corrections or improvements, and a schedule for their implementation. A periodic management-level review will be conducted to ensure application of the appropriate lessons learned. Copies of reports generated following drills or actual spills will be made available for agency inspection at the refinery.

FIGURE 1.1
FACILITY INFORMATION SUMMARY

Owner/Operator:	Tesoro Refining & Marketing Company LLC	Tesoro Logistics LP/Tesoro Logistics LLC
Corporate Parent Company	Tesoro Refining & Marketing Company	Tesoro Logistics LP
Facility Name / SIC & NAICS Codes:	Salt Lake City Refinery	Remote Terminal Salt Lake City Pipelines
Name and Address of person to whom correspondence should be sent:	Brock Carter Sr Contingency Planning & ER Coordinator 474 West 900 North Salt Lake City, UT 84103	
Description of Facility:	The refinery is located within the Salt Lake City limits at the foot of the Wasach Mountains. Salt Lake City is configured as a single train, sweet crude refinery and produces gasoline, jet fuel, diesels, and propane. There are seven process units at the site, a crude unit, a reformer, a fluid catalytic cracker, an alkylation unit, product blending and storage, a sulfur recovery unit, benzene reduction unit and gasoline hydrotreater as well as additional support facilities.	The Remote Terminal is located to the northwest of the refinery in an industrial area. The Salt Lake City Pipeline consists of ten pipelines associated with the Refinery, all are located within a seven-mile radius of the refinery.
Description of Operations:	Oil refining and petroleum products manufacturing	Transfer of refined products through trucks, rail and pipe line.
Product Disposition:	Transfer of refined oil products	
Description of Tanks:	See **TABLE C.1**	See **TABLE C.2**
Hours of Operating/Manning:	24-hours per day, 7 days per week	(b) (7)(F) [redacted]
Facility Throughput:	60,600 barrels a day of crude oil	
Products Handled:	sweet crude	Gasoline, diesel, jet fuel, crude oil
Mailing Address:	474 West 900 North Salt Lake City, UT 84103	
Location (Lat., Long.):	(b) (7)(F) [redacted]	[redacted]
Site Topography:	See **FIGURE 1.2**	
Telephone/FAX:	(801)521-4810 Fax (801) 521-4965	(801) 521-4969

Qualified Individuals:	**Karma Thomson** Refinery, VP Office: 801-521-4813 Cell: 801-414-1532 (b) (6) [redacted]	**Matt Marusich**Senior Manager, OperationsOffice: 801-521-4967 Cell: 925-260-0397 Pager: 925-688-6367 (b) (6) [redacted]	**William Snarr** HSE Manager Office: 801-521-4966 Cell: 801-528-2009 (b) (6) [redacted]
	Richard Walkingshaw Manager, Maintenance & Reliability Office: 801-521-4850 Cell: 801-971-7326 (b) (6) [redacted]	**Justin Lawrence** Manager, Human Resources Office: 801-521-4840 Cell: 210-837-3094 (b) (6) [redacted]	**Dean Adam** Plant Controller 1 – Mountain Office: 801-521-4874 Cell: 801-349-7139 (b) (6) [redacted]

Qualified Individuals: (Continued)	**Henry Chung** Senior Manager, TechnicalOffice: 801-521-4871 Cell: 714-609-3393 (b) (6) [redacted]	**Dean Anderson** Area Mgr, Logistics Operations, NWOffice: 801-366-2045 Cell: 801-556-1267 (b) (6) [redacted]	**Arvin Paul** Manager, Refinery Economics and Planning Office: 801-521-4868 Cell: 337-802-5600 (b) (6) [redacted]
Date of Storage Startup:	**1908**		
Wellhead Protection Area:	**None**	**None**	
Dates(s) and Type(s) of Substantial Expansion:	1908 Refinery Startup 1944 Expanded to 16,000 bbls/day including construction of the Catalytic Cracking and Alkylation Units and additional tankage. 1954 addition of the Crude Unit, Reforming Unit and Boiler Plant. 1958 refining capacity was increased to 35,000 bbls/day. 1970 Additional tankage added. 1997 expanded the N2C and FCU for additional crude capacity to 47,000 bbls/day. 2004 Distillate Desulfurization Unit Ultra Low sulfur diesel production. 2007 Fluid Catalytic Cracking Unit Reliability Project Environmental, Reliability. 2008 Distillate Desulfurization Unit Compressor Upgrade Increase Ultra low sulfur diesel production 2009 Gas Hydrotreating Unit Meet sulfur specs in gasoline. 2011 Benzene Saturation Unit Benzene removal from product stream	1952 Remote Terminal constructed	
Date Updated	**September 2013**		

(b) (7)(F)

[redacted]

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(b) (7)(F)

[redacted]

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FIGURE 1.4
RECORD OF REVISIONS

Revision Number	Revision Date	Description of Changes	Updated By
Original	December 2012	Original	Hannah Adams / Brock Carter
Revision 1	September 2013	Annual Review	Brock Carter / Tracy Cowan

FIGURE 1.5

Distribution LIST**Plan #**	Name	Address
1	Refinery Manager	SLC Refinery 474 W 900 N Salt Lake City, UT 84103
2	Safety Team Leader	SLC Refinery 474 W 900 N Salt Lake City, UT 84103
3	Refinery Fire Chief	SLC Refinery 474 W 900 N Salt Lake City, UT 84103
4	Refinery EOC	SLC Refinery 474 W 900 N Salt Lake City, UT 84103
5	Refinery HSE Manager	SLC Refinery 474 W 900 N Salt Lake City, UT 84103
6	Refinery OMD Supervisor	SLC Refinery 474 W 900 N Salt Lake City, UT 84103
7	Director of Contingency Planning & ER	Director of Contingency Planning and Emergency Response Tesoro Companies, Inc. 19100 Ridgewood Parkway San Antonio, Texas 78259
8e	VP, Environmental-Marketing & Logistics	Tesoro Corporation 3450 S 344th Way, Suite 201 Auburn WA 98001
9	Scott Whitmore	EPA Region VIII Mail Code ENF-AT 1595 Wynkoop Street Denver, Colorado 80202-1129
10e, 11e	John Hess	PHMSA Environmental Planning Officer Office of Pipeline Safety Room E22-210 1200 New Jersey Avenue, S.E. Washington, D.C. 20590
12	Dale T. Urban	Utah DEQ Emergency Response and Remediation Utah Department of Environmental Quality 195 North 1950 West Salt Lake City, Utah 84116
13	Sr Contingency Planning & ER Coordinator	SLC Refinery 474 W 900 N Salt Lake City, UT 84103

10=Hard Copies; **3**=Electronic Copies

SECTION 2 INITIAL RESPONSE ACTIONS

2.1 INITIAL RESPONSE

Hazards associated with oil spills include fires, explosions, and exposure to toxic chemicals at lethal or sublethal levels. ***The initial priority during an oil spill is to protect the health and safety of affected and response personnel.***

The first person to discover a spill of potentially toxic, flammable or explosive material should immediately leave the area and then report the spill.

Anyone discovering an emergency condition should **dial 4900** and report the following information:

1. Your name
2. Location
3. Size and nature of the emergency
4. As known, identify what materials are being released
5. How many people are injured and the nature of their injuries
6. Request the type of assistance needed (fire brigade, HAZMAT team, rescue team, paramedics, ambulances)
7. Do not hang up until the Emergency Dispatcher hangs up first.

ACTIVATING THE EMERGENCY RESPONSE NOTIFICATION SYSTEM

If there is a need to activate the emergency response paging system, contact the OMD Board at extension 4900.

Relay pertinent information to the OMD Board such as the location, the type of incident, the level of incident if known, whether paramedics are required, or if there are special hazards associated with the incident.

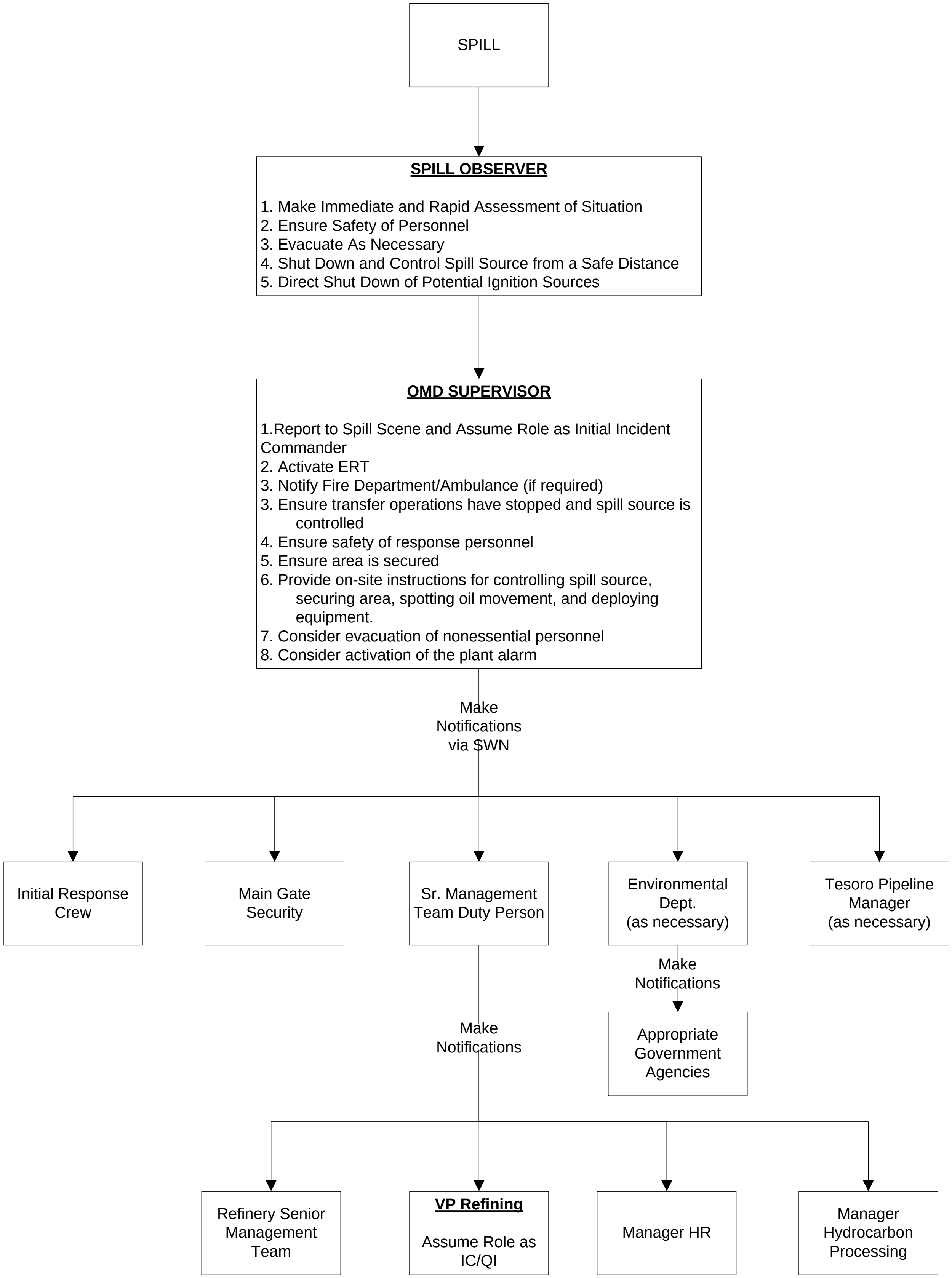
The OMD Board Operator will contact the OMD Shift Supervisor and relay the information. The OMD Shift Supervisor will contact Security Control Center Officer at extension 4935. The Security Officer will complete Figure 2.5 and send the notice using the Send Word Now® system:

- Login to the Send Word Now® system online
- Select ‘Send Alert’
- Select appropriate template
- Select appropriate level
- Push ‘Send’ to send alert

If the incident warrants a site-wide emergency notification or evacuation the OMD Supervisor will instruct the Security Control Center Officer to sound the plant emergency alarm.

It is critical to immediately assess the fire and explosion hazard associated with any spill. Petroleum hydrocarbons and many other products carried by trucks, stored in tanks, or transported in pipelines are flammable and can be explosive.

FIGURE 2.1
INITIAL RESPONSE FLOWCHART



2.1.1 PERSONNEL SAFETY

While Tesoro recognizes the importance of responding rapidly to an oil spill incident, personal safety is always accorded the highest priority during response operations activities. To ensure personal safety, the following guidelines will be observed:

1. Deployment of equipment will not be attempted when the threat of fire or explosion exists.
2. Deployment of equipment will not be attempted when flammable vapors are present or suspected, and action will not be taken until the vapors in the surrounding area have been reduced to a safe level (i.e., less than 10 percent of the lower explosive limit [LEL]).
3. Deployment of equipment will not be initiated until all personnel involved in deployment operations are wearing the required protective clothing.

2.2 EMERGENCY ACTION CHECKLISTS

This section provides a prioritized list of actions that should be taken by key members of the Immediate Response Team (IRT) in the event of an oil spill. These are the actions that occur during the first minutes of an incident and determine the extent of emergency response required.

Each action item has been carefully planned but may not completely address all situations and circumstances that might be encountered in an emergency situation. Careful evaluation, common sense, and experienced judgment should be applied at all times during an emergency response.

The Emergency Action Checklists in this section are presented as a guide. The lists are not intended to preclude logical actions and decisions based on the observed circumstances.

2.2.1 EMERGENCY ACTION CHECKLIST FORMAT

The format of the Emergency Action Checklist is presented in three levels of detail. The action item is printed in **bold** type. A further explanation and detail of the action item follows the bold type. References to detailed material located in this OSCP and applicable to the specific task are also noted.

After all IRT duties have been accomplished, or are in progress, the team members will continue the duties assigned to his/her position (**SECTION 4**). The team members will be responsible for those duties until relieved. The team members should confirm the level of response required with the Incident Commander (IC) before proceeding with those duties.

In smaller incidents, an employee may be assigned the responsibilities of more than one position. If so, he/she should approach the combined duties in parallel with the most important duties (usually listed first) of both tasks receiving priority.

FIGURE 2.2
INITIAL RESPONSE ACTION CHECKLIST
OIL SPILL – SPILL DETECTION

Oil Spill

ANY PERSON DETECTING A SPILL OR THREAT OF A SPILL

☐ **1. Discontinue Operations**
- Activate the emergency shutdown.

☐ **2. Warn People in the Area of Hazards**
- Direct employees and contract workers to move well clear of the release in a crosswind or upwind direction.
- Warn personnel to avoid breathing fumes.
- Warn personnel to avoid igniting fumes.
- Notify emergency response on radio channel 3A of injured personnel.

☐ **3. Prevent Ignition**
- Exclude ignition sources from the area.
- Do not start electrical equipment or other engines in the area.

☐ **4. Report the Situation**
- Notify the Response Team Dispatch x4900 or radio channel 2D (see **SECTION 3**) as soon as possible and provide the following information:
  - The time of the incident.
  - The location of the incident.
  - Whether the incident caused any injury to personnel.
  - The type of oil spilled.
  - The amount of oil spilled.
  - The status of the source.

☐ **5. Keep Clear of the Hazardous Area**
- Do not try to remedy the situation alone.
- Keep the spill area under surveillance until danger of fire or explosion has been eliminated.

FIGURE 2.3
INITIAL RESPONSE ACTION CHECKLIST
OIL SPILL – OPERATIONS PERSONNEL

Oil Spill

OPERATIONS PERSONNEL

☐ 1. **Verify Safety of Personnel**

☐ 2. **Assess the Situation**
- Source of release.
- General extent of release.
- Status of shutdown.
- Number of injured and their condition.
- Initial site monitoring: benzene and LEL.
- Probable direction of vapors.
- Estimate quantity of release (see **SECTION 2**).
- Wind and weather conditions.
- Direction of movement (see **SECTION 2**).
- Status of ignition sources.

☐ 3. **Notify Shift Supervisor of the Incident** (see **SECTION 3**)
- If needed, notify Central Control Room to take suction on tank.

☐ 4. **Stop Release**
- Stop the source of the release or verify that source is stopped.
- Shut off transfer pumps, close all header and tank valves, and drain/pump remaining contents of hoses/pipelines back into tanks if feasible.

☐ 5. **Implement Site-Specific Response Strategy** (see **SECTIONS 2 and 7**)

☐ 6. **Document All Actions**

FIGURE 2.4
INITIAL RESPONSE ACTION CHECKLIST
OIL SPILL – SHIFT SUPERVISOR/INITIAL INCIDENT COMMANDER

Oil Spill

SHIFT SUPERVISOR/INITIAL INCIDENT COMMANDER

☐ 7. **Receive Report of Spill**
- Ascertain nature and severity of spill.
- Ensure safety of onsite personnel.
- Assume role of incident commander

☐ 8. **Notify the Emergency Response Coordinator (ERC), Fire Department, Fire Brigade and Contractors**
- Initiate Notifications as necessary (see **SECTION 3**)

☐ 9. **Activate Immediate Response Team**
- Brief members of the Immediate Response Team on the status of the incident.

☐ 10. **Notify Tesoro Spill Management Team**
(see **SECTION 3**)

☐ 11. **Contact appropriate personnel for Required Government Agency notifications.**
(see **SECTION 3**)

☐ 12. **If Necessary, Direct Rescue of Injured and Evacuate Area**
(see **SECTION 2**)
- Direct response personnel to don protective clothing, as appropriate, and remove injured to upwind area.
- Direct evacuation of employees and contract personnel to safe areas upwind from spill.
- Control ignition sources.

☐ 13. **Establish Command Center and Staging Areas**
(see **SECTION 4**)

☐ 14. **Document All Actions**
- Submit reports as required

FIGURE 2.5
INITIAL RESPONSE ACTION CHECKLIST
OIL SPILL – SAFETY OFFICER

Oil Spill

SAFETY OFFICER

☐ 1. **Evaluate Immediate Public Health and Safety Risks**

☐ 2. **Recommend Site Control Measures to Isolate Public from Possible Exposure**

☐ 3. **Assess Environmental Conditions**
- Air and water monitoring.

☐ 4. **Recommend Immediate Actions to be Taken by Onsite Response Team to Protect Health and Safety**

☐ 5. **Conduct Site Safety Evaluation**

☐ 6. **Develop Site Safety Plan**
(see **SECTION 5**)

☐ 7. **Document All Actions**

FIGURE 2.6
INITIAL RESPONSE ACTION CHECKLIST
PIPE RUPTURE/LEAK – SHIFT SUPERVISOR/INITIAL INCIDENT COMMANDER

Pipe Rupture/Leak

SHIFT SUPERVISOR/INITIAL INCIDENT COMMANDER

☐ **1. Report to Incident Site and Assess the Situation**
- The first person at the scene of the incident or assigned will assess the incident and report the nature and significance of the incident.

☐ **2. Collect Information Required for Initial Assessment**
- Location of the tank.
- Impact and/or hazards to other facilities.
- Extent of visible damage.
- Magnitude and direction of release.
- Material involved in release.
- Potential of ignition sources.
- Impact to drain systems, etc.

☐ **3. Notify the Emergency Response Coordinator, Fire Department, Fire Brigade and Contractors**
(see **SECTION 3**)
- Initiate notifications as necessary

☐ **4. Activate Immediate Response Team**
- Brief members of the Immediate Response Team on the status of the incident.

☐ **5. Report Information Gathered to Tesoro Spill Management Team**
(see **SECTION 3**)

☐ **6. Initiate Required Government Agency Notifications**
(see **SECTION 3**)

☐ **7. If Necessary, Direct Rescue of Injured and Evacuate Area**
(see **SECTION 2**)
- Direct response personnel to don protective clothing, as appropriate, and remove injured to upwind area.
- Direct evacuation of employees and contract personnel to safe areas upwind from spill.
- Control ignition sources.

☐ **8. Formulate Incident Action Plan**
- Consider need to block drains, deploy boom, shutdown ignition sources, diking, containment, equipment and personnel availability, etc.

☐ **9. Coordinate Contractors Involved in Response**

☐ **10. Verify Safety of Response Personnel**

☐ **11. Document All Actions and Observations**
- Submit reports as required

FIGURE 2.7
INITIAL RESPONSE ACTION CHECKLIST
PIPE RUPTURE/LEAK – SAFETY OFFICER

Pipe Rupture/Leak

SAFETY OFFICER

☐ **1. Evaluate Immediate Public Health and Safety Risks**
- Attend to injured personnel

☐ **2. Recommend Site Control Measures to Isolate Public from Possible Exposure**

☐ **3. Assess Environmental Conditions**
- Air and water monitoring.

☐ **4. Recommend Immediate Actions to be Taken by Immediate Response Team to Protect Health and Safety**

☐ **5. Conduct Site Safety Evaluation**

☐ **6. Develop Site Safety Plan**
(see **SECTION 5**)

☐ **7. Document All Actions**

FIGURE 2.8
INITIAL RESPONSE ACTION CHECKLIST
OTHER EQUIPMENT FAILURE – OPERATIONS PERSONNEL

Other Equipment Failure

OPERATIONS PERSONNEL

☐ 1. **Verify Safety of Personnel**
- Eliminate igniter source
- Notify the Response team Dispatch x4900

☐ 2. **Stop Release**
- Stop the source of the release or verify that source is stopped.
- Notify driver or pipeline operator as appropriate.
- Shut off transfer pumps, close all header and tank valves, and drain remaining contents of hoses/pipelines back into tanks.
- Truck Tank/Valve Leak – Shut down transfer and attempt to close valve or repair leak. Pump out any leaking tank compartments. Flush spilled oil into strip drains with water.
- Storage Tank Flange/Valve Leak – Stop transfer and tighten valve/ flange. If release continues, transfer tank contents to available tankage and repair and replace valve/flange
- Verify that dike drain valve is closed

☐ 3. **Assess the Situation**
- Source of release.
- General extent of release.
- Status of shutdown.
- Number of injured and their condition.
- Initial site monitoring: benzene and LEL.
- Probable direction of vapors.
- Estimated quantity of release (see **SECTION 2**).
- Wind and weather conditions.
- Direction of movement (see **SECTION 2**).

☐ 4. **Notify Shift Supervisor of the Incident**

☐ 5. **Implement Site-Specific Response Strategy** (see **SECTIONS 2 and 7**)
- Keep spill area under surveillance until danger of fire or explosion has been eliminated.

☐ 6. **Document All Actions**

FIGURE 2.9
INITIAL RESPONSE ACTION CHECKLIST
OTHER EQUIPMENT FAILURE – SHIFT SUPERVISOR/INITIAL INCIDENT COMMANDER

Other Equipment Failure

SHIFT SUPERVISOR/INITIAL INCIDENT COMMANDER

☐ ______ **1. Report to Incident Site and Assess the Situation**
- The first person at the scene of the incident or assigned will assess the incident and report the nature and significance of the incident.

☐ ______ **2. Collect Information Required for Initial Assessment**
- Location of the tank.
- Impact and/or hazards to other facilities.
- Extent of visible damage.
- Magnitude and direction of release.
- Material involved in release.
- Potential of ignition sources.
- Impact to drain systems, etc.

☐ ______ **3. Notify the Emergency Response Coordinator, Fire Department, Fire Brigade and Contractors**
(see **SECTION 3**)
- Initiate notifications as necessary

☐ ______ **4. Activate Immediate Response Team**
- Brief members of the Immediate Response Team on the status of the incident.

☐ ______ **5. Report Information Gathered to Tesoro Spill Management Team**
(see **SECTION 3**)

☐ ______ **6. Initiate Required Government Agency Notifications**
(see **SECTION 3**)

☐ ______ **7. If Necessary, Direct Rescue of Injured and Evacuate Area** (see **SECTION 2)**
- Direct response personnel to don protective clothing, as appropriate, and remove injured to upwind area.
- Direct evacuation of employees and contract personnel to safe areas upwind from spill.
- Control ignition sources.

☐ ______ **8. Formulate Incident Action Plan**
- Consider need to block drains, deploy boom, shutdown ignition sources, diking, containment, equipment and personnel availability, etc.

☐ ______ **9. Coordinate Contractors Involved in Response**

☐ ______ **10. Verify Safety of Response Personnel**

☐ ______ **11. Document All Actions and Observations**
- Submit reports as required

FIGURE 2.10
INITIAL RESPONSE ACTION CHECKLIST
OTHER EQUIPMENT FAILURE – SAFETY OFFICER

Other Equipment Failure

SAFETY OFFICER

☐ **1. Evaluate Immediate Public Health and Safety Risks**
- Attend to injured personnel

☐ **2. Recommend Site Control Measures to Isolate Public from Possible Exposure**

☐ **3. Assess Environmental Conditions**
- Air and water monitoring.

☐ **4. Recommend Immediate Actions to be Taken by Immediate Response Team to Protect Health and Safety**

☐ **5. Conduct Site Safety Evaluation**

☐ **6. Develop Site Safety Plan**
(see **SECTION 5**)

☐ **7. Document All Actions**

2.3 SAFETY CONSIDERATIONS

- A Site Safety Plan form is located in **SECTION 5**. The designated on scene Safety Officer should use this form as a checklist while performing initial site safety assessment.
- Air monitoring must be conducted in all spills to water or land in order to determine airborne concentrations of hazardous vapors, potential oxygen deficient and explosive atmospheres, so that safety precautions can be taken. Tesoro air monitoring equipment used to test breathing air in the vicinity of a spill includes a hand held iTX Multi-Gas Monitor. These monitoring devices are located in the Wharf Control House and Logisitics Control House. Equipment testing and calibration are done daily and monthly.
- A qualified person will be designated by the RP/IC to conduct initial air monitoring. Air monitoring shall include testing the breathing space where response personnel will be exposed during recovery and clean up operations. C0, So2, H2S, and Benzene will be tested for and measurements for explosive atmospheric conditions, including 02, and LEL will be taken before initial responders will be allowed to enter the area of impact.
- Responders must wear appropriate personal protective equipment (PPE). This will be determined by the toxicity of the spilled material and results of initial air monitoring. Personal flotation devices (PFD) are required when working on or near the water.
- Only trained personnel are allowed to participate in response activities.
- Careful consideration should be given to containment actions conducted during inclement weather or adverse conditions, such as high winds or rapid currents.
- Eliminate all ignition sources and keep boats as far as possible from the spill area.
- Avoid contact with the spilled product and ensure that the area remains secure to boat and air traffic.
- Be aware of potential changes to position and movement of slick due to tidal action.

2.4 EVACUATION AND SHELTER-IN-PLACE

The Evacuation routes and check-in areas are shown on **FIGURE 2.12.** Sheltering in place within this refinery has application to a toxic material release and other serious events such as tornado, severe thunderstorm, and earthquake. None of our buildings would be considered adequate shelter from an explosion (no bomb shelters).

In the event of a flammable mixture release or potential explosion, evacuate in a direction away from the release or vapor cloud. Do not start a vehicle (a source of ignition). If you are in a running vehicle, carefully retreat away from the vapor cloud. If you are in a building or on a structure you should evacuate.

In the event of a toxic material release, severe weather event, or earthquake, or when hearing the shelter-in-place alarm, assess your position relative to nearby shelters and move appropriately to the best location. Buildings in the refinery have been grouped in two categories, Primary and Secondary Shelters. Primary shelters should be preferred because of better structural integrity, facilities, and communications. Secondary buildings are less preferred. All can be improved by closing doors and windows, shutting off outside ventilation and locating yourself deeper into the structure such as offices or closets. If respirators are available, use them.

A toxic release usually will be accompanied by a visible vapor cloud or odor, either of which can give limited warning that you are in harm's way. Move upwind or crosswind to the nearest shelter, even if only the cab of a truck. If the wind is heavy, the plume will be turbulent and the threat may pass over quickly. If the wind is light, the plume may remain concentrated, but you may have greater opportunity to escape the plume or to secure your shelter. The predominant wind direction is from the north. Winds are typically calm in the morning and build to an average of 15 mph in the afternoon. Windsocks are located throughout the refinery to indicate current wind direction. Steam plumes are another indicator of wind direction. A source of pressured water (fire hydrant or hose) can be used to create an umbrella spray that can disperse and perhaps neutralize the toxic.

A toxic release should not be underestimated. If the material is unknown, consider the worst, keep a cool head, and do all possible to reduce your exposure.

For persons already in a building, don't leave. A designated building captain will shut down the ventilation system. Occupants should move to the down wind side of the building and occupy rooms least likely to be exposed. Grouping will help people to stay calm and consider additional protections. Conserve phone use for urgent messaging. Do not open doors or windows to check conditions unless the threat has obviously passed, or you have been notified by a response agent or the "all clear" signal.

For a tornado, severe thunderstorm, or earthquake, a nearby shelter that can withstand the high winds, flying debris, shock waves, and provide protection against power lines should be sought out. These buildings include: Administration building, lunchrooms, shops, pump rooms, control rooms.

2.4.1 POTENTIAL TOXIC EXPOSURES

Tesoro does not store or use any of the EPA listed toxic materials in quantities greater than the threshold values. (b) (7)(F) [redacted]

Most hydrocarbon products, which although may be toxic, are typically in liquid form and will not spread randomly through the atmosphere as does gaseous materials. Many household items and commonly used industrial materials are toxic and should be handled strictly in accordance with respective instructions. Nothing in this document is intended to minimize the threat of toxic materials.

(b) (7)(F)

[redacted]

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2.4.2 REFINERY ALARM SIGNALS

Refinery Emergency Alarm
(continuous short tones from the Emergency alarm system).
The fire, hazardous material release, or emergency alarm consists of sounding the Emergency alarm: **in short tones.** Available, information about the release (location, material, danger) will be announced over the emergency alarm broadcast system.

Shelter-in-Place Alarm
(continuous tone from the Emergency alarm).
The alarm for all personnel to shelter in place is continuous tones from the Emergency alarm. Available, information about the release (location, material, danger) will be announced over the emergency alarm broadcast system.

Refinery Alarm Testing
The refinery alarms are tested each Monday at 4:00 PM.
Responder's emergency contact are tested each Monday at 4:00 p.m via SWN.

2.4.3 WHAT TO DO WHEN AN ALARM IS SOUNDED

When the emergency alarm is sounded: (short tones from the Emergency alarm) **all non-operational personnel evacuate.**

All engine driven equipment, including cranes, vehicles, and welders will be secured and shut down. Workers shall walk away from their area of work in a direction that takes them away and up-wind or cross-wind from the area of alarm. Avoid using vehicles that may be a source of ignition to a vapor release, or an obstruction to emergency response equipment. The primary evacuation direction is towards the refinery entrance (South), as shown on **FIGURE 2.11**.

Tesoro employees should assemble and be accounted for at the following locations:

Employee Group	Reporting Location
Emergency Response Team members	(b) (7)(F) [redacted]
Mechanical Personnel	
Engineering and Administration	
Operational personnel	
Storehouse personnel	
Contractors	

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

There are several options for secondary evacuation. There are crash gates along the east fence and at the northwest end of the refinery. If there is hazard in evacuating toward the primary direction, then use these alternate escape routes. In order to prevent hazard in potential rescue operations, evacuees need to report their location and condition to anyone (gate guard, supervisor, by phone or radio) that can pass on the information to the emergency response team.

When the shelter-in-place alarm is sounded: (continuous tones from the Emergency alarm) observe wind direction - Locate source of release - Move away from the plume and seek shelter immediately.

All hot work and confined space entry must stop. Secure dangerous equipment only as can be achieved safely allowing time to escape the plume. Take a moment to observe conditions:

- wind speed and direction,
- location of release,
- can you see a plume (vapor cloud),
- where is the nearest shelter,
- is there a better shelter within your ability to get to,
- can you safely evacuate - where?

A visible cloud is created by the material vaporizing as it escapes containment. Unseen toxic material can be present beyond the visible part of the vapor cloud. You might smell its presence long before it concentrates to toxic levels. If you cannot see a vapor cloud, go immediately to the nearest shelter and prepare for the worst case. If you can see the vapor cloud or if you have knowledge of the release and conditions, then take evasive action away from the plume path and towards a secure shelter. After entering a shelter, secure the place from infiltration - close doors and windows - shut off ventilation systems - isolate yourself as much as possible.

Water sprays are good protection. A fire hose or monitor can knock down or aspirate vapor clouds. Water can neutralize acidic vapors and gases.

<u>For Maintenance Personnel</u>

When the refinery emergency alarm: (short tones from the Emergency alarm) (b) (7)(F) [redacted]

All Tesoro maintenance personnel are to go to the shop and report to their supervisor. Maintenance personnel may be requested to assist with response as needed and if safe to do so. Other non-operating Tesoro personnel (engineers, inspectors, etc.) who may be on a process unit at the time of the alarm proceed to their respective office or evacuation area via a safe route (upwind or crosswind of the release).

When the shelter in-place alarm is sounded: (long tones on the Emergency alarm) **Observe wind direction - Locate source of release - Move away from the plume or seek shelter immediately.**

Secure dangerous equipment only as can be achieved safely allowing time to escape the plume. Shelter in place as described above.

<u>**For Office Personnel**</u>
(personnel who's normal work areas are in the Administration Building, Laboratory, Maintenance Shops, Storehouse, Engineering Annex Trailers, Storehouse and Training Center, or those in close proximity to these buildings):

When the refinery emergency alarm is sounded: (short tones from the Emergency alarm) (b) (7)(F) [redacted]

When the shelter-in-place alarm is sounded: (1 short tone, 1 long tone) **Observe wind direction - Locate source of release - Move away from the plume or seek shelter immediately.**

All personnel will secure themselves inside an appropriate enclosure (depending on direction and wind strength) and take measures to minimize infiltration into that temporary shelter. All <u>building captains</u> will shut down the ventilation system of their respective building and assure all occupants of the alarm and appropriate response. Do not attempt to go outside or to open any doors or windows until cleared by a response agent or the “all clear” signal.

<u>**Arrival of Emergency Response Equipment**</u>
During an emergency, response equipment and personnel (e.g., the Salt Lake City Fire Department, contractors, or mutual aid members) arrive at Gate One (see **FIGURE 2.12**). Tesoro stages the incoming units at Gate One until communication is established with Tesoro’s Incident Command. During an emergency, Security will not allow anyone into the refinery until verified with Incident Command except emergency response personnel. Responders will be provided with a Facility Diagram (**FIGURE C.1**) to help them navigate within the refinery. Utility lines are illustrated on **FIGURES C.2** through **C.6**.

Many times staging is all that is required from the incoming units, but evacuating refinery and contract personnel should remain clear of staging area and mindful of incoming emergency response units.

Use of Refinery Radios during an Emergency

Emergency response units will communicate on reserved channels 1A, 1B, and 1C for Fire Brigade, Hazmat, and Rescue/Medical respectively. The channels are continuously monitored by the Emergency Staging and by the EOC. Any radio can be programmed to scan (receive only) the channels while operating on another designated channel. It is necessary to switch to a specific channel in order to have two-way emergency communication.

Essential Operating Personnel Actions during the Evacuation Alarm

All Tesoro operating personnel are to report to their respective control rooms or as designated by radio to receive additional instructions. Operating personnel that are off shift, but otherwise in the refinery for meetings or training are considered non-essential and should evacuate along with other office personnel.

Depending on the nature of the emergency, the shift supervisor (for an escalating emergency) or the Incident Commander will determine if operations personnel are to evacuate from the unit. If an operations personnel evacuation is called, operators are to follow the appropriate Safe Off Process Procedures for unit evacuation (time permitting) and evacuate to the appropriate assembly area.

Accounting for People

After an evacuation has occurred and all personnel have assembled at the gathering areas shown on **FIGURE 2.12**, it is important that all individuals be accounted for.

- Building Captains are responsible for performing this check for their appropriate group of employees.
- Shift Supervisors are responsible for ensuring that all subordinate personnel are accounted for.
- Contractor Supervisors are responsible for accounting for their employees and informing the appropriate Tesoro contractor job representative that all their employees have been accounted for.

If someone is unaccounted for and suspect to be involved in the emergency, immediately notify anyone with radio or phone access to the Incident Commander.

It may be appropriate for some personnel to evacuate by alternate routes. If this occurs it will be via one of the fence line gates. Fence line gates are equipped with crash gate mechanisms for emergency evacuations. If these exits are used, evacuees should move to a safe location and report their location. This reporting may be difficult since the control rooms will be busy and other offices may be evacuated. Options to try would be: Gate guard, 801-521-4935; or Emergency Staging Office, 801-366-2004 ; or by radio. It is important for the response crew to know your location otherwise they may be in jeopardy looking for you.

All persons are to remain at the evacuation areas until the "all clear" signal has been sounded or until they have been dismissed by the Incident Commander.

In the event injured personnel require transportation go the hospital, to Northeast on N 400 W towards W 1000 N. N 400 W becomes W 100 N. Turn right onto Beck St., Beck St. becomes N 300 W. Turn Left onto W North Temple/US-89 then turn Right onto N State St/US-89. The hospital is located on the right.

Intermountain Health Care
36 S. State St., #2200
Salt Lake City, UT 84111
(801) 422-2000

2.4.4 COMMUNITY EVACUATION PLAN

The decision to evacuate or shelter-in-place is typically recommended by the Mayor, Fire, or Police Chiefs, or other local officials within a county. The appropriate officials will prepare in advance for a potential evacuation of county residents. In Salt Lake County, Millett, the Hazmat Coordinator, is responsible for recommending evacuation or shelter-in-place.

Detailed information regarding evacuation procedures within Salt Lake County is available in the Countywide Emergency Operations Plan. The countywide plan details the evacuation routes established for populations at risk, traffic control systems, security, and staging areas.

Information regarding Salt Lake County Emergency Operations Plan can be obtained directly from the Hazmat Coordinator at (801) 538-3757. Additional agencies involved with community evacuation include the Salt Lake City Fire Department and Police Department. Contact numbers for these agencies are as follows:

Ambulance 911
Hospital (801) 422-2000
Dispatch (801) 550-1400
Fire (801) 799-4103
Sheriff (801) 468-3899

In an Emergency, dial 911
Notification of residents will generally be accomplished by using the Emergency Alert System (EAS), telephone, door-to-door, siren warnings, or any other means deemed sufficient for notification. A description of the EAS is provided in **SECTION 7** and the Salt Lake County Emergency Operations Plan.

2.5 SOURCE CONTROL AND MITIGATION

This section provides general guidance for spill mitigation. Each 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. **FIGURE 2.19** describes these mitigation procedures.

FIGURE 2.12
SPILL MITIGATION PROCEDURES

TYPE	MITIGATION PROCEDURE
Failure of Transfer Equipment	Terminate transfer operations and close block valves. Drain product into containment areas, if possible. Eliminate sources of vapor cloud ignition by shutting down all engines and motors.
Tank Overfill/Failure	Shut down or divert source of incoming flow to tank. Transfer fluid to another tank with adequate storage capacity, if possible. Ensure that dike discharge valves are closed. Monitor diked containment area for leaks and potential capacity limitations. Begin transferring spilled product to another tank as soon as possible.
Piping Rupture/Leak (under pressure and no pressure)	Shut down pumps. Pump the line back to contained areas, if possible. Alert nearby personnel of potential safety hazards. If piping is under pressure, and there is a leak in piping, relieve pressure by draining into containment area or back to a tank, if possible, then repair line according to established procedures. Shut down sources of vapor cloud ignition and evacuate personnel, if necessary, until the leak is controlled.
Explosion/Fire	Personnel safety is the first priority. Evacuate non-essential personnel or personnel at risk of injury. Shut down transfer or pumping operation. Attempt to divert or stop flow of product to the hazardous area, if it can be done safely. Shut down engines and motors. Eliminate sources of vapor cloud ignition. Control fire before taking steps to contain spill.
Manifold Failure	Terminate transfer operations immediately. Isolate the damaged area by closing block valves on both sides of the leak/rupture. Shut down engines and motors. Eliminate sources of vapor cloud ignition. Drain fluids back into containment areas, if possible.

2.6 SPILL MONITORING

- Surveillance of an oil spill should begin as soon as possible following discovery to enable the Incident Commander and other response personnel the ability to assess spill size, movement, and potential impact locations(s).

- 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.

- Use surface vessels to confirm the presence of any suspected oil slicks, IF SAFE TO DO SO. If possible, direct the vessels from the aircraft and photograph the vessels from the air 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 utilized, 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). Utilize 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 document the location and movements of the spill. However, this method may not be safe if the spill involves a highly flammable product.

- Surveillance is also required during spill response operations in order to gauge effectiveness of response operations, to assist in locating skimmers, and to continually assess size, movement, and impact of spill.

- An Oil Spill Surveillance Form is included in **FIGURE 2.13**.

- A list of helicopter and aircraft companies is included in **TABLE 3.9**.

- A Glossary of Standard Oil Spill Surveillance Forms are included in **FIGURE 2.14**.

FIGURE 2.13
OIL SPILL SURVEILLANCE FORM

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.

<u>General Information</u>

Date ____________ Time _____________ Case name ____________________

Observer's name _______________Observer's affiliations ______________________

Current stage of tide (flood, ebb, slack) __________________

On-scene weather (wind, sea state, visibility)

TIDES: HIGH(s) ______ ______ MAX CURRENT: _____ _____
LOW(s) ______ ______ (W/VELOCITY FLOOD) _____ _____

DAYLIGHT: SUNRISE ______ SLACK ______ ______
SUNSET ______ WATER ______ ______

WIND: SPEED ______ DIRECTION _______

CURRENT CONDITIONS:

____
____

FORECAST (NEXT OPERATIONAL PERIOD):

____
____

Platform (helicopter, fixed-wing aircraft, boat)_________________________________

Flight path/trackline ____

Altitude where observation taken (ft) _______________________________________

Location of oil's source (if known) ____________________________________

Areas not observed (e.g., foggy locations, restricted air spaces, shallow water areas

____
____

Oil Observations

Slick location(s) ____________________

Latitude ____________ Longitude ________________ (central point)

Slick dimension(s) ____________________

Orientation of slicks(s) ____________________

Description of oil distribution (e.g., as windrows, streamers, pancakes, or patches) ____________________

____

Color and appearance (e.g., rainbow, dull or silver sheen, black, or brown in color, or mousse)

____

Percent coverage _______________

Is oil recoverable (Y/N)? _________________
(examples or recoverable oil types include black oil, mousse, and heavy dull– or dark – colored sheens)

Considerations

1. ***During surveillance flights, travel beyond known impacted areas to check for oil beyond these areas.***
2. ***Include the name and phone number of the person making the observations.***
3. Clearly describe the locations where oil is observed, as well as the areas where no oil has been seen.

OTHER OBSERVATIONS

Response Operations

Skimmer deployment ***(general locations where skimmers are working).***
Are they working in the heaviest concentration of oil? Describe. ____________________

____

Boom deployment
Describe general locations of boom(s). ____________________
Does the boom contain oil? ________ ***Is oil entraining under the boom?*** ____________________

Environmental Observations

Locations of any convergence line, rip tides, and sediment plumes

____

Locations of kelp beds, seagrass beds, and other features that could be mistaken for oil

____

General description of wildlife present in area (locations and approximate numbers of birds and marine mammals)

BIRDS ____

____

MARINE MAMMALS____

____

General Comments:

____

____

__

FIGURE 2.14
GLOSSARY OF STANDARD OIL SPILL OBSERVATION TERMS

Black oil
A black or very dark brown layer of oil. Depending on the quantity spilled, oil tends to quickly spread out over the water surface to a thickness of about 1 millimeter (0.04 inches). However, from the air, it is impossible to tell how thick a black oil layer is.

Convergence line
A line on the water surface where floating objects and oil collect. A convergence can be in the interface between two different types of bodies of water, or it can be caused by a significant depth change, tidal changes, or other common phenomena. Convergences are common in the marine environment.

Dispersion
The breaking up of an oil slick into small droplets that are mixed into the water column by breaking waves and other sea surface turbulence.

Emulsification
The formation of a water-in-oil mixture. Different oils exhibit different tendencies to emulsify, and emulsification is more likely to occur under high energy conditions (strong winds and waves). An emulsified mixture of water in oil is commonly called “mousse”; its presence indicates a spill that has been on the water for some time. See also **mousse**.

Entrainment
The loss of oil from containment when it is pulled under a boom by a strong current. Entrainment typically occurs from booms deployed perpendicular to currents greater than 1 knot (0.5 meter per second).

Mousse
An emulsified mixture of water in oil. Mousse can range in color from dark brown to nearly red or tan, and typically has a thickened or pudding-like consistency compared with fresh oil. Incorporation of up to 75 percent water into the oil will cause the apparent volume of a given quantity of oil to increase by up to four times. See also emulsification.

Pancakes
Isolated, roughly circular patches of oil ranging in size from a few feet across to hundreds of yards (or meters) in diameter. Sheen may or may not be present.

Recoverable oil
Oil in a thick enough layer on the water to be recovered by conventional techniques and equipment. Only black or dark brown oil, mousse, and heavy sheens (which are dull brown in color) are generally considered to be thick enough to be effectively recovered by skimmers.

Sheen
A very thin layer of oil (less than 0.0001 inches or 0.003 millimeters in thickness) floating on the water surface. Sheen is the most commonly-observed form of oil during the later stages of a spill. Depending on thickness, sheens range in color from dull brown for the thickest sheens to rainbows, grays, silvers, and near-transparency in the case of the thinnest sheens.

Slick
Oil spilled on the water, which absorbs energy and dampens out surface waves, making the oil appear smoother or slicker than the surrounding water.

Streamers
A narrow line of oil, mousse, or sheen on the water surface, surrounded on both sides by clean water. Streamers result from the combined effects of wind, currents, and/or natural convergence zones. Often, heavier concentrations of mousse or sheen will be present in the center of a streamer, with progressively lighter sheen along the edges. Streamers are also called “fingers” or “ribbons”.

Tarballs
Weathered oil that has formed pliable balls or patches that float on the water. Tarballs can range in diameter from a few millimeters (much less than an inch) to a foot (0.3 meters). Depending on how weathered, or hardened, the outer layer of the tarball is, sheen may or may not be present.

Weathering
A combination of physical and environmental processes, such as evaporation, dissolution, dispersion, and emulsification, which act on spilled oil to change its physical properties and composition.

Windrows
Streaks of oil that line up in the direction of the wind. Windrows typically form early during a spill when the wind speed is at least 10 knots (5.1 meters per second). Sheen is the form of spilled oil that most frequently windrows.

2.6.1 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 manpower and equipment requirements;
- Determine disposal and interim storage requirements.

Actual spill volumes are often unavailable or inaccurate so that field estimates are usually required. Some rapid methods to estimate spill size are as follows:

Catastrophic Failure

- If a spill occurs during transfer operations, the total spill volume can be estimated by multiplying 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).

<u>Rule of Thumb on Line Volumes</u>

Line size (inches)^2 = bbls/1000 ft.
Inside diameter

Note: 12” pipe and smaller is I.D. dimension, 14” pipe and larger is O.D. dimension.

For Example:

6” = 36 bbls/1000 ft. of line
16” (15” I.D.) = 225 bbls/1000 ft.

- A high percentage of spills are caused by internal or external corrosion or hole in hose. Spills resulting from a flange or hose leak will likely occur at a significantly lower rate.

For this purpose, the following calculations and techniques may be used:

$$\text{Vol (gal)} \sim 1800 \times A\ (\text{in}^2) \times T\ (\text{hrs}) \times (P)^{1/2}\ (\text{psig})$$

The approximate volume in gallons approximately equals 1,800 times the area of the hole (sq. in.) times the time of leakage (hours) time the square root of the pipe line operating pressure (psig).

This approximation is reasonable when the diameter of the hole is less than ¼ the pipes inside diameter, the liquid is packed over the hole, and when frictional losses are considered negligible.

Another field technique:

- Divide the number 10,286 by the number of seconds it takes to fill a five gallon pail.
- A simpler rule of thumb would be to divide 10,000 by the number of seconds to collect five gallons for the approximate flow in barrels per day.

<u>Estimated drip rates:</u>

One drop/second	=	1 gallon per day
Thin stream breaking into drops	=	24 gallons per day
Small stream (about 1/8 inch)	=	84 gallons per day
Large stream (about ¼ inch)	=	336 gallons per day

- For tank overfills, the total volume would be limited to the elapsed time multiplied by the pumping rate.

- In the event that a more accurate method is not available, an estimate of spill size can be made by visual assessment of the surface area and thickness. Refer to the following procedures:

  - Estimate the coverage dimensions of each part of the spill in feet or miles using whichever of the six appearances (**FIGURE 2.15**) that may be observed in the spill.

  - Multiply the dimensions in feet or in miles by the appropriate factor from the table. Add the individual parts of the spill areas together.

  - The combined result is the estimated volume of the spill in gallons or in barrels of oil.

  - Volumes that are calculated less than one barrel should be reported in gallons. Spills that are calculated less than a gallon should be reported as "less than one gallon" rather than a decimal amount.

- In the event of a large spill that encompasses several miles, utilize the chart in **FIGURE 2.16** to estimate the spill volume.

  Example:

  A spill has created a "silvery" slick 0.25 mile wide by 2.0 miles long. From **FIGURE 2.15**, the amount of oil would be 50 gallons/square mile; and from **FIGURE 2.16**, the area would be 0.500 sq. mi. Therefore, 50 gallons/square mile X 0.500 square miles equals 25.0 gallons of oil spilled.

  If the quantity cannot be accurately determined, then the best initial estimate discharged should be reported to the Federal and State On-Scene Coordinators. As more accurate estimates are confirmed, they should also be reported.

FIGURE 2.15
SPILL ESTIMATION FACTORS

DEFINITIONS	GALLONS OF OIL PER SQUARE MILE
barely visible	25
silvery	50
slightly colored	100
brightly colored	200
dull	666
dark	1332

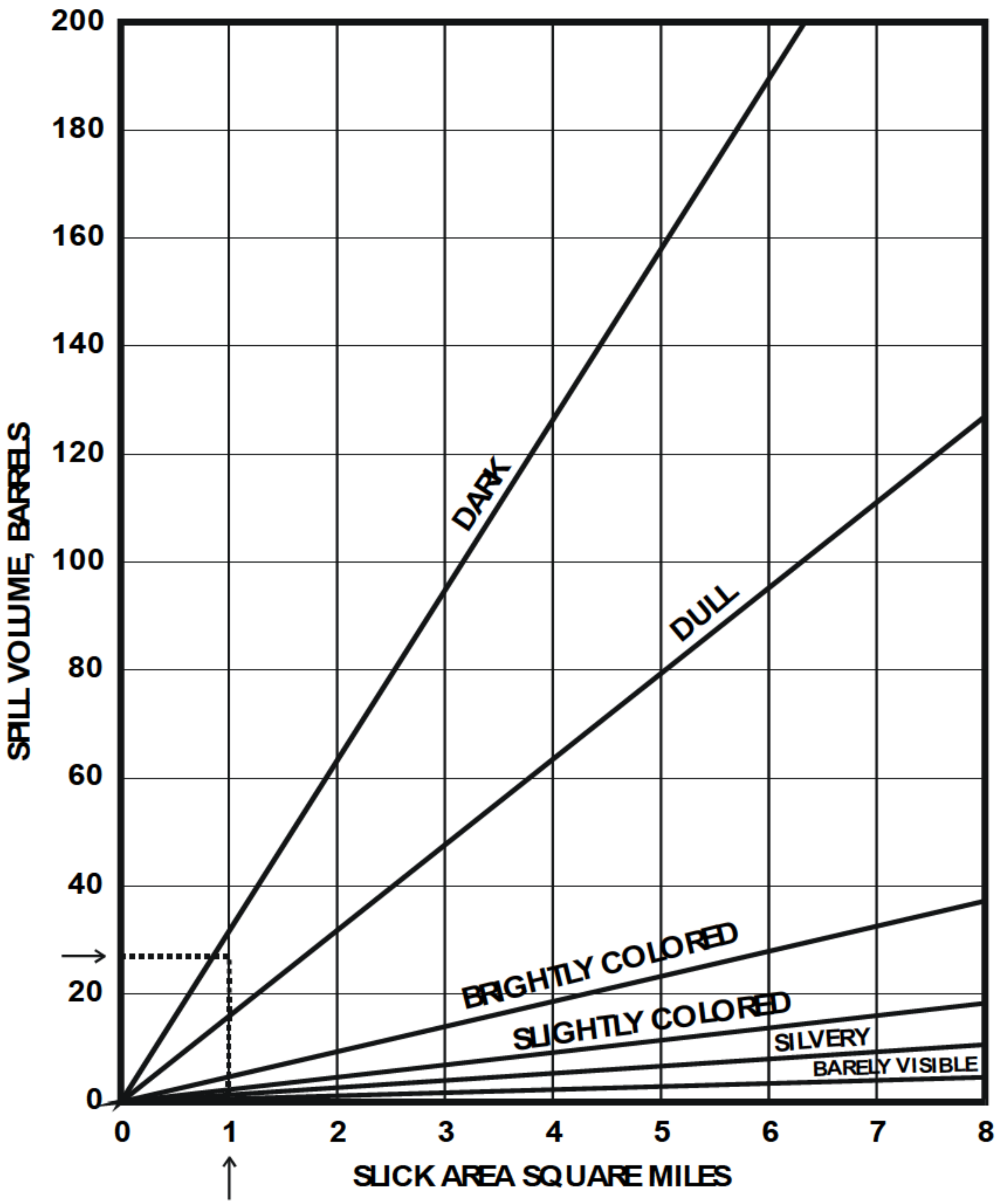
FIGURE 2.16
Visual SLICK SIZE IN FRACTION OF A SQUARE MILE CHART

LENGTH																							
	(FEET)											(MILES)											
WIDTH	100	200	300	400	500	600	700	800	900	1000	1200	1/4	½	3/4	1	2	3	4	5	6	7	8	9
10																				0.011	0.013	0.015	0.017
20																	0.013	0.015	0.019	0.023	0.026	0.030	0.034
30																0.011	0.017	0.023	0.028	0.034	0.040	0.045	0.051
40																0.015	0.023	0.030	0.038	0.046	0.053	0.061	0.068
50															0.010	0.019	0.028	0.038	0.047	0.057	0.066	0.076	0.085
60					LESS THAN 0.010 SQUARE MILES										0.011	0.023	0.034	0.045	0.057	0.068	0.079	0.091	0.102
70														0.010	0.013	0.026	0.040	0.053	0.066	0.080	0.093	0.106	0.119
80														0.011	0.015	0.030	0.045	0.060	0.076	0.091	0.106	0.121	0.136
90														0.013	0.017	0.034	0.051	0.068	0.085	0.102	0.119	0.136	0.153
100													0.010	0.014	0.019	0.038	0.057	0.076	0.095	0.113	0.132	0.152	0.170
150													0.014	0.021	0.028	0.057	0.085	0.113	0.142	0.1700.	0.199	0.227	0.256
200												0.010	0.019	0.028	0.038	0.076	0.114	0.152	0.189	0.228	0.265	0.303	0.341
300									0.010	0.011	0.013	0.014	0.028	0.042	0.057	0.113	0.171	0.227	0.284	0.341	0.397	0.455	0.511
400							0.010	0.011	0.013	0.014	0.017	0.019	0.038	0.057	0.076	0.151	0.226	0.303	0.379	0.455	0.530	0.606	0.682
500					0.010	0.011	0.013	0.014	0.016	0.018	0.022	0.024	0.047	0.071	0.095	0.189	0.284	0.3780.4 55	0.472	0.518	0.662	0.756	0.852
600				0.010	0.011	0.013	0.015	0.017	0.019	0.022	0.026	0.028	0.057	0.085	0.117	0.227	0.341	0.455	0.568	0.683	0.795	0.911	
1/4 MILE		0.010	0.014	0.019	0.024	0.028	0.033	0.038	0.043	0.047	0.056	0.066	0.125	0.187	0.250	0.500	0.750						
½ MILE	0.0100	0.019	0.028	0.038	0.047	0.057	0.066	0.076	0.085	0.095	0.114	0.125	0.250	0.375	0.500								
3/4 MILE	0.014	0.028	0.042	0.057	0.071	0.085	0.099	0.114	0.128	0.142	0.171	0.187	0.375	0.562	0.750		GREATER THAN ONE (1) SQUARE MILE						
1 MILE	0.019	0.038	0.057	0.076	0.095	0.117	0.133	0.152	0.171	0.189	0.227	0.250	0.500	0.750									
2 MILE	0.038	0.076	0.113	0.151	0.189	0.227	0.265	0.304	0.342	0.379	0.455	0.500											
3 MILE	0.057	0.114	0.171	0.228	0.284	0.341	0.398	0.455	0.512	0.568	0.673	0.750											
4 MILE	0.076	0.152	0.227	0.303	0.378	0.455	0.530	0.607	0.683	0.758	0.910												
5 MILE	0.095	0.189	0.284	0.379	0.472	0.568	0.662	0.759	0.854	0.948													

ONE SQUARE MILE = 27.878×10^6 SQUARE FEET

FIGURE 2.17

ESTIMATIONS OF SPILLED OIL VOLUMES FROM SLICK APPEARANCES (Large Volumes)



2.6.2 MONITORING AND PREDICTING SPILL MOVEMENT (TRAJECTORIES)

Factors Affecting Oil Movement

The prevailing climatic and hydrographic conditions at the time of a spill can influence a variety of response factors and should be quantified to the extent practical and as soon as possible following the discovery of a spill. Key climatic and hydrographic conditions and affected response factors are:

- Wind speed and direction
  - Aquatic spill trajectories, (When winds are strong, the oil will move at approximately 3.4 percent of the wind speed in the same general direction.)
  - vapor plume dispersions,
  - boom deployment, technique effectiveness,
  - vessel and aircraft safety
- Current speed and direction
  - Aquatic spill trajectories,
  - boom deployment,
  - technique effectiveness,
  - shoreline access restrictions
- Visibility
  - Spill movement tracking
  - surveillance
  - aircraft and vessel safety.
- Temperature
  - Spill volatility,
  - worker productivity and safety,
  - equipment effectiveness

Wind speed and direction may need to be approximated using best judgment. If an accurate estimate is required, contact the National Weather Service (see **SECTION 3**).

Current speeds and directions may be estimated by pacing off a 100-foot section of shoreline, throwing a stick or orange into the water upcurrent of the section and timing how long it takes the stick/orange to traverse the 100-foot area. The direction of stick/orange movement will also approximate the surface current direction combined with the effects from local winds, if present. The time required (in seconds for the stick/orange to move 100 feet is divided into 100 to estimate current speed in feet per second (fps). The resulting fps is then multiplied by 0.5921 to convert the speed into knots. Selected conversions are provided below:

0.25 kt =	100 feet/240 seconds (0.42 fps)
0.5 kt =	100 feet/120 seconds (0.83 fps)
1.0 kt =	100 feet/60 seconds (1.67 fps)
1.5 kt =	100 feet/40 seconds (2.5 fps)

Visibility is determined by visual estimates concerning both the horizontal and vertical distances within which objects are clearly visible. The vertical visibility (or ceiling) is typically limited by low cloud cover or overcast conditions but can also be dramatically reduced by heavy fog. Lateral visibility is influenced by fog or heavy rain or snow. In general, normal aircraft operations are restricted to ceilings greater than 500 feet and horizontal visibility in excess of 0.5 miles. Vessel operations are not affected by ceilings but should be discontinued when horizontal visibility is less than a few hundred feet.

Temperature can be determined using an outdoor thermometer or by calling the local weather service or airport. Only temperatures below freezing or above 80 to 90° are of concern to oil spill response operations. Temperatures above or below this range can adversely affect productivity and the health and safety of response personnel.

The temperature gradient at the Salt Lake Refinery ranges from a mean temperature of 30°F in the winter to 79°F in the summer. Average precipitation ranges from 3.1 inches a month in the spring to 1.0 inch a month in the summer. Winters are moderately cold, and spring comes early except at higher elevations.

In the event of a spill, Tesoro Spill Management Team will assess the potential impact of weather using NOAA forecasts for regional information, local forecasts from the National Weather Service, and/or actual field weather conditions. Additional real time weather information for the State can be found at the following web sites:

- www.wx.com
- www.nws.noaa.gov
- www.weather.com

Methods Available For Predicting Slick Movements

To determine the potential impacts of an oil spill and to aid in response operations, it is essential to predict the direction of oil movements. The initial direction of the oil's movement should be determined visually. Once the direction and speed of wind and current are known, a short-term projection can be made by performing a simple vector addition analysis.

For a large spill, more sophisticated predictions would be generated by the Scientific Support Coordinator using the National Oceanic and Atmospheric Administration (NOAA) Oil Spill Simulation Model (OSSM), or the Company will utilize the SpillNet Model. These techniques are briefly discussed below.

NOAA Oil Spill Simulation Model

The Federal On-Scene Coordinator (FOSC) would access trajectory information generated by the NOAA Oil Spill Simulation Model. This information, supplemented by on-scene observations, would be analyzed and the approximate location of the oil during various time intervals would be projected onto a digitized map of the region. Different simulations are possible as conditions at the spill site change.

Refer to **FIGURE 2.18** for a form to provide trajectory coordinator with information to calculate trajectory models.

FIGURE 2.18
OIL SPILL TRAJECTORY FORM

INCIDENT INFORMATION

Company:________________ Contact:_______________ Phone:_____________ Fax:_______________

Date/Time of Spill:____

Location of Source (*Latitude/Longitude):*____

Last Known Location of Spill (*Latitude/Longitude*):____

____

Type of Oil (*API, if known):*________________________ Estimated Volume of Initial Release:__________

If continuing release, how much?___________________ For how long? ___________________________

WEATHER CONDITIONS

Present Time: ___________________________Air Temperature:________________________________

Wind Direction: __________________________Wind Speed:___________________________________

Wave Height: ____________________________Water Temperature:______________________________

Current Direction: ________________________Current Speed:_________________________________

Weather Forecast: ____

____

Additional Information:____

____

Submit Results To:

Company: _____________________________________

Name: _____________________________________

Fax Number: _____________________________________

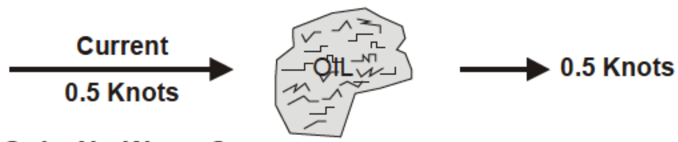
Office Number: _____________________________________

Home Number: _____________________________________

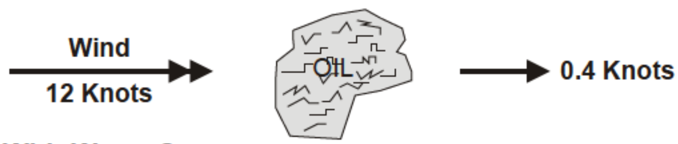
FIGURE 2.19
EXAMPLES OF OIL MOVEMENT ON WATER SURFACES

WIND AND CURRENT DIRECTLY ALIGNED:

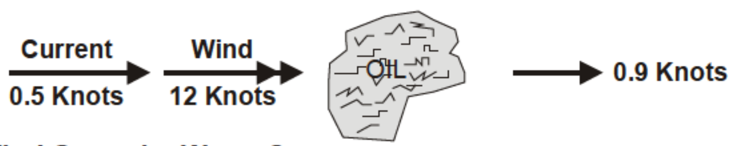
Water Current Only, No Wind:



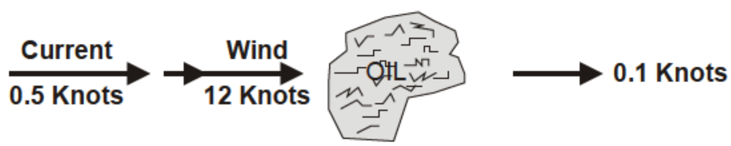
Wind Only, No Water Current:



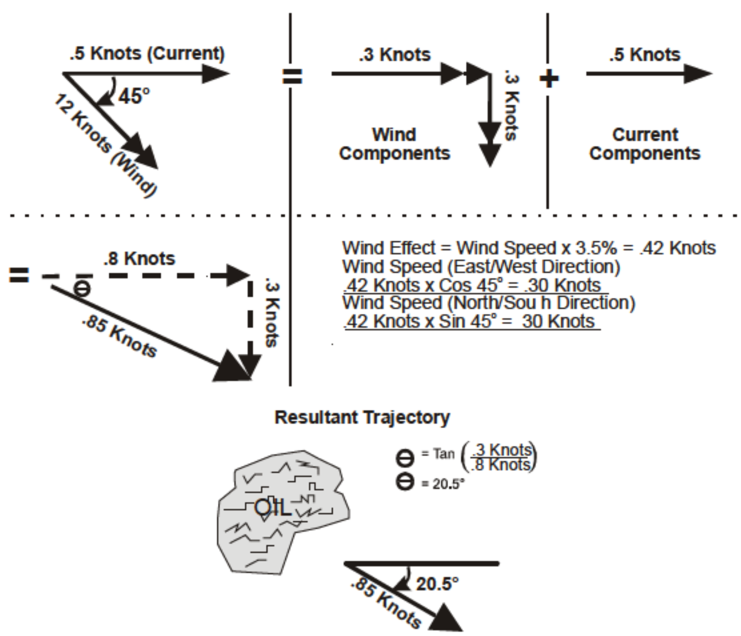
Wind With Water Current:



Wind Opposite Water Current:



WIND CURRENT AND WIND NOT DIRECTLY ALIGNED:



2.7 INITIAL CONTAINMENT ACTIONS

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

- Control the source and limit the spread of oil, thereby reducing the surface area and 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 by immediate identification and initiation of local GRP's..

Selection of the appropriate location and method will depend upon:

- Where the spill occurs;
- Length of time spill occurs before being noticed;
- Amount of spill;
- Area of coverage
- Environmental factors such as wind speed and direction.

2.7.1 INITIAL RESPONSE ACTIONS – MINOR SPILLS

Aquatic

In the event of a minor aquatic spill, the Tesoro Incident Commander will activate response contractors. The following procedures will apply:

1. Complete steps identified in the *Emergency Action Checklist* (see **SECTION 2**).
2. For minor spills emanating from the Salt Lake City Refinery, contractors will:
   - Deploy containment boom.
   - Deploy additional boom as necessary to ensure oil does not escape.
   - Deploy recovery equipment at downstream corner of containment area to recover floating oil and use sorbent pads for sheen recovery.
   - Maintain cleanup operations until no visible sheen is apparent.
3. For other minor spills (uncontained):
   - Alert primary response contractor immediately. Request additional equipment and personnel if available containment and recovery equipment may not be sufficient.
   - Pull containment boom into water.
   - Deploy boom around the oil slick or in front of the leading edge to contain all or as much of the oil as possible.
   - Bring boom ends together and begin recovering oil with recovery equipment and/or sorbent pads.
   - If all or part of the spill is still not contained, assess wind and current direction to determine the probable trajectory of the slick.

- Direct primary response contractor to implement containment and recovery operations to control remaining oil or protection operations per the ACP if it appears oil cannot be contained prior to contacting a sensitive area.
- Utilize primary response or other oil spill contractors to provide rapid and complete cleanup of the spill.

Terrestrial

In the event of a minor terrestrial spill that, in the opinion of the Incident Commander, can be adequately contained and clean up with in-house equipment and personnel, the following procedures will apply:

1. Ensure personnel safety.
2. Stop the flow of the spill as outlined in the *Emergency Action Checklist* (see **SECTION 3**).
3. Begin the necessary containment and cleanup procedures). Use Response Contractor to implement the necessary techniques to limit the spread of oil.

2.7.2 INITIAL RESPONSE ACTIONS – MAJOR SPILLS

A major spill, for Tesoro's purposes, is one that cannot be contained or managed using only onsite and primary response contractor equipment and personnel. In this case, the Incident Commander will immediately request the assistance of the Tesoro Spill Management Team and primary resource contractors. The initial response actions to be taken for major aquatic and terrestrial spills are as follows.

Aquatic

The initial response actions implemented by the local Immediate Response Team (IRT) in the event of a major spill will focus primarily on personnel safety, controlling the spill near its source, and providing the first line of defense until outside resources arrive. The procedures the Incident Commander should consider are listed below in the recommended order of implementation.

1. Ensure personnel safety.
2. Stop the flow of oil at the source as outlined in the *Emergency Action Checklist* (see **SECTION 3**).
3. Initiate slick surveillance and tracking procedures.
4. Request assistance from Tesoro Spill Management Team and primary response and other contractors, as necessary.
5. Deploy the available boom downstream of the source and/or in front of the slick's leading edge to contain as much of the oil as possible .
6. If the spill is continuing, anchor the boom in place and use a skimmer to begin recovering oil as it becomes contained by the boom.

7. If the spill is not continuing, recover the contained oil as soon as possible by skimming or with sorbents and redeploy the boom to contain additional oil or protect sensitive areas as outlined in the ACP.
8. Estimate the probable spill trajectory and identify the sensitive areas at risk per the ACP.
9. Using the ACP and Part 2 of this OSCP, determine a strategy for exclusionary, diversionary, and collection booming.
10. Continue to monitor spill movement and begin developing an overall spill response plan in conjunction with the FOSC/SOSC.
11. Set up interim waste storage sites and begin making arrangements for waste characterization and disposal.

Terrestrial

The immediate response procedures implemented by the IRT in the event of a major terrestrial spill will focus primarily on personnel safety, limiting the spread of oil, and preventing any offsite migration. The Incident Commander should consider the procedures listed below in the recommended order of implementation.

1. Ensure personnel safety.
2. Eliminate sources of ignition.
3. Evacuate the area or terminal if extreme fire or explosion hazard exists; notify local police, fire department, and Tesoro Spill Response Team.
4. If safe, stop the flow of oil at the source as outlined in the Emergency Action Checklist.
5. If spill is within the tank farm containment area, block storm drains and construct containment and/or diversion berms to limit the spread of oil and direct the flow to natural depressions or containment areas.
6. If spill is outside the tank farm, implement containment techniques to limit the spread of oil and prevent oil from entering the water.
7. Request assistance from Tesoro Spill Management Team, primary response, and other contractors as needed.
8. Begin recovering contained oil immediately by pumping, using vacuum trucks and/or sorbents to minimize penetration into the substrate.
9. Set up interim waste storage site(s) and begin making arrangements for waste characterization and disposal.

2.7.3 MAJOR SPILL PLAN IMPLEMENTATION

In the event of a major spill, Tesoro must implement this OSCP to the full extent including the activation of the Tesoro Spill Management Team and a number of response/support service contractors. At this point, the Incident Command post may be moved to another suitable location. In addition to the immediate response procedures discussed above, other key initial actions that should be taken when responding to a major spill are outlined below.

1. <u>Establish a Command Post</u> – The Administrative Conference Room is the primary location for the Tesoro Incident Command Post. A mobile command post may be utilized in the event command needs to be closer to the emergency. This command post would be set up in a trailer leased during the emergency. In the event of a large incident requiring significant space, the ICP may be relocated to the conference facilities at the Best Western Plaza (801/521-0130). This facility provides adequate area, resources, and communications (i.e., telephone lines) to accommodate Unified Command as well as the Tesoro Spill Management Team. **SECTION 4** provides criteria for establishing a command post.
2. <u>Establish Communications Systems</u> – Refer to information provided in **SECTION 7** of the OSCP for communications information including radio and telephone lines

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

4. <u>Logistical Support</u> – Arrangements for housing, transportation, meals, supplies, and other logistical support should be initiated for response and support personnel anticipated to be involved in the spill response. The Local Emergency Planning Committee (LEPC) should be consulted to assist in these arrangements. **SECTION 3** contains a listing of local resources.
5. <u>Waste Management</u> – Establish a system for the handling, transport, temporary storage, characterization, and disposal of liquid/solid wastes generated by the spill response. Interim waste storage sites should be identified and constructed, equipment and personnel should be acquired and designated to handle and transfer wastes from the recovery points to the waste storage sites. Potential waste disposal/treatment sites should be identified along with their waste acceptance criteria and profile requirements. **SECTION 7** provides information on waste management. The Waste Disposal Plan is presented in **SECTION 5**.
6. <u>Government and Public Liaison</u> – Establish a plan and designate personnel to coordinate and maintain communications with response contractors, government agencies, the media, and the public.
7. <u>Public Information</u> – Use the news media to distribute information regarding the nature of the incident and actions underway to mitigate the impacts. A successful response often depends on timely and accurate public information.
8. Equipment Staging Area(s) – Establish areas adjacent to the spill site for equipment staging and deployment.

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SECTION 3 REPORTING AND NOTIFICATION

SPILLAGE OF ANY PETROLEUM HYDROCARBON OR OTHER HAZARDOUS SUBSTANCE ONTO LAND OR WATER MUST BE IMMEDIATELY REPORTED! THERE ARE NO EXCEPTIONS!

The Tesoro Incident Commander should confirm that all spills from the Tesoro Salt Lake City Refinery are properly reported within mandated timeframes to the required federal/state agencies. Personal and direct communication must be made by the Incident Commander or his designee.

If a spill is detected, the following information should be provided to the Incident Commander:

1. Was anyone hurt?
2. Location of spill.
3. Time of spill.
4. Product/volume spilled.
5. Source of spill.
6. Actions taken.
7. Weather conditions.
8. Projected spill movement.
9. Equipment needed.
10. Environmental concerns.
11. Initial site monitoring results.

Never speculate or guess when discussing or reporting a spill. Report only facts.

FIGURE 3.1 provides a notification flow chart to ensure that the appropriate responders and agencies are notified within 30 minutes of discovery. **FIGURE 3.2** should be completed as completely as possible before initiating agency notifications, however, notification should not be delayed pending completion of the form.

TABLE 3.1 lists Tesoro notifications for local terminal, as well as, corporate personnel. **TABLE 3.2** list emergency response organizations, including local fire and police, and response contractors. **TABLE 3.3** list state and federal agencies. **TABLE 3.4** lists sensitive area managers and natural resource trustees. **TABLE 3.5** through **TABLE 3.8** list hospitals, airports, schools, and media organizations. **TABLE 3.10** provides a notification log sheet for the caller to document which organizations and agencies have been notified.

Tesoro employees and contractors are not to provide <u>any</u> information about a spill to anyone other than the designated on-scene representatives of the federal, state, and local agencies.

<u>No statements</u> should be made regarding the following subjects, except by persons designated by the Incident Commander:

- Liability for spill.
- Estimates of damage expressed in dollars ($).
- Estimates of the duration of cleanup.
- Commitments regarding effectiveness of cleanup.

- Comments regarding appropriateness/effectiveness of public or private involvement.

All inquiries from newspapers, radio stations, and television stations will be referred to the Incident Commander.

FIGURE 3.1
INITIAL NOTIFICATION FLOWCHART

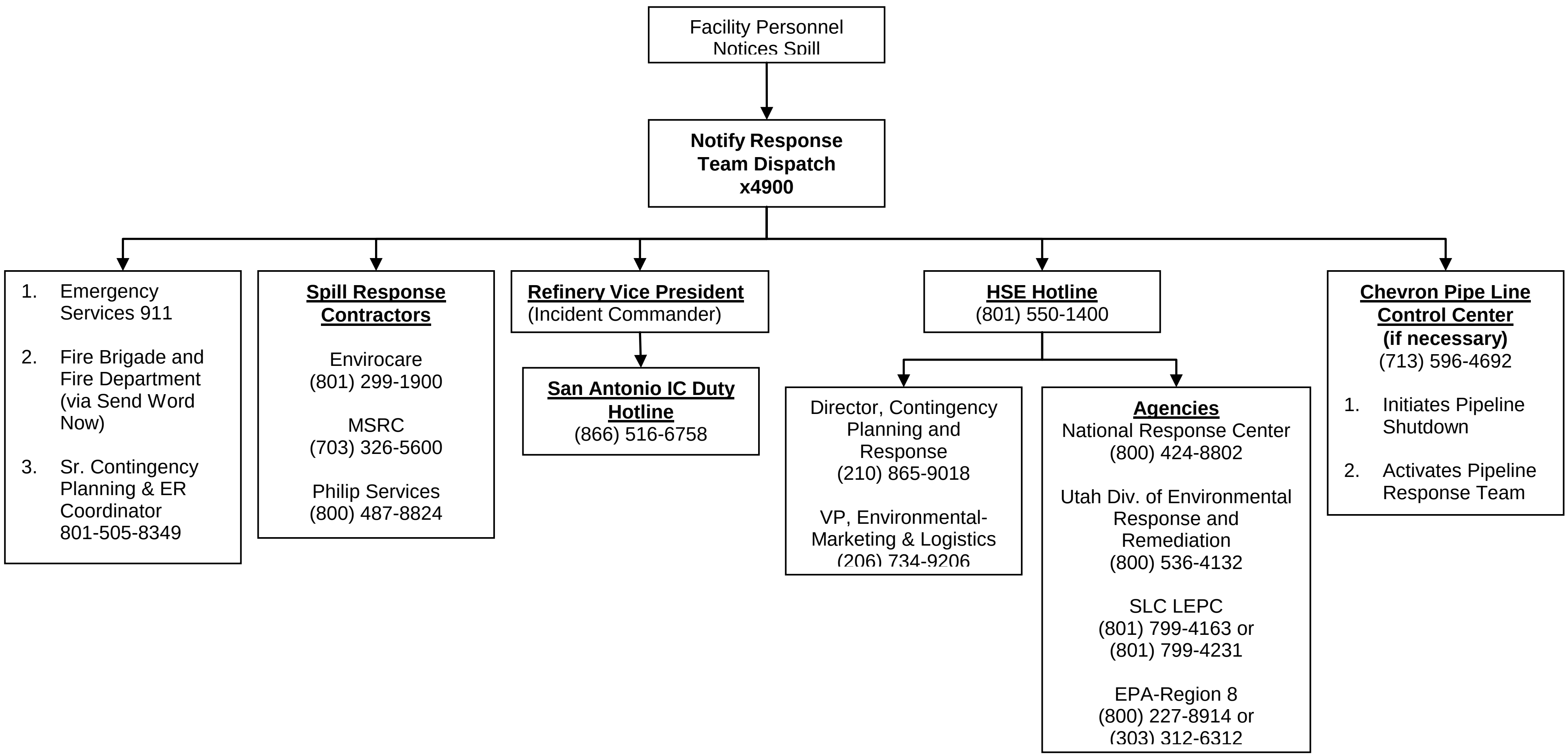

FIGURE 3.2
OIL SPILL DISCHARGE INFORMATION REQUIRED IN A REPORT TO THE NATIONAL RESPONSE CENTER (NRC)
UTAH DIVISION OF ENVIRONMENTAL RESPONSE AND REMEDIATION (801) 536-4123

Fill out this form as completely as possible before notifying agencies.
When reporting information, be as concise and accurate as possible.

EMERGENCY TELEPHONE: (800) 424-8802

REPORTING PARTY INFORMATION

Name: ____ Position: ____ Company: ____
Day Telephone: ____ Evening Telephone: ____
Address: ____
City: ____ State: ____ Zip: ____
Were Materials Discharged? **YES/NO** Confidential? **YES/NO**
Meeting Federal Obligations to Report? **YES/NO** Date Called: ____
Are you calling for the responsible party? **YES/NO** Time Called: ____

INCIDENT DESCRIPTION

Source and/or Cause of incident: ____
Date of Incident: ____ Time of Incident: ____
Incident Address/Location: ____
Nearest City: ____ State: ____ County ____ Zip ____
Distance From City: ____ Direction from City: ____
SECTION ____ Township ____ Range ____ Borough ____
Container Type ____ Tank Oil Storage Capacity ____
Facility Oil Storage Capacity: ____
Facility Latitude: ____ Facility Longitude: ____

MATERIAL DISCHARGE

CHRIS CODE	DISCHARGED QUANTITY	UNIT OF MEASURE	MATERIAL DISCHARGED IN WATER	QUANTITY	UNIT OF MEASURE

RESPONSE ACTION

Actions Taken to Correct, Control, or Mitigate Incident?

IMPACT

Number of Injuries: ____ Number of Fatalities: ____
Were there Evacuations? YES//NO Number Evacuated: ____
Was there any Damage? YES/NO Damage in Dollars (approximate): ____
Medium Affected: ____
Description: ____
More Information about Medium:

ADDITIONAL INFORMATION

Any Information about the incident not recorded elsewhere in the report:

CALLER NOTIFICATIONS

EPA YES/NO | **USCG** YES/NO | **STATE** YES/NO | **OTHER** YES/NO **Describe:**

TABLE 3.1
TESORO NOTIFICATIONS

Salt Lake Refinery Qualified Individuals

Name/Title	Office	Cellular
Qualified Individual		
Karma Thomson Refinery, VP	801-521-4813	210-413-7927
Alternate Qualified Individuals		
Tom Chunat Manager Operations	801-521-4967	801-232-3302
Matt Marusich Senior Manager, Operations	801-521-4967	925-260-0397
William Snarr HSE Manager	801-521-4966	801-528-2009
Richard Walkingshaw Manager, Maintenance & Reliability	801-521-4850	801-971-7326
Justin Lawrence Manager, Human Resources	801-521-4840	210-837-3094
Dean Adam Plant Controller 1 – Mountain	801-521-4874	801-349-7139
Henry Chung Senior Manager, Technical	801-521-4871	714-609-3393
Dean Anderson Area Mgr, Logistics Operations, NW	801-366-2045	801-556-1267
Paul Arvin Manger, Refinery Economics and Planning	801-521-4868	337-802-5600

Corporate Personnel

Name/Title	Office	Cellular	Home
San Antonio IC On Duty	(866) 516-6758	[redacted]	[redacted]
Rob Donovan, VP Corporate Environmental Marketing & Logistics	(253) 896-8716	206-734-9206	(b) (6) [redacted]
Eric Haugstad, Director Contingency Planning and ER	(210) 626-4636	(210) 865-9018	[redacted]
Jeff Haffner, Corporate Environmental Attorney	(210) 626-4418	(210) 240-1806	

Salt Lake Refinery Emergency Contacts

Name/Title	Office	Cellular	Home
Response Team Dispatch, 24 Hour	(801) 521-4900	(801) 550-1617	(b) (6) [redacted]
Emergency Response Coordinator	(801) 521-4887	(801) 550-1617	
Safety Team Lead	(801) 521-4923	(801) 673-2810	
Med Office	(801) 550-4936		
HSE Incident Notification		(801) 550-1400	
Emergency Operations Center (EOC)	On Call	Posted Weekly	
I&E Supervisor	(801) 521-4805 (801) 521-4892	(801) 913-3368	
I&E Weekend Analyzer		(801) 550-4139	
Asset Manager	(801) 521-4967	(801) 673-3195	
Eng. & Tech Mgr.	(801) 521-4945	(801) 244-9245	
HR Mgr.	(801) 521-4840	210-837-3094	
HSE Manager	(801) 521-4966	(801) 259-7612	
HSE (air)	(801) 366-2036	(801) 243-4268	
HSE (waste/water)	(801) 521-4914	(801) 232-8210	
Salt Lake Control Center			
South Board	(801) 521-4861		
ALKY Board	(801) 521-4862		
FCCU Board	801-521-4849		
OMD/SRU/BP Board	(801) 366-2048		
HPD Superintendent	(801) 521-4889	(801) 556-9196	
HPDN Day Supervisor	801-521-4942	801-245-9368	
HPDS Day Supervisor	(801) 521-4820	(801) 696-5241	
OMD Superintendent	(801) 521-4948	(801) 201-9138	
OMD Day Supervisor	801-521-4858	801-556-9196	
Shift Supervisors (HPD)	(801) 521-4896		
Shift Supervisors (OMD)	(801) 521-4823	(801) 831-0798	
Brock Carter	(801) 521-4887	(801) 505-8349	

TABLE 3.2
EMERGENCY RESPONSE ORGANIZATIONS

Local Agencies		
Emergency Contacts	**Primary Phone**	**24-Hr. Phone**
Ambulance		911
Fire Department	(801) 799-4231 (801) 799-4103	911
Davis County South Metro Fire (Hazmat)	801-298-6230	911
Local Emergency Planning Commission	(801) 799-4141 (801) 799-4166	
Sheriff (Non Emergency)	(801) 468-3900	911 801-743-7000
SLC POTW to secure lift station on Oil Drain Canal	801.483.6700 ext 1	
SLC Waste Water Treatment Plant	(801) 799-4032	(801) 483-6700
Fire Prevention Bureau	305 E 200 S Salt Lake City, UT	(801) 799-4150
Salt Lake County Fire Department	3380 S 900 W Salt Lake City, UT	(801) 743-7200
For any water, sewer or storm drain emergency	(801) 483-6300	

Response Contractors		
Company	**Primary Phone**	**24-Hr. Phone**
Envirocare *Spill Response*	(801) 299-1900	(800) 820-9058
Marine Spill Response Corporation *Spill Response*		(703) 326-5600 (800) OIL-SPILL
Philip Services *Spill Response*	(800) 487-8824	(800) 487-8824

TABLE 3.3
STATE AND FEDERAL AGENCIES

State Agencies

Required Notifications	Primary Phone	24-Hr. Phone
Department of Public Safety	(801) 965-4461 (801) 538-3400	
Salt Lake City Water Quality Board	385-468-3862	(801) 580-6681
State Fire Marshal	(801) 284-6350	
State Police/Utah Highway Patrol		911
Utah Div. of Env. Response & Remediation	(801) 536-4100	(801) 536-4123
Utah State Fire Marshal Hazmat Institute	801-256-2499	
Utah Department of Natural Resources Division of Water Rights	801-538-7240	
Salt Lake County LEPC	(801) 535-7200	911

Federal Agencies

Required Notifications	Primary Phone	24-Hr. Phone
National Response Center		(800) 424-8802
DOT office of Hazardous Material	(202) 366-4000	
EPA-Region 8, Denver	(303) 312-6312	
EPA Region 8, Emergency Operations Center	(800) 227-8914	
National Weather Service	(801) 524-5133	

TABLE 3.4
SENSITIVE AREA MANAGERS AND TRUSTEES

Sensitive Areas

Category	Agency/Trustee	Phone
Utah Division of Wildlife Resources	Utah DNR	(801) 538-4700
Utah Division of Parks & Recreation	Utah DNR	(801) 538-7220
Utah Division of Oil, Gas & Mining	Utah DNR	(801) 538-5338
Utah Division of Forestry, Fire & State Lands	Utah DNR	(801) 550-7754 (801) 538-5555
Utah Division of Water Resources	Utah DNR	(801) 538-7240

SURFACE WATER INTAKES

In the event of a spill, contact the Utah Department of Natural Resources, Division of Water Rights for contact information. (b) (7)(F) [redacted]

TABLE 3.5
HOSPITALS

Hospital	Address	City	Phone
Intermountain Health Care	36 S. State Street, #2200	Salt Lake City	(801) 422-2000
Intermountain LDS Hospital	8th Avenue and C Street	Salt Lake City	(801) 408-1100
Salt Lake Regional Medical Center	1080 East South Temple	Salt Lake City	(801) 350-4111
Saint Marks Hospital	1200 East 3900 South	Salt Lake City	(801) 268-7111
University Health Care	50 North Medical Dr.	Salt Lake City	(801) 581-2121

TABLE 3.6
AIRPORTS

Airport	Address	City	Phone
Salt Lake City International Airport	776 North Terminal Dr. SLC, UT 84116	Salt Lake City	(801) 575-2400

TABLE 3.7
SCHOOLS

School	Address	City	Phone
Matheson Intermediate School	1240 American Beauty	Salt Lake City	(801) 578-8576
Washington Elementary School	420 N. 200 W	Salt Lake City	(801) 578-8140
Rose Park Elementary School	**1105 West 1000 North**	Salt Lake City	(801) 578-8554
Newman Elementary School	1269 Colorado Street	Salt Lake City	(801) 578-8537
Northwest Intermediate School	1730 W. 1700 N.	Salt Lake City	(801) 578-8547
West High School	241 N 300 W	Salt Lake City	(801) 578-8500
Jackson Elementary School	750 W 200 N	Salt Lake City	(801) 578-8165

TABLE 3.8
MEDIA ORGANIZATIONS

Name	Type	Phone
KDYL AM 1060	Radio	(801) 262-5624
KSL Radio/TV	Radio/TV	(801) 575-5555
KSTU – Fox Channel 13	TV	(801) 536-1313
KTVX – TV Channel 4	TV	(801) 975-4444
KUTV – TV Channel 2	TV	(801) 839-1234

TABLE 3.9
LOCAL AND REGIONAL RESOURCES

COMPANY NAME	LOCATION(S)	TELEPHONE/FAX	COMMENTS
Aerial Photographers			
Aero Graphics	40 W. Oakland Avenue Salt Lake City, UT	(801) 487-3273	
Olympus Aerial Surveys	30 W. 2950 S. South Salt Lake City, UT	(801) 484-4351	
Sky High Travel	12393 Gateway Park Pl. Ste 600 Draper, UT 84020	(801) 572-4444	
Booms, Sorbents, Skimmers			
Bonneville Industrial Supply	Orem, UT	(801) 521-2692	
Craig Curtis Industrial Supply	Salt Lake City, UT	(801) 641-5354	
E.T. Technologies	Salt Lake City, UT	(801) 977-0731	24-Hour
Herrick Industrial Supply	Ogden, UT	(801) 627-2240	
LN Curtis & Sons	Salt Lake City, UT	(801) 486-7285	24-Hour
Marine Spill Response Corporation	Everett, WA	(703) 326-5600	24-Hour
MP Environmental Services	Tooele	(877) 800-5111	24-Hour
Philip Services	Woods Cross	(800) 487-8824	24-Hour
Safety West	West Valley City, UT	(801) 972-5800	24-Hour
TW Company	Salt Lake City, UT	(801) 820-9058	24-Hour
Catering			
Bombay House	1615 Foothill Dr Salt Lake City, UT	(801) 581-0222	
Charlie Chow's Dragon Grill	255 E 400 S Salt Lake City, UT	(801) 328-3663	
Eiffel Tower Catering	1929 S 500 E Salt Lake City, UT	(801) 484-6888	

TABLE 3.9 LOCAL AND REGIONAL RESOURCES			
COMPANY NAME	**LOCATION(S)**	**TELEPHONE/FAX**	**COMMENTS**
Elizabeth Custom Catering	1645 W 2200 S Salt Lake City, UT	(801) 359-7184	
Le Croissant Catering	1578 S 300 W Salt Lake City, UT	(801) 466-2537	
Good Day Catering	380 W 1700 S Salt Lake City, UT	(801) 532-7829	
Siegfried's Delicatessen	69 W 300 S Salt Lake City, UT	(801) 355-3891	
You're the Boss	2650 W Parkway Blvd West Valley City, UT	(801) 575-8826	
Compressors, Pumps, Generators, PorTABLE Lighting			
Hertz	2120 South 3600 West West Valley City, UT 84119	(801) 556-2908	Compressors, pumps, generators, lighting
RSC		(801) 974-3000	Alt. to Hertz
Earth Moving Vehicles			
Hertz	Salt Lake City, UT	(801) 977-9944	
Environmental Consultants			
ENTRIX, Inc.		(800) 476-5886	24-Hour Emergency Access
E. T. Technologies Consulting	Salt Lake City, UT	(801) 977-0731	24-Hour Emergency Access
Lincoln Environmental Services (Brett's Towing) Ask for Rusty	Salt Lake City, UT	(800) 257-5370	24-Hour Emergency Access
Envirocare	North Salt Lake City, UT	(801) 299-1900	24-Hour Emergency Access
Helicopters (Standard)			
Classic Helicopter Svc	2244 S 1640 W Woods Cross, UT	(801) 295-5700	
Helo-Wood Helicopter	426 N 2300 W Tremonton, UT	(435) 257-5262	
Housing Capacity			
Airport Inn	2333 W North Temple Salt Lake City, UT	(801) 539-0438	
America's Best Inn & Suites	1009 S Main St Salt Lake City, UT	(801) 355-4567	
Quality Inn	315 Admiral Byrd Rd Salt Lake City, UT	(801) 539-5005	
Candlewood Suites	2170 W North Temple Salt Lake City, UT	(801) 359-7500	

TABLE 3.9
LOCAL AND REGIONAL RESOURCES

COMPANY NAME	LOCATION(S)	TELEPHONE/FAX	COMMENTS
Hampton Inn	2055 S Redwood Rd Salt Lake City, UT	(801) 886-0703	
Comfort Suites	171 N 2100 W Salt Lake City, UT	(801) 715-8688	
Courtyard by Marriott	130 W 400 S Salt Lake City, UT	(801) 531-6000	
Crystal Inn	230 W 500 S Salt Lake City, UT	(801) 328-4466	
Days Inn	315 W 3300 S Salt Lake City, UT	(801) 486-8780	
Doubletree Hotel	110 W 6th S Salt Lake City	(801) 359-7800	
Fairfield Inn	230 Admiral Byrd Rd Salt Lake City, UT	(801) 355-3331	
Grand America Hotel	555 S Main St Salt Lake City, UT	(801) 258-6000	
Hampton Inn	425 S 300 W Salt Lake City, UT	(801) 741-1110	
Hilton	255 S West Temple Salt Lake City, UT	(801) 328-2000	
Howard Johnson Express Inn	121 N 300 W Salt Lake City, UT	(801) 521-3450	
La Quinta Inn	4905 Wiley Post Way Salt Lake City, UT	(801) 366-4444	
Little America	500 S Main St Salt Lake City, UT	(801) 363-6781	
Marriott Hotels & Resorts	75 S West Temple Salt Lake City, UT	(801) 531-0800	
Microtel Inns & Suites	61 Tommy Thompson Rd Salt Lake City, UT	(801) 236-2800	
Quality Inn	154 W 600 S Salt Lake City, UT	(801) 521-2930	
Radisson Hotel Salt Lake City	2177 W North Temple Salt Lake City, UT	(801) 364-5800	
Ramada Inn	2455 S. State St. Salt Lake City, UT	(801) 486-2400	
Residence Inn	4883 Douglas Corrigan Way Salt Lake City, UT	(801) 532-4101	
Salt Lake City Marriott	220 S State St Salt Lake City, UT	(801) 961-8700	
Skyline Inn	2475 E 1700 S Salt Lake City, UT	(801) 582-5350	
Inn Town Suites	48 W 3300 S Salt Lake City, UT	(801) 467-3688	
Metropolitan Inn	524 S West Temple Salt Lake City, UT	(801) 531-7100	

TABLE 3.9 LOCAL AND REGIONAL RESOURCES			
COMPANY NAME	**LOCATION(S)**	**TELEPHONE/FAX**	**COMMENTS**
Redlion	161 W 600 S Salt Lake City, UT	(801) 521-7373	
Raddison	215 W South Temple Salt Lake City, UT	(801) 531-7500	
Industrial Vacuum Loaders (Liquids/Solids)			
PSC North America	2525 South 1100 West Woods Cross, UT 84087	(801) 298-5600	
Veolia	709 N. Taylor Way Ste B North Salt Lake, UT 84054	(801) 294-2992	
PC Transport Inc.	75 Allegiance Circle Evanston, WY	(307) 789-3897	Butane hauling
Portable Toilets			
Anytime Services	1756 Sandhill Rd Orem, UT	(801) 222-9237	
Radio Communication Equipment			
Gts-General Telecomms	2153 S 700 E Salt Lake City, UT	(801) 485-5012	
Mc Intosh Communications	2698 Redwood Rd # A Salt Lake City, UT	(801) 908-8808	
Orion Wireless	51 E Utopia Ave #6 Salt Lake City, UT	(801) 484-7888	
Utah Communications & Elects	1202 S 300 W Salt Lake City, UT	(801) 486-0161	
Temporary Labor Pools			
Apex Staff Service	Salt Lake City, UT	(801) 328-9567	
IPW	Sandy, UT	(801) 366-2037	
Labor Ready, Inc.	Salt Lake City, UT	(801) 521-0480	
Trailers (Storage and Mobile Offices)			
Trailers Rental Co	2438 Directors Row Salt Lake City, UT	(801) 972-6680	
U-Haul Co	476 E South Temple Salt Lake City, UT	(801) 519-0587	
Transportation			
AA Discount Rent-A-Car	3520 S 300 W Salt Lake City, UT	(801) 281-8500	
Alamo Rent-A-Car	3780 Terminal Way Salt Lake City, UT	(801) 575-2211	
Avis Rent A Car	255 S. West Temple Salt Lake City, UT	(801) 359-2177	
Budget Rent-A-Car	750 S Main St Salt Lake City, UT	(801) 575-2500	
Dollar Rent A Car	601 N 3800 W Salt Lake City, UT	(801) 575-2580	
Enterprise Rent A Car	4290 W 3500 S Salt Lake City, UT	(801) 963-8456	
Welding			

TABLE 3.9
LOCAL AND REGIONAL RESOURCES

COMPANY NAME	LOCATION(S)	TELEPHONE/FAX	COMMENTS
Airgas Intermountain Inc	3415 S 700 W West Valley, UT	(801) 288-5000	
Dar's JJ White	93 N Main St Garland, UT	(435) 257-5428	
Lincoln Electric Co	7007 High Tech Dr Midvale, UT	(801) 233-9353	

TABLE 3.10
NOTIFICATION LOG SHEET

Organization/Agency Notified	Date	Time	Person Contacted	Comments/Actions

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SECTION 4 RESPONSE TEAM ORGANIZATION

4.1 IMMEDIATE SPILL RESPONSE TEAM

The Tesoro Salt Lake City Refinery is staffed 24 hours a day. **TABLE 4.1** lists response personnel. The initial spill response organization is shown in **FIGURE 4.1**.

In general, personnel at the Tesoro Salt Lake City Refinery will be assigned the following jobs during the first 2 hours of an oil spill response:

A. The Refinery ERC will become the initial Incident Commander (IC). Using the Incident Commander checklist provided in **SECTION 2**, the IC will immediately notify agency and spill response personnel to initiate a spill response of the appropriate size as determined by the spill assessment.

B. The Safety Engineer will become the Safety Officer. Using the Safety Officer checklist provided in **SECTION 2**, the Safety Engineer will verify all actions taken are being conducted in a safe manner.

C. The OMD Superintendent will become the Operations Chief. The Operations Chief will work with Operations Personnel to initially respond in a defensive manner to mitigate the spill, and attempt to control the spread of the oil. The Operators will deploy boom within one (1) hour. Further actions and duties of the Operations Chief and Operators is described in this section.

D. The HSE Manager will become the Planning Chief.

E. TW Company is Tesoro's primary local response contractor. TW will work with the Operations Chief to assure that equipment arrives on the scene as needed.

4.1.1 Two-Hour Spill Response Equipment and Personnel

To comply with 40 CFR 112, Appendix E, 3.3.1, the refinery is equipped with 1,000 feet of containment boom for deployment within one hour of spill detection. In addition, the refinery maintains a 3-inch diesel, single diaphragm pump (derated to 800 bbls per 12 hours) with 100 feet of suction hose and 150 feet of discharge hose capable of being deployed within two hours to meet the requirements of 40 CFR 112, Appendix E, 3.3.2. A 2,100-gallon Fast Tank® is also available at the refinery to provide temporary storage pending arrival of contracted resources.

4.2 COMMAND POST

4.2.1 Location

It is vitally important to establish a central location to serve as a base for each of the functional groups (i.e. Command, Operations, Planning, Logistics, and Finance) and to conduct meetings, post spill/response related information, and to handle response communications.

Command post features should include:

- Sufficient size to allow response personnel to operate effectively and comfortably.
- Conference/Media room.
- “Situation room” with wall maps to track the spilled oil, response equipment, sensitive resource areas, personnel, etc., erasable boards for phone numbers, to track equipment, and posted organization charts.
- Secure phone line and fax phone line for Tesoro’s Refinery Incident Commander and response managers.
- Full security.
- Office support systems (e.g., fax machines, copiers, phone lines, computers, file system, am radios, VHF/UHF radio telephones, base communication station, courier services, and secretarial service).

In the event of a spill, the facility command post would be established at the Emergency Operations Center located in the Lunch Room. For a larger spill and a more sustained response, the Command Center may be relocated to the Best Western Plaza. Depending on the area affected by the spill, additional field command posts may be established.

If the incident involves events that impact the community and require the involvement of government agencies, Unified Command meetings would be conducted at the Joint Operations Center (JIC). Designated members of the IMT and NRT, along with designated personnel from the governmental agencies would assume the responsibility for the overall management of the spill incident.

During a major spill response, a number of warehouses may also be necessary to receive, maintain, store, and distribute response equipment and/or supplies. Warehouses would be located in areas readily accessible by land, air and/or water and preferably in proximity to the site(s) where equipment/supplies would be used. The amount of warehouse space required would depend largely upon the incident but it should have, or have the capability for, obtaining the following services:

- Electricity.
- Telephones.
- Security.
- Sanitation facilities.

The warehouse would be manned 24 hours per day and have defined shipping and receiving areas, appropriate inventory control mechanisms, and maintenance equipment.

4.2.2 Establishing a Command Post and Staging Areas

The following procedures provide an outline for establishing a Central Command Post and staging areas. It is recognized that these procedures may be somewhat dependent upon the size of the incident. Therefore, an outline of general procedures for establishing a Command Post and staging areas in the case of a major spill is provided. A major spill may require larger facilities and additional or larger staging areas. In such a case, the exact location for establishing the command post and staging areas may not be definable until the area of impact is known.

Generalized procedures are followed by pre-designated locations for command and communication posts and staging areas that are designed to deal with localized and more site-specific oil spills.

Command Post

A Command Post would be established to serve as the primary location for the Command Staff activities and various meetings and briefings held throughout response operations. The actual location of the Command Post would depend upon the specific circumstances surrounding the incident. The Logistics Section Chief would be responsible for establishing the Command Post and should include:

- Proximity to incident location.
- Sufficient size to allow response personnel to operate effectively and comfortably.
- Room for conferences, Unified Command meetings, and media briefings.

- "Situation Room" with maps to track the spilled oil, response equipment locations, sensitive resource maps, lists of personnel and telephone numbers, and organization charts.
- Telephone and fax lines.
- Security.
- Office support systems (e.g., fax machines, copiers, telephone lines, computers, file system, AM radios, VHF/UHF radio telephone, base communication station, etc.).
- Communications system that would be used in an event could include: cellular telephones, local telephone system, company radios in vehicles and base stations, and pagers as conditions warrant.

The Administrative Conference Room is the primary location for the Tesoro Incident Command Post. A mobile command post may be utilized in the event command needs to be closer to the emergency. This command post would be set up in a trailer leased during the emergency. In the event of a large incident requiring significant space, the ICP may be relocated to the conference facilities at the Best Western Plaza (801/521-0130). This facility provides adequate area, resources, and communications (i.e., telephone lines) to accommodate Unified Command as well as the Tesoro Spill Management Team. Criteria for establishing a command post are presented above.

Field Command Post

A Field Command Post may also be established at the scene of an incident. The primary function of the Field Command Post is to conduct all activities which are directed toward reduction of the immediate hazard, including recovery and cleanup operations.

Staging Areas

In a major spill response, numerous staging areas may be required to support containment and cleanup operations. Staging areas would need to be equipped with prime movers, cranes, and other machinery necessary to load/unload response equipment and supplies to trucks, vessels, etc. Personnel at staging areas need to establish inventory control systems to track equipment use. In selecting a suitable staging area, the following criteria should be considered:

- Direct access to impacted areas.
- Proximity to secure parking, airports, docks, pier or boat launches.
- Ability to be a secured area.
- Proximity to populated areas or environmentally-sensitive areas.
- Adequate lighting.

The Tesoro Salt Lake City Refinery has designated equipment and personnel staging areas. Staging areas provide access to the Jordan river and drainage canal, as well as easy deployment of oil containment booms.

- The first staging area is located at the Fire Training Field at remote terminal.
- The second staging area is located at the Fire Station.
- The third staging area is located at the remote terminal west end.

4.3 TESORO INCIDENT MANAGEMENT TEAM

Tesoro has established a Incident Management Team (**TABLE 4.2**). Any or all of the team members (located at various facilities and offices throughout the Country) can be made available as needed for a response to the Tesoro Salt Lake City Refinery. Arrival time of team members will vary depending on airline schedules. It is anticipated that most team members could arrive within 12 to 24 hours of notification.

The Tesoro Incident Management Team maintains cellular telephones, portable radios, computers, printers, and fax machines immediately available for an incident site. Team members are HAZWOPPER trained and work in various positions under an Incident Command System.

4.3.1 Activation Procedures

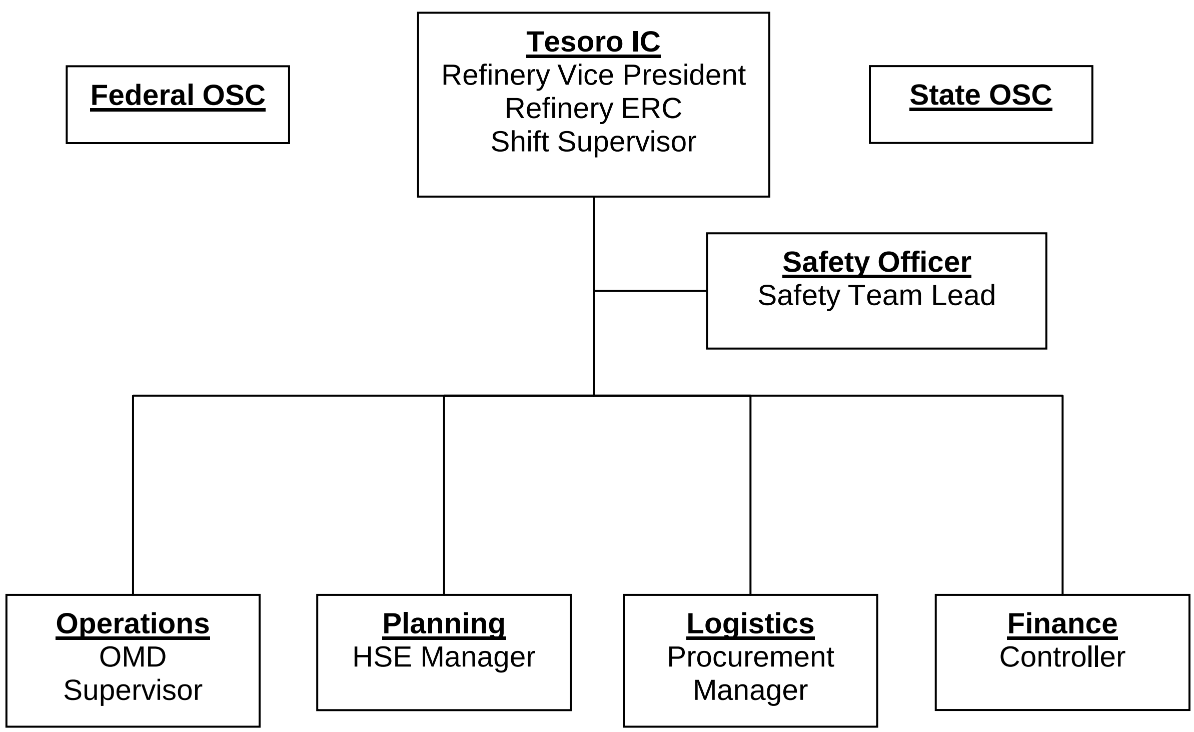
Activation of the response teams may be accomplished in stages as and described below:

- Spill Observer discovers spill and notifies theOMD Supervisor who assumes role as Initial Incident Commander (IC) and activates the Emergency Response Team.
- The Initial IC contacts the Health & Safety Representative and Senior Management Team Duty Person.
- The Refinery Duty Person contacts the Refinery Manager who assumes role of Qualified Individual (QI), working directly with IMT IC.
- The IC and Health & Safety Representative evaluate the severity of the incident and determine resource needs. The QI or IC activates all or part of the National Response Team, as necessary.
- IC briefs IMT/support teams upon arrival at the Emergency Operations Center (EOC) or Incident Command Post (ICP).
- IC and Section Chiefs continually assess staffing needs.
- IC activates additional personnel, if needed.
- IC de-activates personnel that are not needed.

TABLE 4.1
EMERGENCY RESPONSE – PERSONNEL

Name	Response Time	Responsibility During Action	Training Type/ Data
Response Team Dispatch	On site	Dispatcher	On file at refinery.
William Snarr	35 minutes	Incident Commander	On file at refinery.
Brock Carter	25 minutes	Field Incident Commander	On file at refinery.
Terrell Huber	20-25 minutes	Field Incident Commander	On file at refinery.
Clark Waldron	30 minutes	Strike Team Leader	On file at refinery.
Brent Barber	25 minutes	Strike Team Leader	On file at refinery.
Anne Alder	10 minutes	Safety Officer	On file at refinery.
Lyle Hansen	40-45 minutes	Strike Team Leader	On file at refinery.
Michelle Bujdoso	10 minutes	Staging Officer	On file at refinery.
Roy Tingey	25 minutes	Logistics Officer	On file at refinery.

FIGURE 4.1
INITIAL RESPONSE ORGANIZATION



4.4 UNIFIED COMMAND SYSTEM

The Unified Command Structure (UCS) will be utilized as a method of integrating federal, state and local agencies with the IMT. The purpose of this system is to organize the variety of agencies that may be involved in a response into a consistent team that performs their duties in a concerted, unified effort.

The UCS structure consists of four key On-Scene Coordinators: Federal On-Scene Coordinator (FOSC), State On-Scene Coordinator (SOSC), and Local On-Scene Coordinator (LOSC) and Tribal On-Scene Coordinator (TOSC) each assisting the Responsible Party/Incident Commander (RP/IC). These five entities will share decision-making authority as Incident Commanders in the Command Center and will consult with each other regarding spill response management issues. The FOSC will coordinate all federal agencies involved in the response. The SOSC will coordinate all state and local agencies involved in the response activities. The LOSC will coordinate all local and 911 response activities. The TOSC will evaluate and input on sensitive tribal issues and the RP/IC will coordinate all company activities.

Depending upon the size and complexity of the incident, additional federal and state agency personnel may integrate into the other functions of the IMT.

4.5 INCIDENT COMMAND SYSTEM

Initial response to any oil spill at the Tesoro Salt Lake City Refinery will be under the direct supervision of the Refinery ERC or his designee. The Refinery ERC is designated as the initial Tesoro Incident Commander and Safety Officer, and can use the checklist in **SECTION 2** to activate the Tesoro Immediate Response Team (IRT). The initial response organization is illustrated in **FIGURE 4.1**.

Tesoro will assume responsibility for the physical control, containment, and clean-up for the discharge of any petroleum products from the Refinery. The Tesoro response will be managed under an Incident Command System (ICS) compatible with the National Interagency Incident Management System.

Tesoro will utilize spill response contractors for the Salt Lake City Refinery. These contractors also utilize ICS. Key response contractor managers may be incorporated directly into the Spill Management Team as needed.

The Tesoro National Response Team is also available to supplement the Tesoro Salt Lake City Refinery. Tesoro maintains a sufficient number of qualified personnel to provide continuous coverage to a prolonged oil spill response effort. The team includes over 30 Tesoro employees from across all Tesoro facilities and locations as well as numerous contract personnel. Team members receive cross training in all aspects of ICS, and routinely participate in exercises. Tesoro's ICS organization chart is provided in **FIGURE 4.2**.

The Tesoro ICS organization is intended to facilitate effective response to different oil spill scenarios. The Incident Commander has the authority to activate any portion, or all of the response organization. The Incident Commander has the authority to utilize any or all members of the team in any position that he determines is required to adequately respond to insure personnel safety, minimize environmental damage, and prevent property damage. The Incident Commander also has the authority to approve contracts and order materials to respond to the spill.

Once an oil spill is detected, it will be reported to the Incident Commander. The most probable report route will be from refinery personnel, though spills could also be reported by drivers, federal or state agencies, citizens groups, or from private citizens. The Incident Commander will direct any member, or the entire Tesoro Spill Management Team, to travel to the spill site and evaluate the spill as soon he has knowledge of the incident. He will then follow established checklists and utilize Tesoro ICS personnel to initiate the response to the oil spill.

4.5.1 Qualified Individuals

The Qualified Individual (QI) or Alternate will be responsible for coordinating the actions of the Refinery owner/operator with the actions of the Federal On-Scene Coordinator. Tesoro is the owner and/or operator of the facilities covered by this OSCP and the QI and Alternate are employees of Tesoro.

The QI has the following responsibilities and authorities as required by the Oil
Pollution Act of 1990 (40 CFR Parts 9 and 112):

- Responsibility to activate internal alarms and hazard communications
- systems to notify all appropriate personnel;
- Notify all response personnel as needed;
- Identification of 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; and
- Direct cleanup activities until properly relieved of responsibility or incident is terminated.

A listing of persons named to be QIs and their telephone numbers are provided in **SECTION1** (**FIGURE 1.1**). These individuals have been provided with written authority to utilize Tesoro resources, as necessary, for oil spill response for the Tesoro Salt Lake City Refinery facilities. Each of the individuals named are qualified under the regulations to initiate those actions called out in the above referenced regulations. Individuals named as QIs also have the authority to act as Incident Commanders and Emergency Response Coordinators.

4.5.2 Incident Commander

- Responsibilities of the Incident Commander include:
- Activation of internal alarms and hazard communications systems to notify all facility personnel.
- Notification of all response personnel, as necessary.
- Identification of the character, exact source, amount, and extent of the release, as well as other items necessary for notification.
- Notification and dissemination the necessary information to the appropriate federal, state and local authorities with designated response roles.
- Assessment of the interaction of the spilled material with water and/or other substances stored at the facility and notify response personnel at the scene of that assessment.
- Assessment of the possible hazards to human health and the environment due to the release. This assessment will consider both the direct and indirect effects of the release (i.e., toxic, irritating, or asphyxiating gases that may be generated, or the effects of any hazardous surface water runoffs from water or chemical agents used to control fire and heat induced explosion).
- Assessment and implementation of prompt removal actions to contain and remove the substance released.
- Coordination of rescue and response actions as previously arranged with all response personnel.
- Use authority to immediately access company funding to initiate cleanup activities and direct cleanup activities until properly relieved of this responsibility.
- **TABLE 4.2** provides a list of persons named to be ICs for Tesoro. These individuals have been provided with a training certificate upon completion of training course. Training records can be found in the HSE filing system.

FIGURE 4.2
TESORO'S ICS ORGANIZATION CHART

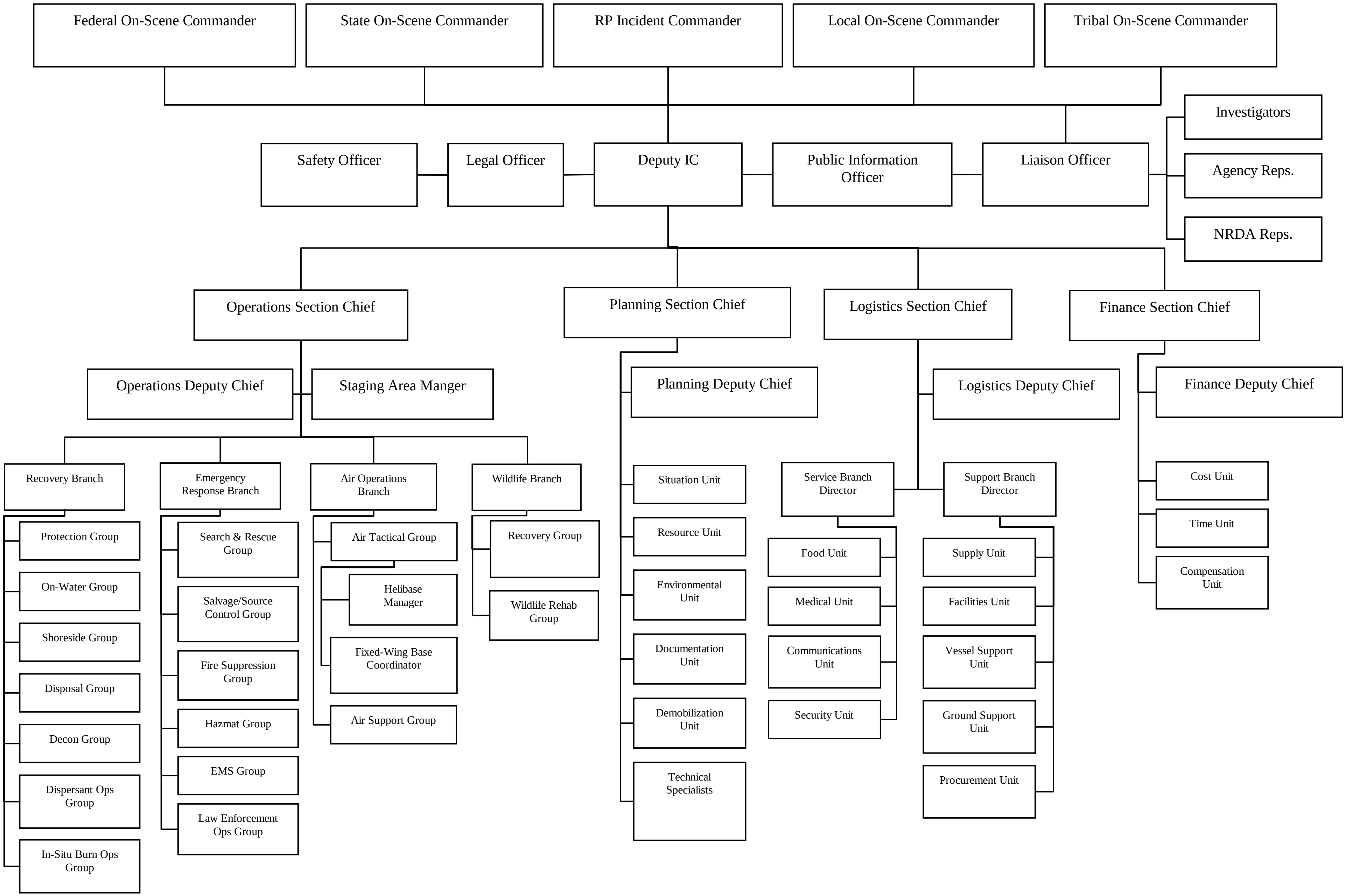


TABLE 4.2
INCIDENT MANAGEMENT TEAM

Position	Name	Office Phone	Cell Phone
INCIDENT COMMAND			
Incident Commander	Karma Thomson	801-521-4813	801-414-1532
Deputy IC	Matt Marusich	801-521-4967	925-260-0397
Deputy IC	William Snarr	801-521-4966	801-528-2009
Deputy IC	Richard Walkingshaw	801-521-4850	801-971-7326
Deputy IC	Justin Lawrence	801-521-4840	210-837-3094
Deputy IC	Dean Adam	801-521-4874	801-349-7139
Deputy IC	Henry Chung	801-521-4871	: 714-609-3393
Deputy IC	Dean Anderson	801-366-2045	801-556-1267
Deputy IC	Arvin Paul	801-521-4868	337-802-5600
COMMAND STAFF			
Legal Officer	Jeff Haffner	210-626-4418	210-240-1806
Liaison Officer	Matt Marusich	801-521-4967	925-260-0397
Public Information Officer	Justin Lawrence	801-521-4840	210-837-3094
Safety & Security Officer	Anne Alder	801-521-4923	801-673-2810
Safety & Security Officer	Dan Maxwell	801-521-4961	801-678-6245
OPERATIONS SECTION			
Operations Section Chief	Lyle Hansen	801-521-4858	556-9196
Operations Section Chief	Terrell Huber	801-366-2004	801-558-0096
Operations Section Chief	Brent Barber	801-521-4932	801-556-9212
Field Supervisor	Don Stark	801-521-4951	801-243-4984
Field Supervisor	Matt Warner	801-521-4823	435-840-8304
PLANNING SECTION			
Planning Section Chief	Clark Waldron	801-366-2074	845-8147
Planning Section Chief	Lyle Hansen	801-521-4858	556-9196
Resource Status Unit	Marcia Girotto	801-521-4856	n/a
Situation Status Unit	Sherry Harris	801-521-4998	801-897-8541
Documentation Unit	Tiffani Scott-Bugni	801-521-4870	n/a
Documentation Unit	Gloria Cox	801-521-4811	801-558-9312
Environmental Unit	Michelle Bujdoso	801-366-2036	801-243-4268
Environmental Unit	Sergio Ibarra	801-366-2086	760-717-2568
LOGISTICS SECTION			
Logistics Section Chief	Roy Tingey	801-521-4817	801-824-1428
Logistics Section Chief	Clay Bacon	801-521-4910	n/a
Logistics Section Chief	James Smart	801-521-4842	801-694-8990
FINANCE SECTION			
Finance Section Chief	Patty Jin	801-521-4802	n/a
Finance Section Chief	Dean Adam	801-521-4878	801-349-7139

4.5.3 Incident Command Team Duties and Responsibilities

The ICS has been adopted so that response actions contractors, federal response groups, state response groups, and citizens response groups can be activated and meshed with the Tesoro team as required. A major oil spill will require the cooperation of federal, state, and local government agencies to adequately manage and respond to the spill. A Unified Command Team will be used to provide overall direction of the spill response and to insure that all interests and problems resulting from the spill are fully addressed.

The transfer of incident command authority (during drills and actual spills) will be announced during incident briefings or operations briefings. Transfer of command will also be listed in the Incident Action Plan (IAP) and changes will be recorded on the appropriate command post displays and in the incident command log.

FIGURE 4.3
INCIDENT COMMAND TEAM DUTIES AND RESPONSIBILITIES

Tesoro positions and roles described below are intended to be representative of the positions and roles described in the USCG Incident Management Handbook (IMH) and in the most currently updated Region 8 Regional and Area Contingency Plan. For the purpose of training and/or role clarification we will refer to the ACP roles that apply to our ICS positions. Abbreviated role descriptions in the FRP are intended to help reduce the bulk of the plan. Tesoro may, from time to time, elect to fill certain ICS support positions with approved response contractor or contract personnel, **at no time will these individuals be cast in the role of IC or Section Chief.**.Tesoro will follow a Planning Cycle consistent with the ACP. Refer to the Tesoro Incident Management Handbook and position Job Aids for more information on organization and duties for each specific position.

SPILL RESPONSE MANAGER

Incident Commander/ Responsible Party (IC/RP): Responsible for managing the crisis including the development and implementation of strategic decisions. The Incident Commander/Responsible Party (IC/RP) may designate a Deputy to delegate the duties and responsibilities found on the checklist of positions identified in the FOG.

Deputy Incident Commander (DIC): Assists by carrying out assignments and duties as given by the IC/RP. In the event the IC could no longer perform required duties the DIC would assume those duties. The DIC is trained to perform the role of the IC/RP.

COMMAND STAFF

Legal Officer: Provides advice on all aspects of an oil spill incident. Ensures that information which may be relevant to the defense and/or settlement of future claims is gathered and preserved. Assists members of the IMT upon request in making legal judgments and decisions related to safe and expedient resolution of the response.

Liaison Officer: Responsible for communicating with local, state, and federal government agencies not involved in the unified command structure. Also advises interested groups, corporations, and organizations of the actions that the Crisis Management Team (CMT) and/or Unified Command is taking to address concerns. This position may be filled by an agent of the WDOE rather than the Company unless otherwise directed by the Unified Command.

Information Officer: Responsible for the formulation and release of information about the crisis to the news media. Is expected to work in concert with other members of the Joint Information Center (JIC) when the magnitude of an event warrants formation of a JIC. Provides Company based information to be used in dissemination of facts and information regarding a crisis event. This position may be filled by an agent of WDOE rather than the Company unless otherwise directed by the Unified Command.

Safety Officer: Responsible for monitoring and assessing hazardous and unsafe situations and developing measures for ensuring personnel safety. Follows prescribed guidelines detailed in the FOG and NWACP in an effort to anticipate potential hazardous working conditions and prevent exposures to the public and response personnel.

Security Officer: Responsible for providing safeguards needed to protect personnel and property from loss and damage. Specific Post Orders" are developed to custom-fit the security needs of the crisis. Generally keeps watch over areas defined by the Unified Command as limited or no access areas. May work directly with LOSC or other local authority upon request.

OPERATIONS SECTION

Operations Chief: Responsible for the management of all operations directly applicable to control, containment, recovery, clean up, and rehabilitation. Activates and supervises organizational elements in accordance with the response objectives set forth in the IAP. Follows the guidance of the NWACP by drafting primary and alternative response strategies, work assignments, and identifiable resources necessary to sustain a long-term response activity.

Operations Specialist: Assists and provides information for field operations

Field Supervisors: Responsible for the implementation of an assigned portion of the Incident Action Plan, assignment of resources within the progress of control operations and the status of resources.

Air Ops Branch: Primarily responsible for preparing the air operations portions of the Incident Action Plan. The plan reflects Company or Agency restrictions that have an impact on the operations capability of utilization of resources.

PLANNING SECTION

Planning Section Chief: Responsible for the collection, evaluation, dissemination, and use of information about the development of the spill and status of resources. The information as needed to understand the current situation, predict the probable course of incident events and prepare alternate strategies and control operations for the incident. The Planning Chief will follow the Planning Cycle as outlined in the NWACP Section 2100.

Resources Unit: Responsible for the establishing all check-in activities; preparation and maintenance of displays, charges, and lists that reflect current status; the preparation and processing of resources status change information and the location of incident resources.

Situation Unit: Collects and organizes spill status and situation information. Responsible for the evaluation, analysis, and display of that information.

Documentation Unit: Maintains accurate and complete historical files, and provides duplicating services and stores incident files for legal, analytical, and historic purposes.

Environmental Unit: Tesoro recognizes the Environmental Unit Leader position will initially be filled by an IC/RP designee until such time that Ecology or other trustee agency of the State of Washington arrives. At this point Unit Leader responsibilities may be passed to the State until it is deemed appropriate to return this function to the RP/IC designee, or until such time the RP/IC or U.C. directs the change to be made.

The E. U. determines extent of environmental damage and evaluates the effects of clean up methods on the environment; obtains necessary permits, coordinates with government agencies to arrange for disposal of recovered oil and waste, and implements wildlife protection and treatment plans.

Technical Specialist: Technical specialists are advisors with special skills needed to support incident options. They may report to the Planning Section Chief; function within an existing unit such as the situation unit, form a separate unit if required, or be reassigned to other parts of the organization. Filled by contract services personnel.

LOGISTICS SECTION

Logistics Section Chief: Responsible for providing facilities, services and materials in support all phases of the incident response.

Supply Unit: Orders personnel, equipment, and supplies; receives and stores supplies; maintains inventories and distributes supplies as requested.

Facilities Unit: Provides for office work areas, living quarters and storage buildings; provides sanitation facilities, manages remote camps and general maintenance to facilities.

Group Support Unit: Provides for transportation of personnel, supplies, food and equipment; performs fueling, service and repair work to vehicles and other ground support equipment; implements traffic plan for the incident.

Medical Unit: Develops a Medical Emergency Plan and renders medical aid for injured and ill personnel assigned to the spill.

Food Unit: Determines feeding requirements at all spill locations and facilities; provides drinking water and contractor oversight.

Comms Unit: Develop plans for the effective use of spill communications equipment and facilities; installs and tests equipment and operates an Incident Communications Center.

Radio Dispatch: They maintain communication links between command post and filed supervisors. Provide for recording of all communications and routing of hard copy to required parties.

Procurement Unit: Administers and establishes, as necessary, vendor contracts for operations support-related supplies, services, and technical consultants.

FINANCE SECTION

Finance Section Chief: Responsible for all financial and cost analysis aspects of the spill.

Time/Cost Unit: Provides time/cost reporting of labor, materials and supplies used during spill containment and repair.

Insurance Unit: Initiates investigation and documentation on all claims other than personal injury and arranges for damage surveyors and adjusters.

4.5.4 Government Agencies

The primary government agencies concerned with Utah oil spills are the Utah Division of Environmental Response & Remediation and EPA.

The Utah Division of Environmental Response & Remediation is the lead state agency for environmental pollution response within the State of Utah. The USCG and EPA are the lead agencies and pre-designated Federal On-Scene Coordinators (FOSC) for oil spill response activities as established by the *National Contingency Plan*. The EPA has primary responsibility for spills that occur on inland U.S. waters not under USCG jurisdiction, and all spills on land. The USCG has primary responsibility for coastal zones.

In the event of a major spill, an FOSC will be designated. The FOSC for the Salt Lake City area will be an EPA representative. The FOSC will facilitate communications with federal, state, and local government agencies that will be involved in response operations. The primary responsibility of the FOSC, as defined in 40 CFR, Part 300 (*National Oil and Hazardous Substance*

Contingency Plan), is to direct the efforts of government agencies during a spill emergency.

The FOSC may receive advice from the Regional Response Team (RRT). The RRT, which is comprised of representatives of federal/state agencies, has been established to provide the FOSC with technical and professional assistance.

Special pollution control forces and teams have been assembled to enhance the ability of the FOSC and RRT to respond to major oil spills. The NOAA (National Oceanic and Atmospheric Administration) Scientific Support Team, under the direction of the Scientific Support Coordinator, provides information on spill trajectories and critical habitats. The USCG Strike Teams have air-deployable equipment and experienced operators to respond to major spills. The National Strike Force totals over 200 active duty, civilian, and reserve personnel and includes the National Strike Force Coordination Center (NSFCC) in Elizabeth City, NC; the Atlantic Strike Team in Ft. Dix, NJ; the Gulf Strike team in Mobile, AL; the Pacific Strike Team in Novato, CA; and the Public Information Assist Team (PIAT) located at the NSFCC.

The FOSC is authorized to determine the adequacy of the private cleanup efforts. If efforts are determined inadequate or ineffective, the FOSC may assume control of the cleanup.

Air, ground and vessel traffic control will be managed by the respective federal, state or local agencies including the Federal Aviation Agency (FAA), USCG and local police/sheriff departments. A private security service may be contracted to assist in site security and traffic control.

4.5.5 Volunteers

Tesoro does not intend to utilize citizen volunteers for spill response. All individuals who volunteer will be referred to persons designated by the Federal and/or State On-Scene Commanders.

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SECTION5 INCIDENT PLANNING/DOCUMENTATION

5.1 DOCUMENTATION PROCEDURES

The Company has adopted the National Incident Command System (NIMS) as their response management system. The Health & Safety Representative maintains a set of all forms for documentation during an exercise or actual spill event. In addition, each Section Chief maintains the forms specific to their functional group.

Documentation of all events of an oil spill is important in order that management can keep informed, and that accurate reports can be provided to government agencies and the media. The following provides considerations to ensure that effective documentation practices are followed.

Documentation of an oil spill will provide a record of the events as they occur. It will provide the necessary data to determine the accuracy of trajectory analysis, spill size predictions, success of containment, and clean-up operations. Thorough documentation of all events will aid in determining adequacy of spill response plan, modifications needed, and potential improvements for future response operations.

Documentation should begin immediately upon notification of an oil spill and continue until post spill assessments have been made.

The types of information required to provide adequate documentation include:

- Origin of spill.
- Spill characteristics.
- Photographic surveys.
- Climatological reports.
- Cost information.
- Equipment utilization and evaluation.
- Copies of logs.
- Records of contacts with and permits obtained from regulatory agencies.
- Copies of plans prepared for the incident.

5.1.1 Origin of Spill

All factors, which led to a failure resulting in a spill, should be documented. This should include information as the following, if applicable:

- Description of exact piece of equipment that failed.
- Persons responsible for causing spill, including their affiliation with contractors or other organizations.

- Apparent cause of equipment failure.
- If safety or operations practices were not followed, state details.
- If act of vandalism, report any indications leading to identity of persons involved.

5.1.2 Spill Characteristics

All relative information pertaining to the oil spill should be recorded throughout the incident. Records should include, but not limited to, the following information.

- Person discovering the spill.
- Date and time spill occurred or was first observed.
- Location of spill occurrence and area covered by oil.
- Actual or estimated spill volume and direction of movement.
- Type of pollutant.
- Rate of release, known or estimated.
- Effectiveness of containment.

5.1.3 Photographic Surveys

Photographic coverage of the oil spill incident could provide important documentation of the incident, if warranted and feasible. Consideration should be given to photographing important activity/events.

All photographs should properly be identified with respect to location, date, subject, time, direction, photographer's name, and any witnesses present.

5.1.4 Climatological Reports

Climatological data to be gathered for the affected areas during the incident would include:

- Temperature.
- Precipitation.
- Wind direction and speed.
- Surface currents (Estimate velocity).
- Ice and/or snow cover.

5.1.5 Cost Information

A complete record of all costs incurred during the oil spill incident should be maintained, including costs of:

- Equipment.

- Contractual support (labor and equipment).
- Supplies and materials.
- Property damage claims.
- Repair.
- Support services (photographic, sample analysis, transportation, food, etc.).
- Legal services.

5.1.6 Equipment Utilization and Evaluation

Records should be maintained of all equipment utilized during the spill incident and necessary data and information should be gathered to allow an evaluation of he performance of major equipment items, i.e.. skimmers, booms, and sorbents. This information will allow updating of containment, exclusion and clean-up procedures and will indicate the need for obtaining additional and/or different equipment.

5.1.7 Logs

Copies of personal logs that individuals maintained during response operations should also be gathered as part of the documentation record. This information would be particularly useful during the post-spill assessment in determining the strengths and weaknesses of the response efforts.

5.1.8 Record of Contacts with and Permits Obtained from Regulatory Agencies

All contacts with and directives from regulatory agencies should be recorded and copies should be made of all permits obtained for specific operations which are subject to regulations such as disposal of oil materials, utilization of government owned equipment, access to land.

5.1.9 Copies of Plans Prepared for the Incident

All of the plans that were prepared to guide response operations should be copied and maintained as part of the documentation records. This plan provides a chronological record of the significant decisions that were made and actions taken during the incident response.

5.2 HEALTH AND SAFETY PLAN

SAFETY IS THE PRIMARY CONSIDERATION IN THE RESPONSE TO AN OIL SPILL. NO SPILL RESPONSE ACTIVITIES SHOULD BE CONDUCTED UNTIL IT IS SAFE!
THE TESORO SAFETY OFFICER IS: *Safety Team Lead*...*(801) 521-4923* THE BACK UP IS: *Health &Safety Representative* ....*(801) 521-4887*

The Health and Safety Plan can be used to identify hazards to responders during the initial response. Additional health and safety information, presented in the Salt Lake County Emergency Operations Plan, will be used to develop a more detailed site safety plan.

The Safety Engineer and the Health & Safety Representative will be responsible to assure the safety of all people who may be impacted by the spill. The Safety Team Lead will initially assume the role of Safety Officer and should enlist the help of the Tesoro Safety Department from San Antonio. The Tesoro Safety Officer will be responsible for the preparation of the Safety and Security Plan, and will be responsible for direction of all safety and security activities during a major Tesoro spill response. All spill response contractor Safety Officers will be advisors to the Tesoro Safety Officer on health and safety issues. The Tesoro Safety Officer will direct teams of trained operators equipped with self-contained emergency air packs, organic vapor respirators, and explosion meters to determine and mark the area of any vapors emanating from the spill so that safe limits for response activities can be determined. This equipment is available through vendors and contractors identified in **Section 3.**

5.2.1 Incident Safety Plan

In addition to assessing the dangers of explosion and fire, the Tesoro Safety Officer will ensure the protection of worker health and safety. This protection is achieved by assessing and establishing exposure control zones to which only appropriately trained and equipped personnel may enter.

The criteria for establishing safety zones and respiratory protection requirements for petroleum products handled at the Salt Lake City Refinery may use spill response limits for petroleum distillates (i.e., 500 ppm for 8-hours or 333 ppm or 12 hours).

Personal equipment recommended for protecting ***SKIN*** includes PVC gloves and boots for hands/feet, and PVC rain suit or Tyvek coveralls for the body.

At a minimum, safety glasses should be worn for ***EYE*** protection. Chemical goggles or a face shield should be used if a splash hazard is present. Eye protection is not required if a full-face respirator is worn.
Local police and fire departments will be notified of all major spills and, if necessary, their on-site assistance will be requested to ensure personnel health and safety.

The Tesoro Safety Officer will prepare an Incident-Specific Health and Safety Plan. The format to be followed in developing an incident-specific Health & Safety Plan is provided below. Material Safety Data Sheets (MSDS) are available at the refinery and on the Tesoro intranet accessed through the Contingency Planning & Emergency Response page http://gotso/departments/contingency-planning/Pages/default.aspx. At minimum, the following federal safety standards will be addressed in the development of the Incident-Specific Health and Safety Plan:

- 29 CFR Part 1910, Occupational Health & Safety Standards
- 29 CFR Part 1904, Record keeping & Reporting Occupational Illnesses
- 29 CFR Part 1910.120, Hazardous Waste Operations and Emergency Response
- 29 CFR Part 1910.132-37 Subpart 1, Personal Protective Equipment
- 29 CFR Part 1920.38, Employee Emergency Action Plans & Fire Prevention
-

The Tesoro Safety Officer should be aware that local safety requirements are variable from state to state. The Tesoro Safety Officer should establish a dialogue with the Utah Department of Public Safety and local oil spill response contractors to assure that safe work places are established for all responders that comply with local regulations.

TESORO

PERMIT & PLAN
SIGN-OFF SHEET

INCIDENT NAME: ______________________ **DATE PREPARED:** __________

OPERATIONAL PERIOD: ______________________

Safety Plan

APPROVED BY:

RPIC	DATE
FOSC	DATE
SOSC	DATE
LOSC	DATE
TOSC	DATE

COMMENTS:

Table of Contents

SECTION 1 – INCIDENT DESCRIPTION

WORK SITE: enter information	**INCIDENT:** enter information
DATE/TIME: enter information	**SHIFT:** enter information
PRODUCT: enter information	**MSDS (Attached):** enter information
SAFETY OFFICER: enter information	**CONTACT RADIO FREQUENCY & PHONE NUMBER:** enter information
INCIDENT COMMANDER: enter information	**CONTACT RADIO FREQUENCY & PHONE NUMBER:** enter information

1.1 EVENT DESCRIPTION

Type of Event:

___ SHIP OR BARGE ____ PIPELINE ____ STORAGE TANK

___ OTHER: ____

Event Description:

Enter event description here.

1.1 HAZARDS:

Check all that apply:

_____ Oxygen
_____ Explosive Vapors >10% LEL
_____ Benzene
_____ H2S
_____ High CO
_____ Fire Hazard
_____ Skin Exposure
_____ Eye Hazards
_____ Heat Stress

_____ Slips, Trips & Falls
_____ Wind Chill
_____ High Winds
_____ Working 4' Over the Ground
_____ Night Ops
_____ Pinch Points
_____ Hypothermia
_____ Other (working on water)
____

1.2 METEOROLOGICAL OUTLOOK

Current Weather Conditions	**Forecasted Weather Conditions**
Wind Speed: ______ Wind Direction: ______ Air Temperature: ______ Ceilin g: ______ Precipitatio n: Rain Snow ______ Comment s:	Wind Speed: ______ Wind Direction: ______ Air Temperature: ______ Ceiling : ______ Precipitatio n: Rain Snow ______ Comment s:
Current Water Conditions	**Forecasted Water Conditions**
Water Temperature: ______ Wave Height: ______ Wave Direction: ______ Current Speed: ______ Current Direction: ______ Tide Forecast Location: ______ Low Tide Times: ______ Low Tide Levels: ______ High Tide Times: ______ High Tide Levels: ______ Comment s:	Water Temperature: ______ Wave Height: ______ Wave Direction: ______ Current Speed: ______ Current Direction: ______ Tide Forecast Location: ______ Low Tide Times: ______ Low Tide Levels: ______ High Tide Times: ______ High Tide Levels: ______ Comment s:
Today's Sunrise/Sunset	**Tomorrow's Sunrise/Sunset**
Sunrise Time: ______ Sunset Time: ______ Comment s:	Sunrise Time: ______ Sunset Time: ______ Comment s:
Watches/Warnings/Advisor ies:	

1 knot = 1.15 mph

SECTION 2 – SAFETY GUIDELINES

2.1 SITE SAFETY

1. This initial plan is intended to provide guidance for the Site Supervisors, Responders and Contractors for post-emergency response to an oil spill.

2. No smoking, eating or drinking is allowed in contaminated areas; smoking will be allowed in the support zone (cold zone) in designated areas only.

3. Work sites and boats are limited to authorized personnel only.

4. A list of personnel on each job site will be kept for each shift showing arrival and departure from the site.

5. The operator of any vessel is responsible for the overall operation of the vessel and is in charge of all emergencies aboard that vessel.

6. Employees and contractors shall:
    a. Report all injuries, illness or near miss incidents to the Site Supervisor, Safety Officer or Section Chief.
    b. Read and sign the Site Safety Plan before starting work at the job site.
    c. Sign the log sheet for each safety briefing.
    d. Report all illness, injuries, or medications they are taking to their Site Supervisor prior to entry or upon exiting the job site.
    e. Report unsafe acts or conditions to the Site Supervisor or the Site Safety Officer. If unsafe conditions or work practices are observed, stop those operations immediately.
    f. Be responsible for inspecting their personal protection equipment (PPE) prior to entry into a job site.
    g. Use the "buddy system" and monitor each other for job-related injuries, exposure to the elements, or any other abnormal behavior.

2.2 MATERIAL SAFETY DATA SHEETS

1. An MSDS will be made available and reviewed by all employees and subcontractors at the job site as part of the Site Safety Plan.

2. Specific Information that should be noted from the MSDS is: Product name, Date of MSDS, Hazardous components, Chemical and Physical characteristics and Health hazards.

2.3 SAFETY EQUIPMENT – PPE

Conventional Safety Equipment

REQUIRED		PPE TYPE	COMMENTS
YES	NO		
		Personal Floatation Device	Over water/onboard ship
		Hardhat	At all times
		Safety Glasses	Helo pad/wildlife handling
		Goggles	Clean up/chemical handling /splash hazards
		Hearing Protection	Helo pad/equipment operation
		Gloves (Material)	Nitrile/PVC when handling oils and/or chemicals/clean up operations
		Rubber Boots	Nitrile/PVC when handling oils and/or chemicals/clean up operations
		Yellow Rain Gear	Inclimate weather/handling oils and/or chemicals/clean up operations
		Other	Chemical Tyvek may also be used for oil clean up

Additional Safety Equipment

REQUIRED		PPE TYPE	COMMENTS
YES	NO		
		Half Mask Respirator	As required by air monitoring results
		Full Face Respirator	As required by air monitoring results
		Supplied Air	As required by air monitoring results
		Other	

PPE indicated above is required for entry into Hot Zone areas.

2.4 DAILY DECONTAMINATION GUIDELINES FOR PERSONNEL

1. Three zones will be established and identified as the Hot Zone, Decon Areas and Cold Zone. Decon of equipment and/or personnel will take place in the two designated Decon Areas.

2. Personnel working inside the Hot Zone must check in and out of the Hot Zone. The Buddy System is in effect for all work parties. No one is allowed to enter or leave the site alone.

3. Decon Areas are provided as a control point for decontamination of individuals leaving a contaminated area. It is key in preventing the spread of contamination as well as providing worker support. These areas are identified on the Spill Plan Worksheets.

4. Decon procedures will be explained to response personnel prior to starting work at the job site. This document provides an organized method by which levels of contamination are reduced.

2.5 OFFSITE CONTROL

Response Zones

Control boundaries have been established and the Hot Zone (contaminated area), Decon Areas, and Cold Zone have been identified as follows, (refer to the Spill Plan Work Sheet):

- Hot Zone - areas involved with the clean up operations.
- Decon Areas and Wildlife handling areas will be adjacent to the hot zones.
- Cold Zone - all areas immediately outside the hot zone.
- No unauthorized person should be within these areas. No persons shall be in the Hot Zones without proper PPE.

Coordinating access control and on site security will be coordinated by: Tesoro Safety

The Onsite Command Post has been established at: location

Community Safety:
Roads: enter information
Boaters: enter information
Surrounding Community: enter information
Sheriff: enter information
Air: enter information

2.6 COMMUNICATIONS

1. Channel # and Name has been designated as the radio frequency for personnel in Hot Zone.

   Other channels for spill activities are:
   - Air Ops. – enter information
   - Air medical to Ambulance – enter information
   - Bird Rescue – enter information

2. Personnel in the Hot Zone will remain in constant radio communication or within sight of the Site Supervisor. Any failure of radio communication requires an evaluation of whether personnel should leave the Hot Zone.

3. The emergency signal to indicate that all personnel should leave the Hot Zone is to announce “Evacuate” over all radio channels.

4. The following standard hand signals will be used in case of radio failure:

- Hands on top of head: *Need assistance*
- Thumbs up: *I am all right, I understand*
- Thumbs down: *Negative*

2.7 PERSONNEL AND ENVIRONMENTAL MONITORING

Monitoring plan must include substance monitored, monitoring equipment and frequency.

HAZARD	MONITORING INSTRUMENT	FREQUENCY (*select one)			
LEL	**Industrial Scientific TMX 410**	continuous	hourly	daily	other
BENZENE	**Drager model GV-100**	continuous	hourly	daily	other
H2S	**Industrial Scientific HMX 271**	continuous	hourly	daily	other
OTHER		continuous	hourly	daily	other

Personnel Monitoring

Initial Air monitoring performed. Based on findings, respiratory protection is not required. Monitoring results for LEL, Benzene, and H2S have shown that all exposures are below the PEL's. Air monitoring will be performed prior to each shift and/or prior to each new task being performed. Area monitoring for LEL and H2S to be performed while working under dock.

Environmental Monitoring

Initial monitoring to be performed and additional monitoring performed based on initial readings and changing conditions.

2.8 TRAINING

All Responders involved in these operations shall have been appropriately trained in emergency response procedures in accordance with the Tesoro Northwest Oil Spill Response Plan. They shall have been trained to the HAZWOPER level prescribed for them by the Tesoro training database.

All Tesoro Contractor personnel involved in these operations shall have been appropriately trained in emergency response and the appropriate HAZWOPER level.

2.9 EMERGENCY PROCEDURES

Onsite personnel will use the following standard emergency procedures. The Site Safety Officer shall be notified of any onsite emergencies and be responsible for ensuring that the appropriate procedures are followed.

Personnel Injury in the Hot Zone:
Upon notification of an injury in the Hot Zone, the designated emergency signal shall be sounded. All site personnel shall assemble at the decontamination line. The rescue team will enter the Hot Zone (if required) to remove the injured person to the hotline. The Site Safety Officer, Operations Coordinator and Site Supervisor should evaluate the nature of the injury, and the affected person should be decontaminated to the extent possible prior to movement to the Cold Zone. The onsite first responders shall initiate appropriate first aid, and contact should be made for an ambulance. No persons shall reenter the Hot Zone until the cause of the injury or symptoms is determined.

Personnel Injury in the Cold Zone:
Upon notification of an injury in the Cold Zone, the Operations Coordinator and Site Safety Officer will assess the nature of the injury. If the cause of the injury of loss of the injured person does not affect the performance of the onsite personnel, operations may continue. If the injury increases the risk to others, the designated Emergency Stop Alarm will be sounded and all site personnel shall move to the decontamination line for further instructions. Activities on site will stop until the added risk is removed or minimized.

Fire/Explosion:
Upon notification of fire or explosion on site, or the need for rescue, the designated Emergency Stop Alarm will be sounded and all site personnel shall assemble at the decontamination line. Onsite coordinators will account for their personnel and all unaffected personnel will be moved to a safe distance from the involved area.

Personnel Equipment Failure:
If any site worker experiences a failure or alteration of protective equipment that affects the protection factor, that person and his/her buddy shall immediately leave the Hot Zone. Reentry shall not be permitted until the equipment has been repaired or replaced.

Other Equipment Failure:
If any other equipment on site fails to operate properly, the Operation Coordinator and Site Safety Officer shall be notified and then determine the effect of this failure on continuing operations on site. If the failure affects the safety or personnel or prevents completion of the work plan tasks, all personnel shall leave the Hot Zone until the situation is evaluated and appropriate actions taken.

Emergency Escape Routes:

The following emergency escape routes are designated for use in those situations where egress from the Hot Zone cannot occur through the Decon Area: Take the shortest, upwind evacuation route out of the HOT ZONE. Assembly point for evacuation is the closest, safest decon site.

In all situations, when an onsite emergency results in evacuation of the Hot Zone, personnel shall not reenter until:

- The conditions resulting in the emergency have been corrected.
- The hazards have been reassessed.
- The Site Safety Plan has been reviewed.
- Site personnel have been briefed on any changes in the Site Safety Plan.

SECTION 3 – RESPONDER SAFETY INFORMATION

The ultimate responsibility for safety rests with the individuals. At all times, they should keep the following safety cycle in mind:

1. Decide to work safely.
2. Exercise good judgement and common sense.
3. Observe all safety regulations and instructions.
4. Think about prevention of unsafe acts.
5. Stop if unsafe conditions are observed.

It is also important to watch out for your fellow worker. When ever possible, the buddy system should be adopted. Keep an eye out for unsafe acts or unsafe conditions that your fellow worker may not be aware of.

During the conduct of response operations, there may be exposure to chemical and / or physical hazards such as:

- Inhalation of vapors
- Irritation of the skin
- Elevated or lowered body temperatures due to work environment.
- Exhaustion from long hours of demanding work.
- Stress, both physical and mental.
- Injuries due to lifting and body positioning.
- Cuts, bruises, sprains and strains.
- High levels of noise.

To eliminate or reduce these hazards to the maximum extent, it is imperative that the procedures prescribed in the following sections are followed.

3.1 GENERAL SAFETY PRACTICES

- Exercise good sound judgment and common sense
- Follow supervisor's instructions
- Be alert to health and safety hazards
- Attend all required safety meetings
- Wear proper safety equipment
- Set good examples for others
- Make sure tools and equipment are in good working condition.
- Use all tools and equipment as designed.
- Store tools and equipment safely after use.
- Avoid carrying loads that extend above eye level or otherwise obstruct vision.
- Size up loads before attempting to lift. Get help when needed.
- Observe all warning signs.
- Report all injuries when they occur.
- Keep work areas clear. Good housekeeping is a must.

3.2 BOAT AND WATER SAFETY

When boarding a boat, each individual should:

- Have their hands free to ensure good balance
- Know who the vessel captain is. The vessel captain has ultimate authority over all persons on the boat.
- Become familiar with the layout of the boat.
- Know where emergency equipment is located and how to use it (i.e. fire extinguisher, life jackets, life rings, and life rafts).
- Board a vessel only with a U.S.Coast Guard approved personal floatation device. Wear the device properly.

Onboard Vessel

While onboard the vessel:

- Watch out for slippery deck surfaces, especially if they are covered or stained with spilled oil. Use sorbant pads to clean up oil and/or to improve traction along walkways.
- Watch for erratic boat motions. Use safety lines when working on the deck.
- Avoid taking medicines for seasickness because they induce drowsiness
- Maintain awareness of other activities underway while performing your tasks.
- Maintain good housekeeping practices. Keep clear of ropes and lines.
- Wear gloves while handling ropes and cables.
- Wear a personal floatation device.
- Keep safety railings and/or chains in place until it is necessary to remove them to work. Replace railings/chains as soon as possible.

Capsized Craft

If the craft capsizes:

- Make every effort to get out of the water and onto the hull of the craft. If the craft continues to float, it is usually better to remain with it.
- The craft will be seen, and more easily located by rescue personnel than a lone person.
- If you cannot get out of the water, remain calm. Conserve your energy. Float as still as possible with legs together, elbows close to sides, and arms folded across the front of your lifejacket.
- Try to raise an alarm.

Overboard Victim

If a person sees someone fall overboard, the observer should:

- Watch victim constantly. Point to the victim while raising the alarm.
- Notify others by calling "Man Overboard".
- Obtain a life ring to assist in retrieving the victim.

If the overboard victim is rational but shivering when pulled onboard, have them remove wet clothes, put on dry clothing or a blanket, and rest in a warm environment.

If semiconscious or unconscious:

- Check for breathing and heartbeat. Administer CPR in necessary.
- Move victim to a warm environment
- Remove victim's clothes. Do not massage the skin
- Insulate the victim from further heat loss. Wrap in a blanket.
- Do not attempt aggressive warming.
- Gentle warming can be attempted by placing a bottle filled with warm water next to victims head, neck, arm pits, or groin
- Do not give the victim anything to eat or drink, and never offer alcohol.

3.3 VEHICLE SAFETY

All persons called upon to operate a vehicle should:

- Always carry a valid driver's license.
- Wear a seat belt.
- Be familiar with the vehicle's equipment and operation.
- Keep windows and mirrors clean and unobstructed at all times.
- Report any accident or unsafe condition to their supervisor.
- Obey all rules of the road.
- Never engage in horseplay.

3.4 EQUIPMENT SAFETY

The key to equipment safety is knowing how to operate a piece of equipment. If you have not been trained and understand how to operate a piece of equipment, notify your supervisor. While operating equipment, observe the following:

- Keep alert at all times. Know and follow signals of the operators.
- Wear the proper PPE.

- Do not wear loose fitting clothing. Keep hair tied up in such a way that it cannot come into contact with rotating parts.
- Know the safety features of the equipment. Know how to shut down and secure the equipment should an emergency occur.
- Do not operate electrical equipment while standing in water.
- Use walkways and steps where provided. Do not take short cuts.
- Use the proper tools. Do not use tools or equipment for something they were not intended.
- Follow manufactures recommendations and guidelines for equipment and tools.

3.5 HELICOPTER SAFETY

When approaching a helicopter, a person should;

- Look for the pilot to give a hand signal when it is safe to approach the helicopter.
- Always walk towards the front of the helicopter. Never walk towards or around the rear of a helicopter, even when it is idle.
- Wear a hard hat, and use one's hand to secure it to one's head.
- Wear proper eye protection.
- Ensure the pilot brief's the passenger on safety procedures before each flight.

3.6 CHEMICAL HAZARDS

Depending on the specific operations conducted at the spill scene, a person may be exposed to the following substances:

- Fuel Oil Residual
- Catalytically Cracked Clarified Oil
- Hydrogen Sulfide

Material Safety Data Sheets (MSDS), describing the specific hazards and precautions to be taken when handling each of these products will be available for inspection on the site. Follow precautions carefully.

All containers should be labeled as to their contents. If the containers are unidentified or unlabeled, they should notify their supervisor and not handle the container until it has been properly identified and labeled.

3.7 PHYSICAL HAZARDS

Hypothermia

Water Temperature and air temperature can be low enough to expose the body to rapid heat loss and a cooling of the body core temperature. In cold water, the body will lose heat many times faster than in the air. Even outside the water, wet clothing will conduct heat away from the body much faster than dry clothing. Normally a combination of climatic/environmental and body factors results in a person suffering from hypothermia.

Symptoms of hypothermia include:

- Continual shivering and paleness.
- Lack of coordination
- Slurring of speech
- Lack of concentration
- Dazed or confused behavior

When a person suffers from severe hypothermia, shivering will stop, blood pressure will drop substantially, consciousness will be clouded, respiration will decrease, and the victim's muscles will become rigid. Unconsciousness will ultimately occur, and death may be imminent.

To protect against hypothermia, a person should:

- Be aware of the weather, check the forecast
- Wear appropriate clothing
- If clothing becomes wet, remove it and dry it as much as possible before putting it back on
- Control sweating by removing layers of clothing so that a uniform body temperature is maintained
- Replenish energy by taking breaks for food and warm liquids

Wind Chill Indicator

Temperature (F)

Wind (MPH)	**30**	**25**	**20**	**15**	**10**	**5**	**0**	**-10**	**-15**	**-20**	**-25**
5	25	19	12	7	1	-5	-11	-22	-28	-34	-40
10	21	15	9	3	-4	-10	-16	-28	-35	-41	-47
15	19	13	6	0	-7	-13	-19	-32	-39	-45	-51
20	17	11	4	-2	-9	-15	-22	-35	-42	-48	-55
25	16	9	3	-4	-11	-17	-24	-37	-44	-51	-58
30	15	8	1	-5	-12	-19	-26	-39	-46	-53	-60
35	14	7	0	-7	-14	-21	-27	-41	-48	-55	-62
40	13	6	-1	-8	-15	-22	-29	-43	-50	-57	-64
45	12	5	-2	-9	-16	-23	-30	-44	-51	-58	-65
50	12	4	-3	-10	-17	-24	-31	-45	-52	-60	-67
55	11	4	-3	-11	-18	-25	-32	-46	-54	-61	-68
60	10	3	-4	-11	-19	-26	-33	-48	-55	-62	-69

Frostbite occurs in 15 minutes or less

Noise

Response operations may require the use of generators, pumps, compressors, engines, and other equipment that generate high levels of noise. Short-term exposure to extremely loud noise and/or long-term exposure to low level noise can cause hearing loss. If a worker is assigned to a high noise area, they should wear proper hearing protection.

Dehydration and Heat Stress

Response operations can involve strenuous activities that can, even in relatively cool weather, lead to excessive sweating. This is even more likely to occur when wearing protective clothing that may reduce the body's ability to discard excess heat. This may lead to dehydration, heat rash, heat cramps, heat exhaustion, and possibly heat stroke.

Symptoms of dehydration:

- Cramping in arms, legs or abdomen
- Feeling faint, dizziness or fatigue

Need to take time to rest, preferably in a shady area, and rehydrate by drinking decaffeinated, non-alcoholic fluids

Symptoms of heat exhaustion:

- Faint, dizzy, nauseous feeling
- Sweating heavily or has pale skin color
- Rapid shallow breathing
- Dilated pupils, weak rapid pulse

Need to report to a first aid station immediately

Heat stroke is a life threatening condition. The body must be cooled down immediately. It is imperative to get medical attention at once.

Lifting hazards:

The following rules for safe lifting practices should be observed:

- Plan the lift and route to travel with the load prior to lifting.
- Know the approximate weight of the object prior to lifting.
- Lift with legs, keep back straight, knees bend, squat down to lift.
- Stand up slowly, keeping the load close to the body.
- Use wide balanced stance, with one foot ahead of the other.
- Move feet to change direction; do not twist at the waist.
- Avoid carrying loads that extend above the eye.
- If lifting/carrying with a partner, communicate all moves prior to performing.
- Push, do not pull heavy objects.
- Do not stand under a suspended load.

Slips, Trips, and Falls

Oily surfaces are extremely slippery. Even in slip resistant footwear, walking through an oily area may be hazardous. Also the decks of ships, the scene of shoreline protection and/or clean up operations and equipment in staging areas can contain numerous obstacles. When engaged in response operations:

- Be alert for oily surfaces.
- Use handrails and safety lines when available.
- Be aware of you surroundings. Identify tripping hazards and address the hazards appropriately.
- Keep all walkways, work surfaces, etc. free of debris, tools, or obstacles that could create a tripping hazard.

- Never engage in horseplay.

3.8 DRUM HANDLING

All drums and containers should be properly labeled. Material in unlabeled drums should not be used. Any such drums should be reported to supervision for action.

Drums and containers should be in good condition prior to being moved. Drums larger than 5 gallons should be lifted and moved with mechanical equipment.

If a drum spill occurs, notify supervision and use appropriate absorbent material or other methods to contain the spill.

3.9 PERSONAL PROTECTIVE EQUIPMENT

The primary objective of personal protective equipment is to prevent accidental contact with hazardous chemicals. Before a chemical can have an adverse effect, it must come into contact with a vulnerable area of the body. There are four methods of contact:

1. Injection - puncture wounds
2. Absorption - through healthy, intact skin or eyes
3. Inhalation - through the mouth or nasal passages. This is the most common route of entry.
4. Ingestion - direct or indirect consumption while eating or drinking

When engaged in response activities:

- Know how to don/doff personal protective equipment
- Know the limitations of the PPE
- Wear hearing protection when noise levels could cause hearing damage
- Safety glasses and slash goggles are not the same. Do not use safety glasses for protection against chemical.

Use only PPE that has been approved for use with the chemicals being handled. Leather gloves are not rated for use with oils, corrosive chemicals or hydrocarbons Wear proper footwear. Steel toe shoes are recommended when working around heavy equipment.

3.10 PERSONAL HYGENE

Good personal hygiene practices are essential to maintaining worker's states of health during response operations. Working with oils and oily wastes is dirty work. The nature of the work should not be allowed to lead workers to forsake basic personal hygiene considerations.

The following guidelines are recommended for all members of the response team:

- Shower and shampoo daily before reporting to work.
- While showering, check for unusual rashes, cuts, infections, etc.
- On sunny days, apply protective sunscreen to exposed skin.

- Use a barrier cream on hands before putting on protective gloves.
- If skin becomes contaminated with a hazardous chemical, report to a decontamination area and wash the affected area thoroughly with soap and water.
- If eyes become contaminated, report to a decontamination area and rinse the eyes for at least 15 minutes with clear water.
- If injured or ill at the work site, report to one's supervisor without delay.
- Do not touch food or drink with contaminated gloves or hands.
- Do not track oil into "clean" areas.
- Do not litter while on the work site.
- Ensure all toilet facilities are clean and sanitized to maintain healthy living conditions. Report any unhealthy conditions to your supervisor.
- Keep change rooms clean and orderly.
- Dispose of garbage and refuse in a sanitary manner.
- Water coolers or cans should be properly covered, labeled, and equipped with a spigot or valve.

3.11 DECONTAMINATION

One or more decontamination areas would be set up during response operations. These areas are to be used for decontamination at the work site, they are not to be used as a substitute for personal hygiene at home.

Decon areas are designed to protect the worker's health and to prevent the spread of contamination into "clean" areas. In the field it is not possible for a worker to remove all contaminated clothes each time they take a break from work. It is essential that a worker cleans their hands and face to avoid injecting or spreading oil or other chemicals to otherwise protected parts of their body.

In the field, the workers will be provided with:

- Soap, water, paper towels, waterless hand cleaner, and/or other materials for washing their face and hands
- An impermeable surface to sit on
- Refuse containers
- Eyewash station

3.12 SANITATION

Proper sanitation facilities must be provided at the clean up site. Lack of proper sanitation can result in outbreaks of dysentery, food poisoning, or other debilitating diseases.

Adequate facilities need to be provided for:

- Potable water
- Non-potable water (clearly labeled)
- Toilet facilities
- Food handling
- Temporary buildings
- Washing facilities
- Shower and change rooms

3.13 ILLUMINATION AND VISIBILITY

Poor visibility can lead to accidents. Clean up workers performing night operations should have personal flashlights. All work areas performing night operations need to be well lit.

3.14 CONFINED SPACES

Any area, which may contain or have the ability to contain toxic/flammable atmospheres, or oxygen deficient or excess, shall be considered to be a confined space. When entry to confined spaces needs to be performed, a safe work permit needs to be issued. The Safety Officer shall issue the safe work permit. The following are hazards and procedures, which need to be addressed on the permit:

- Atmospheric Monitoring – (Toxic, Flammable, Oxygen Deficient or Excessive.)
- Energy Isolation – LO/TO
- Mechanical Hazards
- Electrical Hazards

Procedures needed:

- Training
- Qualified Standby
- Emergency Notification
- PPE requirements
- Rescue

5.3 Waste Management

PERMIT & PLAN
SIGN-OFF SHEET

INCIDENT NAME: ______________________ **DATE PREPARED:** ____________

OPERATIONAL PERIOD: ______________________

Waste Disposal Plan

APPROVED BY:

RPIC	**DATE**
FOSC	**DATE**
SOSC	**DATE**
LOSC	**DATE**
TOSC	**DATE**

COMMENTS:

WASTE MANAGEMENT AND DISPOSAL PLAN

Incident Name:______________________________

Date Prepared:______________ Time Prepared:______________

Location(s)/Division(s) Covered By Plan:______________________________

____

ACP/Other References Consulted: ______________________________

GENERAL INFORMATION

Source Of Spill:______________________________

Total Amount Spilled:______________________________

Total Amount At Risk:______________________________

Type Of Material Spilled:______________________________

AGENCY INFORMATION

Lead Agency:______________________________

Agency Representative(s):______________________________

____

Telephone(s):______________________________

Comments:______________________________

____

____

VARIANCES

Inquiry Made To Obtain Variances On:______________________________

____

Individual(s) Contacted For Variances: ______________________________

____

Telephone(s): ______________________________

Comments:______________________________

____

____

SAMPLES

Media(s)/Date(s) Sampled:______________________________

Sample(s) Sent Via:______________________________

Laboratory Name(s):______________________________

SAMPLING/ANALYSIS PLAN(S) ATTACHED? ☐YES ☐ NO

CHAIN OF CUSTODY FORM(S) ATTACHED? ☐YES ☐ NO

Comments:______________________________

____

WASTE COVERED BY PLAN

SOLIDS

Type	Description(s)	Estimated Volume(s)
☐ Oiled Natural Inorganic (Sand, Peebles, Etc.)		
☐ Oiled Natural Organic (Driftwood, Seaweed, Etc.)		
☐ Man-Made Materials (PPE, Sorbents, Etc.)		
☐ Unoiled Solids		
☐ Other(s)		

Suspected Hazardous Waste? ☐Yes ☐ No

Determination By Generator Knowledge? ☐Yes ☐ No

Hazardous Waste Code(s):______________________________

Comments:______________________________

____

LIQUIDS

Types	Description(s)	Estimated Volume(s)
☐ Oil/Water Mixtures	______________________	______________
	______________________	______________
☐ Uncontaminated Petroleum Products	______________________	______________
	______________________	______________
☐ Waste Water	______________________	______________
	______________________	______________
☐ Spent Solvents/ Dispersants/ Fuels	______________________	______________
	______________________	______________
☐ Other(s)	______________________	______________
	______________________	______________

Suspected Hazardous Waste? ☐Yes ☐ No

Determination By Generator Knowledge? ☐Yes ☐ No

Hazardous Waste Code(s):____

Comments:____

____

____

____

TEMPORARY WASTE STORAGE

Estimated Storage Required (Roll Offs, Tanks, Etc.):

Storage Type	Estimated Capacity/Number Required

Prefered Location(s): ______________________________

____

____

Permit(s) Required For Temporary Storage: ______________________________

____

____

Ground/Runoff Protection Required For Storage Area? ☐ **Yes** ☐ **No**

Liners/Cover Protection Required For Storage? ☐ **Yes** ☐ **No**

Comments: ______________________________

____

____

WASTE TRANSPORTATION

Proposed Transportation Method(s):

Waste Type/Description	**Proposed Transport Method**

Permit(s)/License(s) Required For Transportation:______________________________

____

Liners/Cover Protection Required For Transportation? ☐ Yes ☐ No

Comments:____

____

____

____

____

____

DISPOSAL METHOD(S)

Method	Waste Type/Description	Available	Selected
Natural Degradation/ Dispersion	______	☐	☐
Wastewater Treatment Plant	______	☐	☐
Landfill	______	☐	☐
Land Farms	______	☐	☐
In Situ Burning	______	☐	☐
Open Pit Burning	______	☐	☐
Portable Incineration	______	☐	☐
Process Incineration	______	☐	☐
Reprocessing	______	☐	☐
Reclaiming	______	☐	☐
Recycling	______	☐	☐
Well Injection	______	☐	☐
Other	______	☐	☐

Comments:____

DISPOSAL RESOURCE(S)

Proposed Resource(s) For Disposal Method(s) Selected (Landfill Operators, Incinerator Facilities, Etc.):

Disposal Method	Resource(s)

Permit(s) Required For Disposal:

Comments:

HEALTH AND SAFETY PROCEDURES

Health/Safety Plan Attached? ☐ Yes ☐ No

Comments:

ADDITIONAL COMMENTS

CONTACTS AND APPROVALS

Contact For Further Information:

Approved By: Time/Date:

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SECTION 6 SENSITIVE AREAS/RESPONSE TACTICS

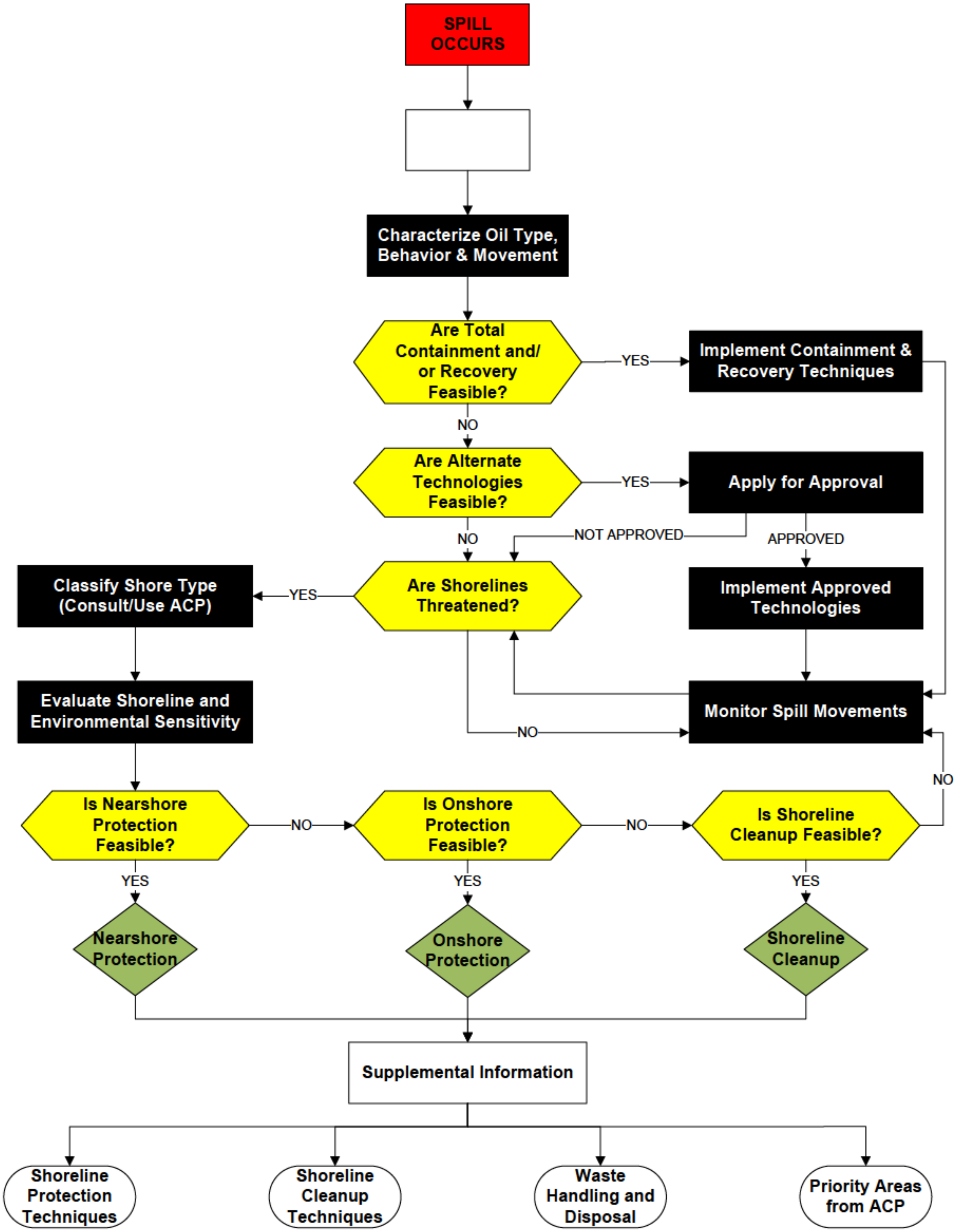
In the event an oil spill occurs at the Tesoro Salt Lake City Refinery, a response effort will be initiated as rapidly as possible. This section provides information to aid in the assessment of the spill's magnitude and the selection of appropriate response strategies. The sequence of response activities will generally follow those presented in the Response Decision Diagram shown in **FIGURE 6.1**.

Sensitive resources that may be impacted by a spill must be identified. Protection strategies and priorities for allocation of response resources must be identified. As a guideline, **FIGURE 6.1** presents an implementation sequence for protection of sensitive areas. This section describes different ecologically and culturally/economically sensitive resources which may be impacted by an off-site spill from the Company. Methods for protecting these sensitive resources are also discussed in **APPENDIX E** and discussed in the ACP.

To select proper response tactics, the following information will be necessary to identify, prioritize, and protect sensitive areas:

- Implementation sequence for protection of sensitive areas.
- Different ecologically and culturally/economically sensitive areas.
- Various coastal marine habitats presented in order of their relative sensitivity to oil spills based on the Environmental Sensitivity Index (ESI) system used by the National Oceanic and Atmospheric Administration (NOAA).
- Methods for protecting these sensitive resources.
- Guidelines for selecting the appropriate protection methods for each resource.
- Prioritization schemes for determining the order for protecting the resources.
- Booming strategies for specific areas within the spill envelope of the evaluated spills.

FIGURE 6.1
RESPONSE DECISION DIAGRAM



6.1 PROTECTION PRIORITIES

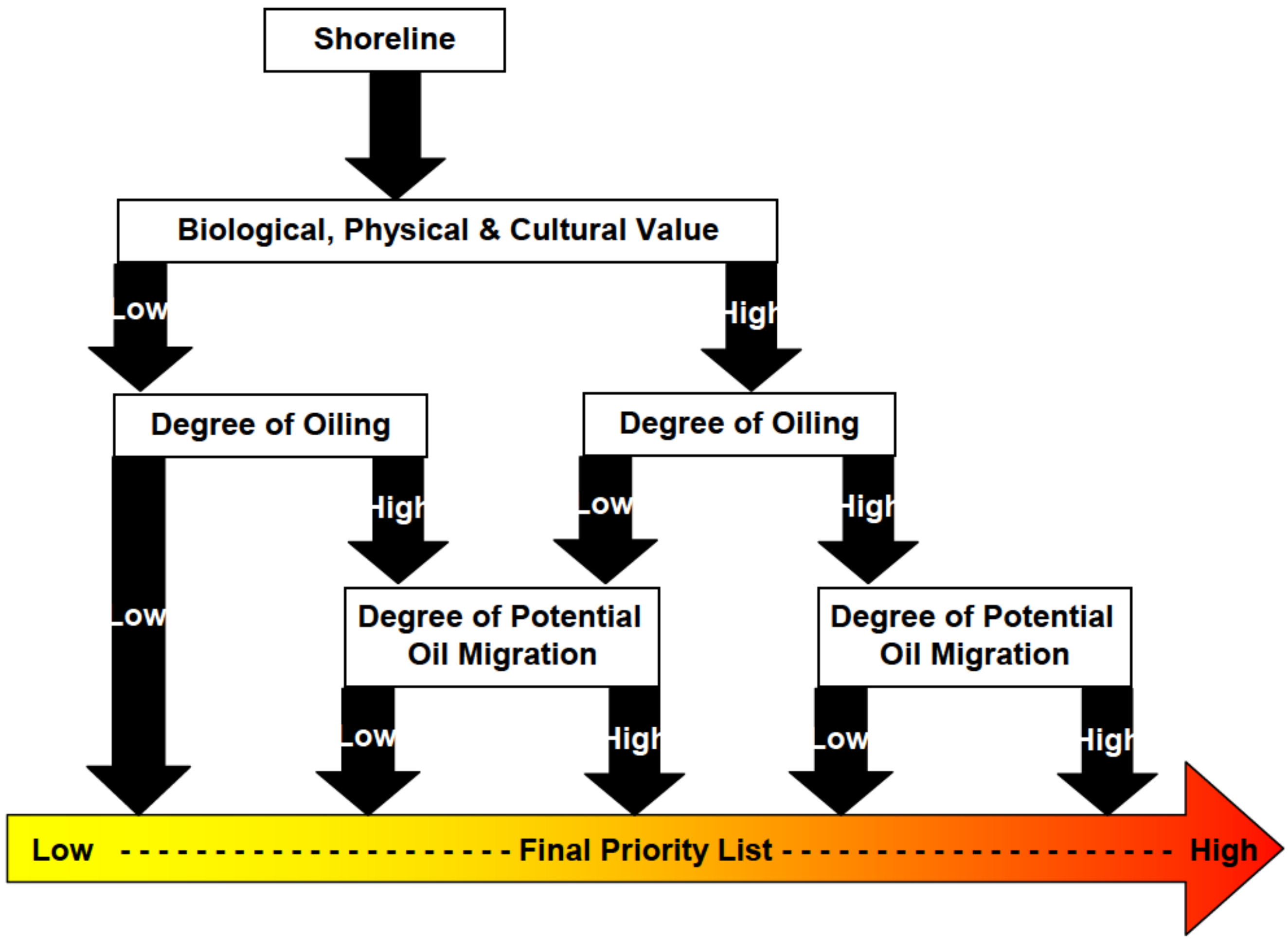
To the degree possible, all threatened resources will be protected. Where time or resources will not permit response to all situations (such as in major spills), efforts for maximum resource protection on a day-to-day basis in response to events as they unfold in the field will be taken.

In cases where resources have not yet been impacted, the setting of response priorities based on spill movement, identification of sensitive areas, and consideration of the feasibility of protective actions is relatively straightforward. When available response time permits, sensitive areas that can reasonably be protected should be treated in the order of relative sensitivity or vulnerability.

In cases where resources have already been impacted and continued oiling is anticipated, priority judgments become less clear. Generally, if a highly sensitive and/or vulnerable resource has been only lightly oiled, its normal response priority should be maintained. If such a resource has been heavily oiled and a resource of similar value is threatened, response priority should shift to the yet unoiled resource.

As a result of the infinite number of combinations of environmental conditions, no two spills will be identical. Each spill must be evaluated independently on the basis of incident- specific conditions.

FIGURE 6.2
PRIORITY SELECTION GUIDE



6.1.1 Inland and Coastal Waters

Protective actions include those efforts intended to prevent spilled oil from entering a receiving water body and efforts to minimize damage once such water bodies have been impacted. Selection of an appropriate protection technique for an inland or coastal area depends on the following factors:

- Type of water body (e.g., inland waters - lakes, rivers, etc.; coastal waters - bays, tidal channels, open water)
- Velocity of water currents
- Land form and water body configurations (e.g., straight coastline, harbor or bay entrance, etc.)
- Depth of the water
- Presence of breaking waves
- Amount of oil

Jordan River and Drainage Canal: Maps showing sensitive areas are presented on **FIGURES 6.3** through **6.13**.

6.2 Environmental Controls for Cleanup Activities

Environmental controls should be implemented when selecting and implementing oil spill containment and recovery techniques. To protect environmental resources from adverse impact from cleanup activities, the following guidelines should be used:

1. Cleanup activities on streams and banks of streams will be avoided, unless specifically approved by the appropriate government agencies.
2. Cleanup techniques that dislodge riparian vegetation and associated invertebrates will be avoided, unless specifically approved by government agencies.
3. Cleaning of marshes or vegetated shorelines will be avoided, unless specifically approved by government agencies.
4. Unaffected areas adjacent to shoreline cleanup areas will be boomed off to protect them from oiling during treatment operations.
5. Impact to lower emergent vegetation areas that are productive and not oiled will be minimized.
6. Sorbents will be employed below oiled upper beach faces to protect emergent vegetation from oiling.
7. All signs of human activity will be removed upon completion of cleanup.
8. All post-emergency response cleanup activities by Tesoro will be in accordance with those given in an approved Incident Action Plan. The

Shoreline Countermeasures Manual and Matrices, presented in the ACP, should be consulted in determining appropriate shoreline cleanup techniques.

6.3 Oiled Wildlife Rehabilitation

The rehabilitation of oiled wildlife is a complex and intensive process that includes the retrieval of affected animals, treatment for toxic effects of the oil, medical treatment, careful cleaning, specialized care and feeding, and preparation for release.

Tesoro recognizes that the rehabilitation of oiled waterbirds is a specialized activity and will call upon the services of the Tri-State Bird Rescue (302/ 737-9543) to carry out the established rehabilitation procedures.

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

SECTION 7 SUSTAINED RESPONSE ACTIONS

7.1 SPILL RESPONSE RESOURCES

The purpose of this section is to provide comprehensive and updated listings of the resources available for spill response operations. Implementation of the response strategies depends upon the availability of many types of services, equipment, and materials from industry cooperatives, private contractors, and local, state, and federal agencies, in addition to in-house resources. Tesoro is responsible for maintaining access to suitable equipment and sufficient manpower with requisite spill response knowledge and experience.

7.1.1 REFINERY RESOURCES

A listing of on-site equipment and materials for minor spills is provided in **TABLE 7.1**.

Tesoro will supply personal protective equipment (PPE) (i.e., respirator protection, chemical goggles/safety glasses, hard hats, impervious rubber gloves, rubber boots, Tyvek suits) for all Tesoro employees.

Tesoro-owned response equipment is inspected quarterly to ensure operational readiness. Expendable materials (e.g., sorbents) are replaced as they are used. **TABLE 7.2** is used as an inspection checklist where the status/condition or response equipment is verified and documented. Maintenance on equipment is performed in conjunction with the semiannual equipment deployment exercise as described in **APPENDIX A**. Because the information is voluminous and new dates are frequently added, records of response equipment testing and deployment exercises are maintained on file at the refinery as allowed by §112.20(h)(8)(iv).

TABLE 7.1
ON-SITE RESPONSE EQUIPMENT AND MATERIALS FOR MINOR SPILLS

At Refinery	
Item Description	**Quantity**
Absorbent socks	50 count
Absorbent pads	100 count
Overpack drums with absorbent pads and PPE for hydrocarbon	2 – 55 gal.
Brand name “Skim-Pak” series 4000 Skimmer Model (equipped with attachment to fit vacuum truck)	1
Hydrocarbon/acid hose (20 feet x 2 inches) with 2-inch cam lock couplings	4 sections

24ft Response Trailer					
Item Description	**Quantity**	**Item Description**	**Quantity**	**Item Description**	**Quantity**
Diesel 3" diaphragm pump	1	4"x6" containment boom	7 x 50'	plastic trash bag rolls	2
quart oil for pump	1	16"x18" sorbent pad bundles	6	maps and contacts list box	1
pump tool kit	1	5"x10' sorbent boom	4	Trauma Aid kit	1
5gal diesel fuel can	1	overpack drum	1	sunscreen	
25' suction hose 3"	3	oil absorbent sox	4	Bug Repellant Spray	2
20' suction hose 2.5"	1	fence T-posts	10	Bug kill spray	1
suction screen	1	20' rope lengths	10	Slicker Suits	Box
blue discharge hose	3	Hammers	2	gloves	4
Manta Ray skimmer head	1	rebar stakes	6	tyvek suits	8
2400 gal Fastank	1	yellow poly prop rope spool	1		
		Rescue rope throw bags	2	**STACKON TOOLBOX**	
Barricade Tape		life jackets	12	hammer	2
extension pole	1	Chest Waders	4pr	axe	1
survey twine	1			boom bridle w/ Carabineers	10
Hatchet	1	Generator	1	rigging plates	6
Saw	1	Ice Chest	1	carabineers	3
pulleys		bottled water			
Tarps				**RED TOOLBOX**	
spray nozzle for G.H.	1	2 5/16 hitch	1	hand saw	1
3 way electrical splitter	1	plug adapter	1	tape measure	1
orange safety cones	1	responder kit bags	2	misc wrenches, tools	
wipealls	2	Vulcan Flashlights	1	Pipe wrench	
extension cord in bucket	1	Duct tape	4	Hacksaw	
box o rags	1			Utility razor knife	
ground cable	1			tape measure	
Ratchet tie downs	4				
Flat Nose Shovels	2				
Round nose shovels	1				
Push Brooms	2				
Pick adze	1				

7.1.2 LOCAL AND REGIONAL RESOURCES

TABLE 7.1 provides a listing of the local and regional resources available in the event of an oil spill at the Salt Lake City Refinery. Tesoro, along with the oil spill cooperatives and contractors listed in this section, can supply the majority, if not all, of the equipment, supplies, support services, and manpower necessary for most cleanup operations.

Contractors will be responsible for ensuring that adequate resources, such as safety gear, first aid kits, portable restrooms and decontamination equipment are available for an oil spill.

7.1.3 CONTRACTOR EQUIPMENT & MANPOWER

The Company's primary response contractors and telephone numbers are provided in **SECTION 3**. 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. Evidence of Contracts and Contractor-owned equipment lists are located in **APPENDIX B**. Marine Spill Response Corporation maintains their equipment lists on their website at www.msrc.org.

TABLE 3.2 contains a list of additional contractors in the area who provide equipment and services which may be needed during a spill response operation.

Contractors' general roles and responsibilities are as follows:

- Providing booms, skimmers, temporary storage tanks, vacuum trucks, construction equipment, and other equipment necessary for containment and recovery of an oil spill.

- Providing trained personnel to operate the aforementioned equipment, and supervising response personnel.

- Interfacing with company Field Supervisors to implement tactical orders relating to the spill response.

- Providing appropriate safety equipment and ensuring personnel are operating according to the Company's safety guidelines and applicable federal, state, and local regulations.

- Providing transportation for necessary contractor personnel and equipment.

TABLE 7.2
RESPONSE EQUIPMENT INSPECTION CHECKLIST

Item Description	Quantity	Access Time	Testing Frequency	Latest Test Date	Shelf Life (Present Age/ Expected Replacement Date
At Refinery					
Absorbent socks	50 count				
Absorbent pads	100 count				
Overpack drums with absorbent pads and PPE for hydrocarbon	2 – 55 gal.				
Brand name “Skim-Pak” series 4000 Skimmer Model (equipped with attachment to fit vacuum truck)	1				
Hydrocarbon/acid hose (20 feet x 2 inches) with 2-inch cam lock couplings	4 sections				

Item Description	Quantity	Access Time	Testing Frequency	Latest Test Date	Shelf Life (Present Age/ Expected Replacement Date
24ft Response Trailer					
Diesel 3" diaphragm pump	1				
quart oil for pump	1				
pump tool kit	1				
5gal diesel fuel can	1				
25' suction hose 3"	3				
20' suction hose 2.5"	1				
suction screen	1				
blue discharge hose	3				
Manta Ray skimmer head	1				
2400 gal Fastank	1				
Barricade Tape					
extension pole	1				
survey twine	1				
Hatchet	1				

Item Description	Quantity	Access Time	Testing Frequency	Latest Test Date	Shelf Life (Present Age/ Expected Replacement Date
24ft Response Trailer					
Saw	1				
pulleys					
Tarps					
spray nozzle for G.H.	1				
3 way electrical splitter	1				
orange safety cones	1				
wipealls	2				
extension cord in bucket	1				
box o rags	1				
ground cable	1				
Ratchet tie downs	4				
Flat Nose Shovels	2				
Round nose shovels	1				
Push Brooms	2				
Pick adze	1				
4"x6" containment boom	7 x 50'				
16"x18" sorbent pad bundles	6				
5"x10' sorbent boom	4				
overpack drum	1				
oil absorbent sox	4				
fence T-posts	10				
20' rope lengths	10				
Hammers	2				
rebar stakes	6				
yellow poly prop rope spool	1				
Rescue rope throw bags	2				
life jackets	12				
Chest Waders	4pr				
Generator	1				
Ice Chest	1				
bottled water					
2 5/16 hitch	1				

Item Description	Quantity	Access Time	Testing Frequency	Latest Test Date	Shelf Life (Present Age/ Expected Replacement Date
24ft Response Trailer					
plug adapter	1				
responder kit bags	2				
Vulcan Flashlights	1				
Duct tape	4				
plastic trash bag rolls	2				
maps and contacts list box	1				
Trauma Aid kit	1				
sunscreen					
Bug Repellant Spray	2				
Bug kill spray	1				
Slicker Suits	Box				
gloves	4				
tyvek suits	8				
STACKON TOOLBOX					
hammer	2				
axe	1				
boom bridle w/ Carabineers	10				
rigging plates	6				
carabineers	3				
RED TOOLBOX					
hand saw	1				
tape measure	1				
misc wrenches, tools					
Pipe wrench					
Hacksaw					
Utility razor knife					
tape measure					

7.2 COMMUNICATIONS

This section describes the availability and assignment of communications equipment. Additional information is provided in the Salt Lake County Emergency Operations Plan.

7.2.1 INITIAL SPILL COMMUNICATIONS

This section describes a number of different communication systems or “tools” which may be employed in a given spill situation. Communication equipment (i.e., telephones, radios, etc.) will be assigned at the discretion of the Incident Commander and/or the Section Chiefs. Channel and frequency functions will be assigned, as needed, as the response evolves. Air traffic control will be maintained by the Federal Aviation Administration (FAA).

Telephone Circuits – The telephone system at the Tesoro Salt Lake City Refinery is sufficient to handle the volume of telephone calls associated with most spills. Additional temporary telephone lines may be required in the unlikely event of a major spill. Remote locations, however, may have very limited telephone service or no service at all. Or the reserve capacity of the system may be so small that temporary service to remote control centers cannot be quickly provided. Establishing microwave or satellite links to these areas using contractor resources may be required.

Cellular Telephone Systems – Cellular telephone service can provide spill response managers immediate access to the telephone system from remote locations. Battery-powered cellular telephones are preferred to free the user from dependence on commercial power or vehicle batteries. Key refinery personnel, emergency response responders, and most Tesoro Corporate response personnel, are equipped with cellular phones.

HF, VHF and UHF Channels in the Petroleum Radio Service – In response to a petition from the American Petroleum Institute (API), the Federal Communications Commission (FCC) in 1975 allocated a number of radio channels in the Petroleum Radio Service for primary use in oil spill containment and cleanup operations. Some of the Petroleum Radio Service VHF channels are near in frequency to the band assigned to the Marine VHF Radiotelephone Service (156.025 to 157.425 MHz), presenting the possibility that a single radio and antenna system can be used to access both services. Equipment with digital frequency control and scanning capability could be used to monitor radio traffic and communicate on several channels in both services.

Communications between responders and agencies is critical during a response. In a major incident, police, fire, state, federal, and private responders usually do not share radio frequencies and cannot communicate without using an established and activated emergency channel.

Statewide Emergency Response Radio Frequencies – Utah State radio communications are handled by the Utah Communications Agency Network (UCAN). Utah has moved off of the 155 MHz to the 800 MHz trunked radio system. In addition to UCAN, there are two amateur radio organizations providing operators in times of emergency: RACES and ARES.

7.2.2 TESORO COMMUNICATIONS EQUIPMENT

The refinery maintains hand-held radios which are used by the operators in carrying out refinery operations. These radios link refinery operators. The administration office has telephones and fax machines, and key refinery personnel carry hand-held cellular telephones when away from the refinery. These cellular telephones act as backups to the portable radio and are also available for notification purposes, should that be required.

Telephone Communications

Telephone communications are as follows:

Tesoro Salt Lake City Refinery	(801) 521-4900 (24 hours)
Tesoro Salt Lake City Refinery Fax	(801) 521-4965
Tesoro Salt Lake City Refinery Manager	(801) 521-4813
Tesoro Salt Lake City Refinery ERC	(801) 521-4887 or 550-1617

In the event of a spill, the Tesoro Incident Commander will immediately begin augmenting the response communication system as needed. For small to intermediate size spills, it is envisioned that the existing telephone lines, augmented by cellular telephones and the mobile radio units, should suffice. For a larger spill and a more sustained response, the Command Center may be relocated to the Best Western Plaza (801) 521-0130 where additional telephone lines are available.

Cellular Telephones

Tesoro uses cellular telephones as a backup system and for portable mobile units for communicating with personnel in the field. Cellular telephone numbers for Tesoro personnel are listed in **TABLE 3.1**.

Facsimile Units

The Salt Lake City Refinery has fax machines throughout the refinery. In the event of a spill of any size, additional fax machines may be provided. In addition, portable computers, with fax capability, are available from corporate response personnel and could be brought to the refinery in the event of a spill.

7.2.3 EMERGENCY ALERT SYSTEM – PUBLIC WARNING

The system in place for notifying the public of hazardous materials or oil incidents is the UCAN via State Radio Communications at 801-965-4948 (in state).

In a national emergency, the President can issue an Emergency Activation Notification (EAN), activating EAS and allowing him to speak to the entire nation. In the event of a statewide emergency, authorized state officials can access the public through the broadcast and cable industry throughout Utah. Authorized county and local officials can access their local broadcast and cable media to inform the public of a local emergency. In addition, other agencies, such as the National Weather Service (NWS), can also access that same local media.

Additional Hotline numbers and federal agency website addresses are presented in **TABLE 7.3.**

TABLE 7.3
HOTLINE NUMBERS AND FEDERAL AGENCY WEBSITE ADDRESSES

Listed below are the main website addresses for Federal agencies. These websites contain contact information for regional offices. If you do not have access to the Internet, visit your local library to get online. Local phone books will contain contact information for state offices.

To report a spill call the 24-hour National Response Center Hotline: 1-800-424-8802 www.nrc.uscg.mil/

Federal Emergency Management Agency: www.fema.gov

U.S. Environmental Protection Agency: http://www.epa.gov/emergencies/index.htm (EPA maintains the RCRA, Superfund & EPCRA Hotline to answer questions at 1-800-424-9346).

Agency for Toxic Substances and Disease Registry: www.atsdr.cdc.gov/

U.S. Department of Energy: www.doe.gov

Department of Agriculture: www.usda.gov

Department of Labor, Occupational Safety & Health Administration: www.osha.gov

U.S. Coast Guard (G-MER), Marine Safety and Environmental Protection: http://www.uscg.mil/hq/cg3/cg3pcx/missions/resources/msep-resources.asp

U.S. Dept. of Transportation, Pipeline and Hazardous Material Safety Administration Programs Administration, Office of Hazardous Materials Safety HazMat Info Line 1-800-467-4922 and website: http://www.phmsa.dot.gov/hazmat

Department of Justice, Environment and Natural Resources Division: http://www.justice.gov/enrd/

Department of the Interior: www.doi.gov

National Oceanic and Atmospheric Administration: www.noaa.gov

Department of State: www.state.gov

Department of Defense: http://www.defense.gov/

Nuclear Regulatory Commission: www.nrc.gov

7.3 WASTE MANAGEMENT

Oily waste recovery and disposal are critical to an effective oil spill response since shortages of storage areas can effectively shutdown recovery operations.

A spill from the Tesoro Salt Lake City Refinery could involve gasoline, jet fuel, or diesel fuel. Recovered oil would either be returned to tanks at the refinery or stored in bulk tank trucks, or portable tanks until the oil could be recycled. Utah has enforcement responsibilities under its state hazardous waste program but EPA maintains independent authority under RCRA.

Waste materials associated with a spill on land would include contaminated absorbent materials, personal protective equipment, and soil. For a spill on water, it is anticipated that oil and significant amounts of oily water would be recovered.

(b) (7)(F) [redacted] For planning purposes, Tesoro will have daily storage capacity equal to twice the effective daily recovery capacity. The calculated planning volumes and response resources are presented in **APPENDIX D.** The volume of contaminated sorbents, PPE, and other oiled solids may be significant with a spill of this magnitude. For planning purposes, the volume of oiled solid material is estimated at 10,000 cubic yards.

In addition to tankage at the Salt Lake City Refinery, Tesoro maintains additional interim storage capacity (for recovered liquids) available under contract in the local area as follows:

- Envirocare
- Baker Tanks
- Phillips Services Corporations

The following procedures shall be followed during an oil spill cleanup.

a) Report to the Tesoro Incident Commander.

b) Evaluate the volume of material to be handled.

c) Ensure that the material is stored properly.

d) Arrange to collect representative samples of oil and oiled waste materials to be characterized.

e) Deliver representative samples to a laboratory for characterization.

f) Make preliminary contacts with listed recyclers and waste disposal sites to determine their acceptance criteria and availability.

7.3.1 DISPOSAL PLAN

Tesoro's waste disposal plan is included as **SECTION 5**. The plan is designed to accelerate the waste disposal procedure during a spill response. Tesoro will work closely with the Department of Environmental Quality, Division of Solid and Hazardous Waste to develop a plan for the disposal of oily waste. Recovered oil and oily debris shall be recycled and reused to the extent feasible to reduce the amount of oily waste which must be incinerated or taken to a landfill. Contaminated debris will be disposed of at a facility that has been approved for use by Tesoro.

7.3.2 RECOVERY OF SPILLED OIL

Collection methods and activities are under the immediate control of the operations section chief. The waste management specialist is responsible for handling wastes and will be in constant communication with the operations section chief to understand the requirements.

As oil is recovered, it should be placed in sealable containers such as five-gallon cans with lids or caps, 55-gallon drums, portable tanks, tank trucks, or any other container that can be sealed to prevent spillage. At the Shift Supervisor's discretion, recovered product may be pumped back into sound tanks of compatible material at the terminal.

Oiled solid wastes should be placed in leak-proof containers to prevent leakage during handling and transportation. Double-walled plastic bags may be used for this purpose. For larger materials or those which could penetrate the bags, debris boxes or similar containers could be used as long as they are lined with plastic or by some other means to prevent leakage. Hazardous waste bins and lined dump truck beds may also be used for collection of oiled solid wastes.

7.3.3 INTERIM WASTE STORAGE

Interim or temporary waste storage of liquid and solid wastes collected during the recovery and cleanup operations is often required for proper waste classification, segregation, and packaging, in addition to making arrangements for recycling, treatment, or disposal. Small quantities of wastes can be stored in a variety of commercially available containers.

Interim storage of larger quantities of waste may require the construction of a temporary waste storage site. The sites should be located with good access to the cleanup operations and to nearby streets and highways. Flat areas, such as parking lots or undeveloped lots with a minimum slope to minimize runoff potential, are preferable. Interim storage should be sufficient to keep up with recovery operations and handle the entire volume of oil recovered and oily wastes generated.

Use of any site is dependent on the approval of the local health authority at the time of an incident. In some cases, sites can be predesignated to save time. For small spills which are located within close proximity to the Salt Lake City Refinery, small waste containers, and if needed, constructed storage beds will be located on refinery property with prior approval. Storage areas for large spills and those that migrate away from the refinery will be located at the staging areas or other mutually agreeable site with appropriate agencies and organizations.

Normally, location approval for interim storage can be accomplished by working in conjunction with the FOSC, SOSC, and local planning representatives within the Unified Command System. Should additional assistance be required, **TABLE 7.4** provides information for each relevant agency/ organization such as jurisdiction and telephone numbers. Primary contacts are the local health department and DEQ. The other listed agency/organizations may need to be contacted to address additional health, safety, and environmental concerns.

Some of the information which is pertinent in obtaining necessary permits/approvals includes proposed location, anticipated volume of liquid, type of product spilled, known health concerns, and results of analytical testing (if any).

TABLE 7.4
INTERIM STORAGE-PERMIT/APPROVAL GUIDE-LOCAL/STATE/FEDERAL

Agency	Area of Jurisdiction	Phone No.
Salt Lake City Fire Department	Local/County of Salt Lake City	(801) 799-4103
City Manager's Office	Local	(801) 963-3220
Local Health Department	Local – Salt Lake City County Public Health	(801) 313-6600
DEQ, Division of Solid & Hazardous Waste	State- Land	(801) 538-6170
EPA – Region 8	Federal/U.S. –Water & Land	(800) 227-8917

When considering a potential site, the following should be reviewed:

- Local geology
- Proximity to groundwater/surface water
- Availability of cover material (if any)
- Soil type
- Flooding potential
- Containment berm
- Land use
- Access
- Public contact
- Capacity
- Climate
- Toxic air emissions
- Security

Temporary storage sites should be designed to use the best achievable technology to protect the environment and human health. These sites should be set up in such a manner as to prevent leakage, contact, and subsequent absorption of oil by the soil.

7.3.5 WASTE CHARACTERIZATION

The primary objective of waste characterization is to ensure employee safety and proper waste handling and disposal in accordance with applicable state and federal guidelines. Response operations will generate oily liquid and solid/semi-solid wastes. Some of these materials may be regulated as hazardous wastes. A summary of the types of wastes and the associated response operations that generate the wastes and waste handling procedures are provided below. Additional information on handling wastes generated during an oil spill response can be found in the Waste Disposal Plan (**SECTION 5**).

Liquid Wastes

Oily liquid wastes (i.e., oily water and emulsions) that would be handled, stored, and disposed during response operations are very similar to those generated during routine facility operations. The largest volume of oily liquid wastes would be produced by recovery operations (e.g., through the use of skimmers). In addition, oily water and emulsions would be generated by boat and equipment cleaning operations, the storage area stormwater collection systems, and wildlife cleaning and rehabilitation operations.

Solid/Semi-Solid Wastes

Oily solid/semi-solid wastes which would be generated by containment and recovery operations include damaged or worn-out booms, uncleanable equipment, used sorbent materials, saturated soils, contaminated beach sediments, driftwood, and other debris. In addition, wildlife capture, cleaning, and rehabilitation operations would produce oil-soaked towels and newspapers.

Hazardous Wastes

The EPA definition of hazardous wastes is defined in 40 CFR 261. State definitions are defined in Utah Statutes, §116.06, Subdivision 11.

Per RCRA: Hazardous Waste Rules, a material is defined as hazardous for one of two reasons:

1. It could be one of the substances listed in 40 CFR 261, Subpart D; or
2. It could exhibit one of the four following characteristics:
   - Ignitable
   - Reactive
   - Corrosive
   - Toxic

All oily waste materials generated from a spill at the Salt Lake City Refinery should be characterized as dangerous until indicated otherwise by a state-accredited laboratory. Each waste must be characterized on a case-by-case basis through laboratory analysis of representative samples.

Segregation of Waste Types

The various types of wastes generated during response operations would require different disposal methods. To facilitate the disposal of wastes, all waste materials would be segregated by type for temporary storage and/or transport. **TABLE 7.5** lists several options that are available to segregate oily wastes into liquid and solid components and depicts methods that may be employed to separate free and/or emulsified water from the oily liquid waste.

7.3.6 TRANSPORTATION

Waste materials recovered from the water should be loaded at a location which provides convenient access, such as a boat ramp. Recovered waste materials from land should be loaded at designated transfer locations.

Carriers should be arranged to transport waste. Drums can be used for loading materials that are flammable (flashpoint less than 100°F). United States Department of Transportation (DOT) specification 17E or 17H drums can be used for liquids having a flashpoint between 20°F and 73°F, and a vapor pressure less than 18 psi absolute, at 100°F (49 CFR 119(1)). For loading solid materials that have a flashpoint from 100°F to 200°F, rolloff bins can be used. Vacuum trucks can be used for loading liquid waste materials.

Waste materials should always be covered during transportation. All truck rolloff bins shall be lined with precut plastic sheets before loading to prevent oil from leaking onto the streets. Tarpaulin covers must be used to minimize blowing or spilling of loads. New liners shall be used for each load.

The Tesoro Waste Management Specialist will ensure that waste is transported under proper permits and labels/placards for transportation per Hazardous Waste Manifest and Transport guidelines.

7.3.7 HANDLING

Spilled free oil and waste materials recovered from land and water require responsible handling. Handling can pose initial and long-range problems including the storage and transportation of the material to a disposal or processing site, as well as the proper recycling, treatment, and disposal methods. Legal requirements for waste handling are established by the EPA and DEQ.

A primary concern in handling recovered oil and oil solid wastes is to prevent oiling of previously unaffected areas or re-oiling of areas already cleaned. This can be accomplished by using correct handling techniques. All workers associated with the handling portion of waste should be briefed with respect to incident-specific Health and Safety Plan by the waste management specialist.

TABLE 7.5
OILY WASTE SEGREGATION

Type of Material	Segregation Methods
Liquids	
Non-emulsified oils	• Treatment at Salt Lake City Refinery, or equivalent. • Gravity separation of free water.
Emulsified oils	• Treatment at Salt Lake City Refinery. • Emulsion broken to release water by: - heat treatment - emulsion breaking chemicals - mixing with sand - centrifuge - filter/belt press
Solids	
Oil mixed with sand	• Collection of liquid oil leaching from sand during temporary storage. • Extraction of oil from sand by washing with water or solvent. • Removal of solid oils by sieving.
Oil mixed with cobbles, pebbles, or shingle	• Screening. • Collection of liquid oil leaching from beach material during temporary storage. • Extraction of oil from beach material by washing with water or solvent.
Oil mixed with wood, plastics, seaweed, and sorbents	• Screening. • Collection of liquid oil leaching from debris during temporary storage. • Flushing of oil from debris with water.
Tar balls	• Separation from sand by sieving.

Disposal of waste must be minimized. This is accomplished by proper identification, waste segregation, recycling, and treatment. Only the residue from these steps must be disposed of by an approved method.

7.3.8 WASTE DISPOSAL

A number of alternatives are available for waste disposal. Recycling, treatment, or incineration of spill-generated wastes are generally preferable to landfilling, where appropriate. In the selection of one or more disposal options, consideration must be given to stipulations set by environmental regulations as well as a clear understanding that if permanent disposal sites (i.e., landfills and treatment/stabilization locations) are utilized, they must have sufficient capacities to handle waste volumes generated. Landfills are listed in **TABLE 7.6**. The locations of hazardous waste incinerators are presented in **TABLE 7.7**.

TABLE 7.6
UTAH WASTE LANDFILLS

Facility	Location	Phone Number
Salt Lake Valley Salt Lake Valley Solid Waste Mgt.	6030 West California Avenue Salt Lake City, UT 84104	(801) 974-6920
Trans-Jordan Trans-Jordan Cities	P.O. Box 95610 South Jordan, UT 84095	(801) 569-8994
Kennecott/Tailings Impoundment Kennecott Utah Cooper Corporation	P.O. Box 6001 Magna, UT 84044	(801) 252-3257
Kennecott/Used tire Monofil Kennecott Utah Cooper Corporation	P.O. Box 6001 Magna, UT 84044	(801) 252-3257
Kennecott/Smelter Refuse Kennecott Utah Cooper Corporation	P.O. Box 6001 Magna, UT 84044	(801) 252-3257
Waste Management of Utah/Mountain View Mountainview Landfill, Inc.	6976 West California Ave. Salt Lake City, UT 84104	(801) 250-0555
Waste Control Management	P.O. Box 1220, Dept. 203 Solvang, CA 93463	(805) 740-1269
South Valley Monofill South Valley Water Reclamation Facility Admin Board	7495 West 1300 South West Jordan, UT 84084	(801) 566-7711
ECDC Environmental L.C. Class V Landfill Permit	1111 West Highway 123 PO Box 69 East Carbon, UT 84523	(435) 888-4418 Ext 22

TABLE 7.7
HAZARDOUS WASTE INCINERATORS

State	City
Arkansas	El Dorado
Illinois	Chicago Savget
Kansas	Coffeyville
Kentucky	Calvert City
Louisiana	Baton Rouge
New Jersey	Bridgeport
Ohio	Grafton
South Carolina	Rock Hill Roebuck
Texas	Deer Park Houston Port Arthur
Wisconsin	Eau Claire

In accordance with Chapter 70.105.150 of the Oil and Hazardous Substance Spill Prevention and Response Act, management and disposal of hazardous/dangerous wastes should be prioritized as follows:

Waste Reduction

Recycling

Physical, Chemical and Biological Treatment

Incineration

Solidification/Stabilization Treatment

Landfill

Recycling

Recycling is the preferred method of handling recovered oil. The relative salvageability of the recovered oil should be determined by the Waste Management Specialist.

Oil recovered from aquatic areas will typically contain substantial amounts of water, oil, and debris. A tank or vacuum truck can be used as an effective oil water separator by allowing the oil/water mixture to stand long enough for the oil and water to separate. The water is then drained off the bottom through the valved pipe, and the oil is pumped into a storage tank or truck. Any water drained off by separation techniques should be discharged into an aboveground tank, or effluent treatment system, as it may still contain minor amounts of oil. The Tesoro Environmental Unit Leader can assist with proper handling of the separated water.

Material reclaimed from the spill which can be recycled to yield a significant amount of oil and that oil returned to process, can be returned to the Salt Lake City refinery. This recycling activity may be exempt from hazardous waste transport regulations, depending on the characterization of the material.

Treatment

Federal and state land disposal restrictions prohibit the land disposal of hazardous waste without prior treatment to strict standards. These standards vary depending upon whether the waste is classified as RCRA or state hazardous waste, and whether the waste is a listed or characteristic hazardous waste. A listing of petroleum contaminated soil treatment centers is presented in **TABLE 7.8**. Contact the Tesoro Environmental Unit Leader for applicable requirements.

Disposal

Non-recyclable waste or treatment residue may need to be disposed of at a licensed Class I landfill. Provisions should be made in advance to factor the landfill's acceptance requirements into any proposed disposal activities. Since the cost for sending non-recyclable oily waste to a landfill is significant, the amount of waste to be disposed of should be minimized to the maximum extent possible given the economic and technical constraints.

Other alternatives such as bioremediation and energy recovery (some recovered oil may be burned through boiler or heating systems) are also encouraged.

TABLE 7.8
EXISTING/PROPOSED PETROLEUM CONTAMINATED SOIL TREATMENT CENTERS

Facility	Location	Contact Person	Phone
New Prague	Derrnane	James Waler	612-873-6811
Cottonwood	Stanley	Raymond Louwagie	507-532-2989
Cottonwood	Stanley	Mark Vendelanotte	507-423-5372
Cottonwood		Brad Matthys	507-762-3337
Tyler	Fairview	Robert Blomme	507-532-7324
Glencoe	Glencoe	Eugene Phillips	320-864-3690
Glencoe	Glencoe	Leonard Kraemer	320-864-3997
Ortonville	Otrey	Kathleen Oakes	320-273-2205
Hutchinson	Collins	Peter Kalenberg	320-562-2618
Lakefield	Hunter	Clair Gilmore	507-847-4120
Blue Earth	Blue Earth City	City of Blue Earth	507-526-7336
Kelliher	Cormorant	Raymond Gilge	218-647-8727
St. James	Rosendale	Wayne Harbitz	507-375-3808
Marshall	Fairview	Gary Deutz	507-532-6777
Stewart	Collings	Jim Friedrichs	320-562-2401
Sleepy Eye	Bashaw	Mathiowetz Construction	507-794-6953

Utah State Rules for Hazardous Waste can be accessed at www.pca.state.mn.us/waste/, Chapter 7045, through the DEQ.

Utah Statutes can be accessed at www.revisor.leg.state.mn.us.

7.4 IN SITU BURNING AND DISPERSANT APPLICATION

The Tesoro Spill Management Team is not trained in the use of dispersants and burning techniques for spill response. Tesoro would call upon MSRC in the event these alternative response technologies would be utilized. While the use of dispersants is gaining recognition as a viable response technology in the U.S., nonpersistent oils, such as those handled at the Salt Lake City Refinery, are rarely considered good dispersant candidates due to their high aquatic toxicity.

7.5 PUBLIC AFFAIRS

Properly handling media relations is an important facet of Company operation at all times. During normal operations, this function will be handled by the Manager, Human Resources. During emergency situations, media relations become more complex and a number of other personnel become involved. The Company will utilize the Joint Information Center (JIC) Manual as a guideline to media relations.

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SECTION 8 DEMOBILIZATION/POST INCIDENT REVIEW

8.1 DEMOBILIZATION

The Company can reduce response costs considerably by developing demobilization plans. Therefore, emphasis must be placed on establishing efficient demobilization procedures. A demobilization checklist and plan is contained in **FIGURE 8.1**.

8.2 DECONTAMINATION

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

Decontamination facilities should be positioned prior to employee/contractor entrance to areas where potential for exposure to contamination exists. A separate emergency decontamination area should be established to allow for decontamination of personnel requiring life saving medical attention. The appropriate Material Safety Data Sheets (MSDS) should be stored in this area at all times to aid health professionals treating the injured parties.

Decontamination facilities should be designed to prevent further contamination of the environment and should have a temporary storage area for items that will be reused in the contaminated area.

Particular attention should be paid to personal hygiene prior to eating, drinking, or smoking.

One or more decontamination areas would be set up during response operations. These areas are to be used only for decontamination at the work site; they are not to be used as a substitute for personal hygiene at home.

Decontamination areas are designed to protect the worker's health and to prevent the spread of contamination into "clean" areas. IN the field, it is not possible for a worker to remove all contaminated clothes each time he/she takes a break from work. It is essential, however, that a worker clean hands and face to avoid ingesting oil or spreading oil to otherwise protected body parts. In the field, a worker will be provided with:

- Soap, water, paper towels, waterless hand cleaner, and/or other materials for washing his/her hands and face.
- An impermeable surface to sit on.
- Refuse containers.
- An eyewash station.

At the end of a daily shift, the worker will be required to go through full decontamination. Normally, the worker will report to a “dirty” zone where he/she will remove all soiled protective clothing. The worker should do this carefully to avoid contaminating clean clothing. Next, the worker will move to the “transition” zone where he/she will remove his/her work clothes and clean himself/herself to remove all traces of oil. Finally, the worker will proceed to the “clean” zone to put on clean clothing and leave for home. If work clothes are contaminated, they should be left at the site for cleaning. If they cannot be properly cleaned; they will be disposed of. Therefore, it is important that the worker bring an extra set of clean work clothes to the site. The worker should not wear clothes that will be missed if they cannot be cleaned.

FIGURE 8.1
DEMOBILIZATION PLAN

Incident Name: ____________________ **Plan Location:** ____________________

Effective Date of Plan: ____________________ **Effective Time Period of Plan:** ____________________

Spill Location: ____________________ **Plan Prepared By:** ____________________

Demobilization Procedures:

1. 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.

2. Each collection site 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.

3. The Planning Section will document all demobilization and decontamination activities.

4. Equipment designated for re-assignment will be mobilized to the appropriate staging area.

5. The Operations Section Chief will maintain a log documenting that proper decontamination procedures for performed for each piece of equipment.

6. The Operations Section Chief will ensure that redeployed personnel receive proper rest prior to return to duty. The Planning Section Chief will monitor personnel redeployment activities to ensure number of hours worked is within acceptable guidelines.

7. The Operations Section Chief must approve demobilization plans prior to decontamination, release, or redeployment of any resources.

8.3 POST INCIDENT CRITIQUE

A Post Incident Critique (PIC) is designed to evaluate Company emergency response actions, not the cause of the incident. A post-spill review is also designed to identify potential deficiencies in the Plan and determine the changes required to correct the deficiencies. The post-spill review is also intended to identify which response procedures, equipment, and techniques were effective and which were not and the reason(s) why. Response plans can then be revised to eliminate or modify those response procedures that are less effective and emphasize those that are highly effective. This process should also be used to evaluate exercises.

8.3.1 OUTLINE OF POST SPILL CRITIQUE

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

Detection

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

Notification

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

Assessment/Evaluation

- Was the magnitude of the problem assessed correctly at the start?
- What means were used for this assessment?
- Are any guides or aids needed to assist spill evaluation?
- What sources of wind and water currents information were available?

- Is our information adequate?
- Was this information useful (and used) for spill trajectory forecasts? Were such forecasts realistic?
- Was adequate information available on oil properties?
- Was additional information needed on changes of oil properties with time, i.e., as a result of weathering and other processes?

Mobilization

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

Response – strategy

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

Response – resources used

- What resources were mobilized?
- How were they mobilized?
- How did resource utilization change with time? Why?
- Were resources used effectively?
  - Contractors
  - Government Agencies
  - Company resources
  - Cooperatives
  - Volunteers

  - Consultants
  - Other (e.g. bird rescue centers)
- What changes would have been useful?
- Do we have adequate knowledge of resource availability?

Response – effectiveness

- Was containment effective and prompt?
- How could it have been improved?
- Should the location or the local cooperative have additional resources for containment?
- Was recovery effective and prompt?
- How could it have been improved?
- Should the location or the local cooperative have additional resources for recovery of spilled oil?

Command Structure

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

Measurement

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

Government Relations

- What are the roles and effects of the various government agencies that were involved?

- Was there a single focal point among the government agencies for contact?
- Should there have been better focus of communications to the agencies?
- Were government agencies adequately informed at all stages?
- Were too many agencies involved?
- Are any changes needed in procedures to manage government relations?
- Examples of affected U.S. agencies (there may be others):
  - U.S. Coast Guard
  - U.S. Environmental Protection Agency
  - National Oceanographic Atmospheric Administration
  - Department of Fish and Wildlife
  - State Parks
  - Harbors and Marinas
  - States
  - Cities
  - Counties
- Was there an adequate agreement with the government agencies on criteria for cleanup?
- How was this agreement developed?
- Were we too agreeable with the agencies in accepting their requests for specific action items (e.g. degree of cleanup)?
- Should there be advance planning of criteria for cleanup, aimed at specific local environmentally sensitive areas? (Such criteria should probably also be designed for different types of oils).

Public Relations

- How were relations with the media handled?
- What problems were encountered?
- Are improvements needed?
- How could public outcry have been reduced? Was it serious?
- Would it be useful to undertake a public information effort to “educate” reporters about oil and its effects if spilled?

These areas should be investigated shortly after the incident to assure that actions taken are fresh in peoples’ minds.

8.3.2 FINAL SPILL CLEANUP REPORT

A final, comprehensive report for internal use should be prepared by the Incident Commander or his designee after completion of spill cleanup activities. The report should be written in narrative form and should include information listed below, as appropriate:

1. Time, location, and date of discharge.
2. Type of material discharged.
3. Quantity discharged (indicate volume, color, length and width of slick, and rate of release if continuous).
4. Source of spill (tank, flowline, etc.) in which the oil was originally contained, and discharge path.
5. Detailed description of what caused the discharge and actions taken to control or stop the discharge.
6. Description of damage to the environment.
7. Steps taken to clean up the spilled oil, and dates and times steps were taken.
8. The equipment used to remove the spilled oil, dates, and number of hours equipment was used.
9. 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.
10. Actions by the Company or contractors to mitigate damage to the environment.
11. Measures taken by the Company or contractors to prevent future spills.
12. 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.
13. Description of the effectiveness of equipment and cleanup techniques and recommendations for improvement.
14. The names, addresses, and titles of people who played a major response role.

15. A section identifying problems and deficiencies noted during the response. A follow-up section should include recommendations for more effective and efficient response procedures.

16. All other relative information.

17. A final signature as follows:

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

Name: __________________________________

Title: __________________________________

Signature: __________________________________

Date: __________________________________

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APPENDIX A TRAINING AND DRILLS

A.1 TRAINING

The Refinery ERC and members of the Immediate Response Team (IRT) will be trained to the following level:

- 24-Hour Hazwopper
- Incident Command System (ICS)
- Qualified Individual
- Oil Spill Response

The Training Supervisor prepares and conducts a spill prevention training session in conjunction with safety meetings. At minimum, the Refinery Manager and IRT members will receive training adequate to satisfy HAZWOPER Level 3 (24-hour) requirements. This will include:

- Hazard Communication
- Site Security and Control
- Emergency Response Plan and Equipment
- Personal Protection Equipment
- Decontamination Procedures
- Standard Operating Procedures and Safe Work Practices

Refinery employees may also participate in spill response training or drill programs conducted by local response contractors or other oil refinery/pipeline operators. Training records are on file at the Refinery and available for EPA inspection.
Primary response contractors (and their subcontractors) will be trained to OSHA "HAZWOPER" (29 CFR Part 1910.120) spill response standards.

At least annually, all refinery ICS Incident Management Team (IMT) members receive refresher training prior to the annual tabletop exercise. Training subject matter for the IMT varies from year-to-year depending on

1. The observations noted from the annual tabletop exercise;
2. The number of new members that have been added to the team ; OR
3. Current members who have been reassigned to a different ICS role.

A.1.1 TESORO INCIDENT COMMAND TRAINING

All members of the Tesoro Incident Command and Spill Management Team designated as commanders, officers, section chiefs, or supervisors who initially respond to an oil spill will have received a minimum of 16 hours of IC instruction through formal classroom settings, table top oil spill drills, or deployment response drills. Most members of the Tesoro Incident Command Team below the level of chiefs or supervisors will have received a minimum of 8 hours of similar IC instruction. A few of the members below the level of chiefs or supervisors will not receive formal IC training, but will become part of the team due to their personal experience or routine job activities within Tesoro.

A.1.2 TESORO OIL SPILL RESPONSE FIELD SUPERVISORS

Tesoro has established a spill response team that has been specifically trained to work with contractor personnel for Tesoro during oil spill responses. Field Supervisors may respond to contain, control, or cleanup a spill, or to supervise other Tesoro, oil industry, or contract personnel in all phases of oil spill response activities.
At a minimum, Field Supervisors will receive the following training, or have the equivalent of such training through work experience:

- 40-Hour HAZWOPER Class
- 8-Hour HAZWOPER Supervisor's Class
- 8-Hour Annual HAZWOPER Refresher Update
- 8-Hour ICS Training
- On-Water and Land General Oil Spill Response
- Full Equipment Deployment, On-Water Response Drills

The Field Supervisors will also receive a minimum of 8 hours of refresher spill response training on an annual basis.

A.1.3 CONTINGENCY PLAN REVIEW

The Refinery ERC will review this OSCP with the Refinery Operators annually, use the OSCP during spill response drills, and practice policies which are described in this OSCP to assure that all personnel are familiar with the OSCP. This process is in place to assure that staff personnel are sufficiently familiar with the OSCP so that it can be used as an effective spill response tool.

A.2 DRILLS AND EXERCISES

The *National Preparedness for Response Exercise Program (NPREP) Guidelines* will be followed to assure that Tesoro personnel are sufficiently trained for oil spill response. The Tesoro Incident Command and Immediate Response Team and Spill Management Team will receive training through participation in quarterly QI telephone drills, annual spill management team tabletop exercises, unannounced drills, and annual deployment exercises scheduled to meet NPREP guidelines. Refinery Operators will receive spill response training through annual refinery equipment deployment and associated tabletop exercises.

The Refinery ERC is responsible for ensuring that drills are completed and documented as required. Drills for the Tesoro Salt Lake City Refinery include the following:

A.2.1 QUARTERLY NOTIFICATION EXERCISE

The purpose of the quarterly notification exercise is to ensure that the Primary or Alternate Qualified Individual (or designee, as designated in the OSCP) and response contractors are able to be reached in a spill response emergency to carry out their required duties. Contact by telephone, radio, message - pager, or facsimile must be made with the key individuals listed in **SECTION 3** of the OSCP, and confirmation must be received to satisfy the requirements of this exercise. Pagers and refinery alarms are tested weekly.

The quarterly notification exercise will be initiated by a qualified Refinery Operator at the direction of the Refinery ERC. The exercise will be documented and kept on file with the Refinery ERC.. Federal and state agencies do not need to be included in the quarterly notification exercise.

At least once a year, the quarterly notification exercise should be conducted during non-business hours.

A.2.2 ANNUAL SPILL MANAGEMENT TEAM TABLETOP EXERCISE

SECTION 4 of the OSCP identifies the incident management team. This spill management team will conduct an annual tabletop exercise, in accordance with the guidance document. The OSCP must be utilized in the exercise to ensure the spill management team is familiar with the plan and is able to use it effectively to conduct a spill response. At least one spill management team tabletop exercise in a triennial cycle will involve a worst case discharge scenario.

The spill management team tabletop exercises should take into account shift changes to ensure that all personnel serving as part of the spill management team during an actual spill have participated in an exercise.

A.2.3 SEMIANNUAL EQUIPMENT DEPLOYMENT EXERCISE

At least twice each year, facility personnel will participate in an exercise to deploy the containment boom maintained by the Refinery. The amount of boom deployed should be sufficient to respond to the “small” spill described in **APPENDIX D**. When planning for the location of the deployment exercise, consideration should be given to access for personnel and recovery equipment. Locations and time of year for the exercise should vary in order familiarize personnel with regional access and changing seasonal conditions.

A.2.4 TRIENNIAL CYCLE

Every 3 years all core components of the entire response plan must be exercised. Rather than requiring each plan holder to conduct a major exercise every 3 years, the individual components can be exercised in portions through the required exercises.

The following are the basic types of core components that must be exercised at least once every 3 years:

Organizational Design

1. Notifications;
2. Staff Mobilization; and
3. Ability to Operate within the response management system described in the plan.

Operational Response

4. Discharge control;
5. Assessment of discharge;
6. Containment of discharge;
7. Recovery of spilled material;
8. Protection of sensitive areas; and
9. Disposal of recovered material and contaminated debris.

Response Support

10. Communications;
11. Transportation;
12. Personnel support;
13. Equipment maintenance and support;
14. Procurement; and
15. Documentation.

Tesoro will evaluate the components that are applicable from the list above, and add or delete other components as appropriate. Tesoro will endeavor to exercise all components of the plan within each 3-year exercise cycle. The required exercises should be developed to ensure that each component is addressed and exercised in the triennial cycle. Tesoro is responsible for documenting the components completed in the exercise.

In the triennial cycle, the following exercises must be conducted:

- 12 Qualified Individual notification exercises;
- 3 spill management team tabletop exercises - one must involve a worst case discharge scenario;
- 3 unannounced exercises - any of the exercises, with the exception of the Qualified Individual notification exercise, if conducted unannounced, would satisfy this requirement; and
- 6 equipment deployment exercises.

A.2.5 EXERCISE RECORDS

Forms for the documentation of spill management team tabletop drills and equipment deployment drills will be used for documentation drills.

Tesoro will ensure that records, sufficient to document the exercises for facility personnel and the spill management team, are maintained for a minimum of five years following the completion of each exercise. Proper documentation for self-certification should include, at a minimum, the following information:

- The type of exercise.
- Date and time of the exercise.
- A description of the exercise.
- The objectives (i.e., core components) met by the exercise.
- Lessons Learned.

The documentation must be in writing and signed by a Qualified Individual. Records of exercises will be maintained on file at the refinery and made available to the EPA.

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APPENDIX B CONTRACTOR RESPONSE EQUIPMENT

The Tesoro Salt Lake City Refinery's response contractors are presented in **TABLE B.1.** Copies of the agreements between Tesoro and contractors are provided following this section.

Contractors are responsible for the maintenance of their equipment, training personnel and conducting drills in accordance with applicable regulations. OSRO certificates are provided at the end of this section.

TABLE B.1
CONTRACTOR RESPONSE TIMES AND CAPABILITIES

Contractor	Response Time (hrs) Salt Lake City	Boom (ft)	Recovery bbls/day	Storage bbls
Envirocare	1	6,500	3,240	595
Philips Services	1		980	980
MSRC*	12	5,000	2,500	
Facility Owned Equipment	1	350	4,520	87,154

*MSRC resources will be provided from various locations to meet Tier 2 & 3 requirements as necessary (see attached letter). MSRC personnel may also be mobilized to operate equipment. MSRC assets will be mobilized by air or ground transportation as necessary to meet Tier 1 to Tier 3 requirements.

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FIGURE B.1
EVIDENCE OF CONTRACTS

STRACT NO. 60010242

MASTER SERVICE AGREEMENT

THIS MASTER SERVICE AGREEMENT ("Agreement") is made and entered into this 26 day of June, 2002, by and between TESORO REFINING AND MARKETING COMPANY, a Delaware corporation, whose address is 474 WEST 900 NORTH; SALT LAKE CITY, UT 84103 (hereinafter "COMPANY") and PHILIP SERVICE CORPORATION, whose address is 2525 South 1100 West; Woods Cross, UT 84087 (hereinafter "CONTRACTOR"). CONTRACTOR and COMPANY are each a "Party" and collectively are "Parties" to this Agreement.

WHEREAS, COMPANY may from time to time, through its duly authorized representatives, request that CONTRACTOR perform certain work and provide certain materials, supplies, equipment, facilities or services (collectively, hereinafter "Work") to COMPANY in the conduct of its operations;

WHEREAS, by entering into this Agreement, COMPANY and CONTRACTOR desire to establish certain general terms and conditions which shall apply to, govern and control, all Work performed by CONTRACTOR for COMPANY.

NOW, THEREFORE, in consideration of the premises and the mutual promises contained herein, the Parties agree as follows:

1. NATURE OF AGREEMENT

This Agreement is a master agreement to establish the terms generally applicable to all Work to be performed by CONTRACTOR for COMPANY. This Agreement does not obligate COMPANY to contract with CONTRACTOR, nor does it obligate CONTRACTOR to contract with COMPANY with respect to any particular Work. This Agreement, together with any appropriate Purchase Order and any exhibits, supplements, and attachments to this Agreement or a Purchase Order, which are incorporated herein or therein by reference, shall govern and control the performance of all Work actually performed by CONTRACTOR for COMPANY and define the rights, liabilities, and obligations of COMPANY and CONTRACTOR for the performance of any such Work during the term hereof.

2. TERM OF AGREEMENT

This Agreement shall become effective on the date above written or on such date when CONTRACTOR first commenced any Work for COMPANY, whichever first occurred, and even though this Agreement may not then have been reduced to writing. This Agreement shall remain in force and effect until canceled by either Party by giving the other Party ten (10) days notice in writing as set forth in Article 23 of this Agreement. If ongoing Work should extend past ten (10) days after such notice is given, then cancellation shall not be effective until the ongoing Work and the transition thereof is completed or made secure to the satisfaction of COMPANY. Upon notice of such termination, CONTRACTOR shall comply with COMPANY's reasonable directions, and upon request shall promptly remove its personnel, machinery, and equipment from COMPANY'S premises and shall further cooperate with COMPANY or its designee to ensure a safe, orderly and expeditious transition and/or completion of the Work. Upon receipt of notice of termination, unless otherwise permitted by Article 25, CONTRACTOR shall deliver to COMPANY all data, documents, drawings, reports, estimates, summaries and other information and materials relating to the Work made available or accumulated by CONTRACTOR in the performance of this Agreement. The foregoing shall in no way limit COMPANY'S right to terminate CONTRACTOR immediately in the event of

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be a part hereof and incorporated herein, to the same extent as if such provisions were fully set forth in the body of this Agreement. These supplemental provisions shall be harmonized and construed in conjunction with the provisions in the body of this Agreement to the maximum extent possible, but in the event of any irreconcilable conflict between two inconsistent provisions, the specific provisions in the Addendum shall prevail over any conflicting provisions elsewhere, the conflicting provisions of Exhibit "E" shall prevail over any conflicting provisions in Exhibits "D" or "F" or the body of this Agreement, and the specific provisions in Exhibit "F" shall prevail over any conflicting provisions in Exhibit "D" and in the body of this Agreement.

THIS AGREEMENT is executed as of the date above written.

COMPANY:	CONTRACTOR:
By:	By:
Title: President, Mountain Region	Title: General Manager

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Revised 9/10/01

14

April 28, 2003

Tesoro Petroleum
474 West 900 North
Salt Lake City, UT 84103

Re:OSRO

Dear Mr. Leonard:

This letter is provided as certification that PSC Industrial Outstourcing, Inc. meets the applicable Oil Spill Removal Organization (OSRO) equipment deployment, inspection, and maintenance requirements under the Oil Pollution Act of 1990 (OPA 90). Documentation of equipment deployment drills, inspections, and maintenance activities is maintained by PSC Industrial Outsourcing, Inc., and is available upon request.

Please contact Michael Leonelli if you need any information regarding PSC Industrial Outsourcing's oil spill response capabilities.

Sincerely,

Michael Leonelli
General Manager
PSCIndustrial Outsourcing, Inc.

MARINE SPILL RESPONSE CORPORATION
SERVICE AGREEMENT

EXECUTION INSTRUMENT

The **MSRC SERVICE AGREEMENT** attached hereto (together with this execution instrument, the "Agreement"), a standard form of agreement amended and restated as of September 27, 1996, is hereby entered into by and between

Tesoro Petroleum Corporation
[Name of COMPANY]

a Delaware Corporation
[Type of entity and place of organization]

with its principal offices located at 8700 Tesoro Drive, San Antonio, Texas 78217

(the "**COMPANY**"), and **MARINE SPILL RESPONSE CORPORATION**, a nonprofit corporation organized under the laws of Tennessee ("MSRC"), and shall be identified as

SERVICE AGREEMENT No. UMPA 070 [This is to be provided by MSRC.]

IN WITNESS WHEREOF, the parties hereto each have caused this Agreement to be duly executed and effective as of June 3, 1998.

Tesoro Petroleum Corporation [COMPANY]

By: [signature]

James C. Reed, Jr. [print name]

Title: Executive Vice President,
General Counsel and Secretary

Address: 8700 Tesoro Drive
San Antonio, Texas 78217

Telephone: 210-828-8484 Fax: 210-283-2400

MARINE SPILL RESPONSE CORPORATION:

By: Judith A. Roos
Judith A. Roos
Marketing & Customer Service Manager
455 Spring Park Place, Suite 200
Herndon, Virginia 20170

703/326-5617; Fax: 703/326-5660

MSRC
Marine Spill Response Corporation

Don Toenshoff, Jr.
Executive Vice President

RECEIVED
MAY 2 2003
ENTRIX, INC
FRONT DESK

May 16, 2003

Stephen Leonard
Tesoro Salt Lake City Refinery
474 West 900 North
Salt Lake City, Utah 84103-1494

Dear Mr. Leonard:

The National Preparedness for Response Exercise Program (NPREP) Guidelines require a planholder to ensure that Equipment Deployment Exercise requirements are met on an annual basis. The NPREP Guidelines identify the minimum amount of equipment that must be deployed in Equipment Deployment Exercises.

This letter provides documentation to you that MSRC has completed the NPREP Equipment Deployment Exercises exercise requirements for 2002. For purposes of Equipment Deployment Exercises under NPREP, each MSRC Region is considered a separate Oil Spill Removal Organization (OSRO). MSRC is divided into three regions, Eastern (Maine – Georgia, and the Mid-Continent), Southern (Florida - Texas including Puerto Rico and the U.S. Virgin Islands) and Western (California - Washington including Hawaii). MSRC has deployed, at a minimum, the NPREP required amounts of each type of boom and one of each type of skimming system in the applicable regional inventory. This equipment has been deployed, if required, in each of the three types of operating environments listed in NPREP (fully protected, sheltered and unsheltered). Each MSRC Region has met these equipment deployment requirements. In addition, each Region has conducted extensive personnel training, as well as, maintained its equipment according to a rigid preventative and corrective maintenance schedule.

Documentation and records of the specific information relating to MSRC Equipment Deployment Exercises is maintained in each MSRC Region. Please feel free to contact the MSRC regions directly or Doug O'Donovan at (703) 326-5611 for additional information.

Sincerely,

455 Spring Park Place Suite 200 Herndon, VA 20170 Telephone 703 326 5600 Fax 703 326 5660

MARINE SPILL RESPONSE CORPORATION
SERVICE AGREEMENT

EXECUTION INSTRUMENT

The **MSRC SERVICE AGREEMENT** attached hereto (together with this execution instrument, the "Agreement"), a standard form of agreement amended and restated as of September 27, 1996, is hereby entered into by and between

Tesoro Petroleum Corporation
[Name of COMPANY]

a Delaware Corporation
[Type of entity and place of organization]

with its principal offices located at 8700 Tesoro Drive, San Antonio, Texas 78217

(the "COMPANY"), and **MARINE SPILL RESPONSE CORPORATION**, a nonprofit corporation organized under the laws of Tennessee ("MSRC"), and shall be identified as

SERVICE AGREEMENT No. UMPA 090 [This is to be provided by MSRC.]

IN WITNESS WHEREOF, the parties hereto each have caused this Agreement to be duly executed and effective as of June 3, 1998.

Tesoro Petroleum Corporation [COMPANY]

By: [signature]

James C. Reed, Jr. [print name]

Title: Executive Vice President, General Counsel and Secretary

Address: 8700 Tesoro Drive
San Antonio, Texas 78217

Telephone: 210-828-8484 Fax: 210-283-2400

MARINE SPILL RESPONSE CORPORATION:

By: Judith A. Roos
Judith A. Roos
Marketing & Customer Service Manager
455 Spring Park Place, Suite 200
Herndon, Virginia 20170

703/326-5617; Fax: 703/326-5660

MSRC
Marine Spill Response Corporation

Judith A. Roos
Marketing & Customer Service Manager
(703) 326-5617

June 20, 2003

Mr. Stephen Leonard
Tesoro Salt Lake City Refinery
474 West 900 North
Salt Lake City, Utah 84103-1494

Dear Mr. Leonard:

The Marine Spill Response Corporation (MSRC) is pleased to inform you that Tesoro may cite certain MSRC resources in your Salt Lake City, Utah facility response plan.

1. You may cite 2,500 barrels/day EDRC to assist in satisfying your 12-hour federal response planning requirements. This recovery capability would be airlifted to Salt Lake City from our San Francisco area locations.

2. You may also reference 5,000 feet of 18" boom that MSRC could pull from a number of locations on the West and Gulf Coasts. These include the following locations:

a)	Richmond, California	2,820 ft.
b)	Stockton, California	2,000 ft.
c)	Sacramento, California	2,000 ft.
d)	San Diego, California	1,900 ft.
e)	Neah Bay, Washington	4,000 ft.
f)	Pascagoula, Mississippi	4,500 ft.
g)	Miami, Florida	2,000 ft.

MSRC would need to airlift these resources to Utah, given the applicable planning timeframes. While MSRC cannot guarantee arrival or mobilization times, its seems reasonable to assume that MSRC resources could be available in Utah within 12 hours. However, we caution you that airlift costs could be significant. We understand that support resources will be sourced locally by Tesoro, to include the personnel and small boats needed to deploy the recovery capability and boom.

3. MSRC suggests that MSRC and Tesoro personnel meet as needed to familiarize MSRC with Tesoro's facility and response strategies, to familiarize Tesoro personnel with the MSRC equipment, and to review the personnel and other support resources to be sourced locally by Tesoro. As your facility is outside MSRC's primary Operational Area, these training expenses would be fully reimbursed by Tesoro.

455 Spring Park Place Suite 200 Herndon, VA 20170 Telephone 703 326 5600 Fax 703 326 5660

Mr. Stephen Leonard
June 20, 2003
Page Two

4. To the extent MSRC is required to "backfill" any resources sent to Salt Lake City (e.g., due to strict California OSRO requirements) the backfill costs would be fully reimbursed by Tesoro.

5. If Tesoro so desires MSRC will explore contract resources that may be made available (equipment and personnel) in the Salt Lake City area to deploy MSRC equipment at the time of the spill. All expenses associated with training and identifying such contractors will be fully reimbursed by Tesoro.

6. This citation is conditioned on the following:

A. Tesoro executes an Inland Addendum to its Service Agreement.

B. You notify us of any changes to your response planning requirements that impact MSRC

C. The Salt Lake facility is designated by Tesoro as a covered facility under Tesoro's Service Agreement with MSRC, and Tesoro designates one or more authorized representatives with the authority to mobilize MSRC resources under that Service Agreement.

D. Any response would be provided under the terms and conditions of the Service Agreement, including Section 2.01(a) that provides certain conditions for responses in inland areas outside of MSRC's primary Operational Area.

Please let me know if you have any questions regarding the above.

Sincerely,

Judith a Ross

APPENDIX C FACILITY DESCRIPTION

C.1 FACILITY DESCRIPTION AND OPERATION OVERVIEW

The refinery is located within the Salt Lake City limits at the foot of the Wasach Mountains. The Utah Transit Authority Train Maintenance Yard and Interstate 15 bound the refinery to the southwest. Residential areas are situated beyond the interstate. Highway 89 forms the eastern boundary. Residential and industrial facilities are located north of the refinery. Buffer zone property is located to the northwest, immediately adjacent to the process units. Some residential properties are near the southeast corner, and industrial facilities are to the south. Several Special Population Facilities are located within 1.3 miles of the refinery. These include schools, State Capitol Building, daycare centers and nursing homes. The Remote Terminal is located to the northwest of the refinery in an industrial area.

The Salt Lake City Refinery (**FIGURE C.1**) was originally constructed in 1908 as the Lubra Oils Manufacturing Company, and was the first refinery to be built in the Salt Lake City area. The refinery's main purpose was to produce lubricating oils and harness dressings for local businesses. The refinery was renamed the Utah Oil Refining Company in 1909. Standard Oil of Indiana (subsequently became Amoco and later merged with BP) assumed a controlling interest in the Utah Oil Refining Company (or UTOCO) in 1917.

Salt Lake City is configured as a single train, sweet crude refinery and produces gasoline, jet fuel, diesels, and propane. There are seven process units at the site, a crude unit, a reformer, a fluid catalytic cracker, an alkylation unit, product blending and storage, a sulfur recovery unit, benzene reduction unit and gasoline hydrotreater as well as additional support facilities.

The refinery was originally built to process 7 barrels per day of Wyoming crude oil. In 1944, it was expanded to 16,000 B/D to support the war effort. This expansion included construction of the Catalytic Cracking and Alkylation Units and additional tankage. In 1952, the Remote Terminal (**FIGURE C.1**) was constructed, adding approximately (b) (7)(F) [redacted] of storage capacity. The next major expansion occurred in 1954, with the addition of the Crude Unit, Reforming Unit and Boiler Plant. In 1958, refining capacity was increased to 35,000 B/D. Additional tankage was added in 1970.

Currently, Salt Lake City has a capacity to process about 60,000 barrels of sweet (low sulfur) crude oil per day. Approximately 70% of the crude oil run at the facility is domestic and 30% Canadian. Product mix is on average about 60% gasoline, 35% distillates (diesel and jet fuel), and a small amount of propane and heavy fuel oil. About half of the products produced by the refinery are supplied into the local Salt Lake City market. The balance of the refinery's production is shipped via pipeline to customers in southern Idaho and eastern Washington. Tanks are listed in **TABLE C.1** and **TABLE C.2**.

The refinery operates continuously. Control rooms are manned constantly. There is 24-hour security surveillance. Operators are on the units continuously to monitor and perform the various manual activities associated with keeping the system running and to make changes as necessary.

Crude received via pipeline from the remote tank farm is pumped directly to the crude unit without intermediate storage in the refinery. Other materials are received at the refinery for storage and processing, including:

- Optional crude oils
- Recoverable materials to be recycled with crude oil
- Gas oil (feedstock for FCU)
- Low sulfur distillate (blend stock)
- Butane for blending into gasoline or processed for production of gasoline blend stock
- Liquid caustic
- Pour Point Depressant (distillate additive)
- Ethanol (gasoline oxygenate)
- Other miscellaneous additives used in the refining process and in product blending

Products are delivered to markets by pipeline, transport trucks, and railcar. Product shipment by pipeline is effected from the terminal with pumps, piping manifold, and meters. The pipeline terminal is located on the west side of the refinery.

A gasoline blending facility is located near the center of the refinery tank farm. The facility includes a blending manifold with meters, control valves, additive injection, automatic sampling, electronic octane comparator and an octane analysis laboratory.

A quality control laboratory is located near the south end of the refinery near the main entrance. Lab wastes accumulate in Tank 501.

Railcar facilities receive ethanol and other blend stocks used in blending gasoline. NGL shipments are received by truck and rail.

Pipeline facilities receive low sulfur distillate for blending into low sulfur highway diesel fuels. The blending facility is located west of the Crude unit.

The Sulfur Recovery Unit (SRU), located southeast of the Boiler Plant, removes sulfur from plant gas. Recovered molten sulfur is transported offsite by truck.

Miscellaneous facilities include a metal trades shop, machine shop, instrument/electrical shop, truck fleet garage, warehouse, and storage buildings, training facilities, fire fighting equipment and buildings, and management office buildings.

The Salt Lake City Refinery has approximately 230 employees. Operations and Maintenance employees are represented by USW local 286.

This facility is not located in a wellhead protection area, and there are no surface impoundments at this facility.

C.1.1 TANK INFORMATION

Most product storage tanks are constructed of welded steel, and meet the American Petroleum Institute (API) and American Society of Mechanical Engineers (ASME) standards. Some of the older tanks are riveted.

This facility has not experienced two-spill event to navigable waters.

In 2001, there was a spill into a tank dike that entered a municipal storm drain line that is routed through the refinery tank farm. This release discharged oil to the surface drainage ditch along the railroad tracks along the west side of the facility. The spill was reported, refinery crews responded to collect and remove accumulated oil, and booms were put in place to prevent migration of residual oil during precipitation events. This spill occurred prior to Tesoro ownership, which began on September 6, 2001. Cover plates over access manways for this storm drain have been elevated and re-sealed to reduce the potential of a similar incident in the future.

There was a release of 50,000 gallons of gasoline from the truck loading rack. This spill occurred well before the September 6, 2001 Tesoro ownership start date.

C.1.2 SECONDARY CONTAINMENT

Earthen or concrete dikes provide secondary containment around storage tanks. Storage tank secondary containment is designed to handle maximum probable spills.

Large storage tanks are geographically isolated within earthen dikes to prevent the potential spread of fire in the event of a tank failure. The dikes are constructed as surface containment to meet requirements of the National Fire Protection Association (NFPA) Standard #30. Dikes are typically 5-6 feet above the base of the storage tank. The dike fill slopes at a minimum 2/1 measure. The floor of the dike area is graded away from the storage tank so that storm water will not collect near the tank.

Diked area volumes meet or exceed the 100% capacity of the respective tanks plus freeboard for precipitation. Containment volumes are listed in **TABLE C.1** for tanks in the refinery tank farm and **TABLE C.2** for tanks at the remote terminal.

The tank dikes in the remote tank farm are designed without drains. Due to the SLC climate, it has not been necessary to drain accumulations of water from the remote tank farm dikes. In the event of water accumulation that impacted secondary containment capacities, the water would be inspected for sheen or oil. If free of sheen or oil, the water would be pumped out of the dike to the surface within the remote tank farm property. Oil or oily water would be removed from the dike by vacuum truck or pumped to a tank for subsequent treatment at the refinery.

Concrete diked areas for fuel and additive tanks at the truck loading rack can be drained to the refinery wastewater system. In the event of water accumulation that impacted secondary containment capacities, the water would be inspected for sheen or oil. If free of sheen or oil, the water would be drained out of the dike to the surface by manually opening dike drain valves. From the surface water would flow to a catch basin and drain pipe to the wastewater treatment system. Oil or oily water would be removed from the dike by vacuum truck or pumped to a tank for subsequent treatment at the refinery.

Accumulated precipitation in the concrete dikes around Tank #F-879, the fire fighting diesel fuel tank in the remote tank farm, and Tank #501, the lab waste tank is allowed to evaporate. In the event of excessive accumulation, a vacuum truck would be used to transfer the liquids to the refinery wastewater treatment system. The facility does not use any flapper-type drain valves.

Drainage from undiked areas of the refinery are generally captured by refinery wastewater systems as shown on **FIGURE C.6**. There may be portions of the Tesoro property on the southwest side by the mechanical and instrument/electrical shops that sheet flows to the adjacent roads, low points and to surface ditches along the railroad tracks. There are no storm drains in undiked areas of the facility.

Drainage from undiked areas of the remote tank farm accumulates in undeveloped portions of the Tesoro property. (b) (7)(F) [redacted] Low points on the Tesoro property are located to the north, west and southwest of the tank farm. These low points would serve to collect precipitation and runoff from undiked areas.

There is an 18-inch municipal storm drain that passes through the refinery tank farm. This storm drain has overflowed water into tank dikes and served as a pathway to allow oil to escape to a surface drainage ditch. Cover plates over access manways have been elevated and re-sealed to reduce the potential of these incidents in the future.

Drainage at the facility is engineered so that diversion systems are not necessary. Precipitation falling within the refinery process units, main tank farm and truck loading rack is processed in the wastewater treatment system. To accommodate periods of high flow and/or spilled oil in drain systems, stormwater can be diverted to Tank 203 and held for subsequent processing.

Spill Flow Direction

Spills in the refinery are usually contained in tank dikes and refinery sewer system. In the unlikely event that secondary containment did not hold a spilled material, that material would migrate west of the refinery. The lowest elevation in the refinery is the Wastewater Treatment Facility that borders the refineries west road and the UP Railroad yard. Flow direction is indicated on the Facility Drainage Map, **FIGURE C.2**.

In the event spilled material is encountered, avoid the area and contact a supervisor so they may notify Incident Command on channel 3 A. Evacuating personnel are not to walk or drive through any spilled or unknown product.

C.1.3 OIL/WATER SEPARATOR

The drainage system relies primarily on natural hydraulic flow to move accumulated rainwater to the oil/water separator (OWS). Water is pumped from the OWS to the wastewater treatment plant. In the event the primary pump fails, a backup pump is available. In addition, water accumulated in the tank dikes is transferred to the OWS through a series of lift stations. These transfers are not critical during storms, they only are used to drain off stormwater accumulations after storms. Blind sumps at the ethanol and aromatics rail car rack must be pumped out, typically done via vacuum truck.

Tank F-876 is an oil/water separator. It is not considered an oil storage tank. The tank is kept nearly full with wastewater to allow retention time for free oils to separate and be decanted off. A small section of the tank collects the decanted oils and is pumped out whenever a level is detected.

The tank is welded steel construction installed with protective coating and cathodic protection.

The API separator at the wastewater pre-treatment plant is a below-grade concrete box used to collect plant wastewater and separate floating oils and sinking sediments by gravity separation. Decanted oils and sediments are collected in separate chambers and pumped out as levels are detected. The separator is not considered an oil storage tank.

Immediately downstream of the API separator is the Dissolved Air Floatation (DAF) unit, which is also a below-grade concrete box. The DAF is used for further treatment of the wastewater to separate dissolved hydrocarbons from the wastewater. The separated material floats and is skimmed off and pumped to an above-ground sludge management system. The DAF is not considered an oil storage tank.

An underground concrete box serves as a backwash basin to the wastewater final filters. This box is used to temporarily collect solids that contain concentrations of hydrocarbon. Free liquids are recycled to the pre-treatment plant and the sludge is transferred to the sludge management system. The backwash basin is not considered an oil storage tank.

C.2 TRUCK LOADING

C.2.1 TRANSPORT LOADING RACK (TRUCKS)

The Transport Loading Rack (TLR) is a major fuel-loading facility for product distribution from the Salt Lake City Refinery. The facility includes five truck transport loading spots, each capable of delivering gasoline and distillate products to bottom-loading truck compartments fitted with vapor recovery. The TLR is located on property adjacent to the refinery (opposite to the southern entrance to the refinery), but is independently fenced and monitored so that authorized access is controlled independently from the refinery.

The facility functions 24 hours a day. Truck drivers load their own trucks. Drivers are authorized with computer identification cards that are issued only to trained and qualified drivers. Product is authorized for loading by computer to the flow control valve for each product. Manual override is possible only by electrical intervention to the computer control system, available at a remote location to restricted personnel.

The electronic control system will not authorize product loading until the truck has a verified grounding connection, which also verifies overfill prevention sensors in each truck compartment the ground connection or the connection to the overfill sensors is not maintained, the system will cease loading. Trucks are tightness tested annually for air emissions certification, which also demonstrates no leaks. All trucks loading at this facility are required to have current tank tightness certification.

Connection fittings that interface the loading facility with the truck utilize a dry-break quick connect device designated to prevent spills when connecting or disconnecting. Companion fittings on the truck and on the loading arm have flush mating surfaces that displace any space for liquid to otherwise occupy. After the two pieces are secure together, a lever arm retracts the two mating surfaces out of the liquid path. The engagement of the lever arm prevents the disconnection until the mating surfaces are returned to the closed position. When the fittings are disconnected, there is no volume of liquid exposed. The action to disconnect the fitting automatically closes the gates on both fittings. It is not possible to disconnect without simultaneously closing the valves on both the load arm and the truck.

DOT Procedures

Loading procedures and equipment have been provided so that the loader can meet DOT requirements. Drivers are required to certify that they have received instructions on the proper operation and procedures for loading at this facility before they are issued computer read authorization cards. The basic DOT requirements for loading facilities include:

- No smoking or equivalent activity that might be an ignition source
- Stop engine before connecting
- Set hand brake before connecting
- Connect static ground before loading
- Attend loading continuously
- Close valves before disconnection
- Disconnect hoses before moving the truck
- Inspect all drains and outlets before moving truck

Containment

Each load spot has a concrete pad sufficient to accommodate the length of a tank truck and thus collect the minor spills that may occur at any location on the truck or from the loading equipment. Each pad is graded to a collection basin which drains to an underground oil/water separator. The oil/water separator is sized to accommodate the volume of a typical truck compartment. Collected oil is pump returned to an aboveground oil recovery drum. Water flows through to the refinery wastewater collection system for further treatment before discharging to the POTW.

In the unlikely event of a catastrophic rupture of a tank truck compartment beyond the drain pad, the spillage would drain to area collection boxes connected to the refinery wastewater collection system. This would prevent the spill from leaving the property or contaminating navigable waters.

C.2.2 PRODUCT ADDITIVE UNLOADING AT THE TLR (TRUCKS)

There are additive tanks near the Transport Loading Rack that supply additives to products as they are loaded on to tank trucks. These additive tanks are replenished periodically with bulk truck shipments that are unloaded near the site.

DOT Procedures
Unloading is supervised by refinery operators trained in the appropriate procedures. Equipment needed to meet the DOT requirements is provided.

Containment
Concrete barriers have been installed for containment. Containment for the connection points is provided to direct spillage back to the tank containment. In the event of a major spill outside the tank containment, the spillage would spread within the property to area drains discharging to the plant wastewater collection system.

C..2.3 GAS OIL UNLOADING AT TANK 206 (TRUCK)

A single spot truck unloading station is provided to receive FCU feedstock from sources outside the refinery.

DOT Procedures
The truck driver performs the unloading. DOT procedures are posted and equipment provided to meet DOT requirements.

Containment
Minor spills are controlled with buckets placed under the connection fittings. Connection hoses are drained to a sump when not in use. In the event of a major spill, the spillage would flow into the dike areas and be contained onsite. The Emergency Response Organization would be activated in the event of a spill, but there is no potential for spillage to flow offsite or to get into navigable waters.

C.2.4 SLOP/DNG UNLOADING AT TANK 309 (TRUCK)

The slop unloading facility is a single-spot location for unloading slop oil recovered from contaminated products and other operations such as maintenance and spill clean-ups, and natural gas condensate (DNG). This unloading station is located in the tank farm near the northern edge of the refinery property and adjacent to Tank 309. This station is used typically for recovery of lighter type hydrocarbon products.

DOT Procedures
Unloading is performed by the truck driver, trained in the procedures required including DOT requirements. Equipment is provided to meet DOT requirements.

Containment
Containment for minor spills is provided by placing buckets under connection fittings. In the event of a major spill, the spillage would flow into the dike areas and be contained onsite. The Emergency Response Organization would be activated, but there is no potential for spillage to flow offsite or to get into navigable waters.

C.2.5 CETANE IMPROVER UNLOADING AT TANK 310 (TRUCK)

Cetane improver unloading at Tank 310 is out of service.

C.2.6 SLOP UNLOADING AT TANK 297 (TRUCK)

This slop unloading facility is used to recover oil from various types of contaminated sources including oil spills, maintenance pump outs, and contaminated product. This is a one-spot station located in the refinery near the wastewater treatment plant and adjacent to Tank 297. Tank 297 decants the oil for reprocessing and discharges water to the wastewater treatment facility.

DOT Procedures
Unloading at the slop oil recovery facility is performed by truck drivers supervised by a refinery operator. The refinery operator lines up piping and pumps so that unloading is directed appropriately. Connections to the truck and monitoring of the unloading process is provided by the truck driver. Equipment is provided to meet DOT requirements.

Containment
A concrete drain pad sized to accommodate the entire truck is provided complete with curbing to contain a sizable spill. In the event of a major spill, the spillage would overflow the containment into the Tank 297 dike area.

C.2.7 WATER/OIL MIXTURE UNLOADING AT THE WWTP (TRUCK)

Water/oil mixtures are discharged to the refinery wastewater system at this unloading spot. This is a two-spot facility located immediately adjacent to the wastewater treatment plant.

DOT Procedures
Truck drivers perform the unloading in accordance with Tesoro procedures as well as DOT requirements. Equipment is provided to meet DOT requirements.

Containment
A containment pad sized to accommodate two trucks is provided, with drainage connected to the wastewater collection system. In the event of a catastrophic rupture, the spillage might overflow the containment pad and spread across the adjoining ground, but there is no potential for spillage to flow offsite or to surface waters.

C.2.8 DECANTED OIL LOADING RACK (TRUCK)

This rack is a single-spot loader for top loading of heavy fuel oils. The truck driver is the loader and is authorized to load product by computer with the same qualification for the TLR. This product is heated and is loaded into insulated tank compartments. Minor spills don't go very far before solidifying. This rack is located in the refinery within the dike areas of the tank farm.

DOT Procedures
The truck driver certifies training similar to the TLR instructions which include the DOT requirements. Procedures are posted and equipment is provided to meet the DOT requirements.

Containment
A concrete pad covers the area of the loading spot, graded to an area drain connected to the refinery wastewater collection system. The drain is steam-traced to assure any spillage will flow into the wastewater system. A catastrophic rupture may spread beyond the drain pad. The Decanted Oil Loading Rack is located interior to the refinery along a roadway bordered by the tank farm and dikes. A major spill from this rack could possibly flow down the road and into a surface drainage channel that drains refinery stormwater to a collection box within the refinery and into the refinery wastewater collection system. In the event of a major spill, the Emergency Response Organization would be activated, but there is no potential for spillage to flow offsite or to get into navigable waters.

C.2.9 BLACK WAX UNLOADING (TRUCK)

The black wax (heavy crude) unloading rack is a two-spot station dedicated to unloading black wax only. It is located in southeast corner of the TKF adjacent to the Blending Unit..

DOT Procedures
The truck driver will be performing the connecting and unloading. They will be instructed in the correct procedures necessary to safely unload their products including the DOT requirements.

Containment
Concrete pads are provided to collect minor spills. Provision will be made to drain connecting hoses when not in use, to a collection sump. In the event of a major spill, the spillage would spread beyond the concrete pads. Since the station is located deep in the tank farm, the spillage would be restricted to the vicinity of the unloading rack along the roadway in each direction. In the event of a major spill, the Emergency Response Organization would be activated, but there is no potential for spillage to flow offsite or to get into navigable waters.

C.2.10 PPD UNLOADING AT TANK 311 (TRUCK)

Pour Point Depressant (PPD) unloading occurs infrequently to replenish additive for distillate blending. Unloading is arranged by appointment and requires the assistance of refinery operators to line up piping for unloading.

DOT Procedures
Unloading is supervised by tank farm operators trained in the appropriate procedures. Additionally, there are signs advising of the appropriate precautions necessary.

Containment
A small containment basin has been provided in the immediate area of the piping connectors. This will collect any minor spills. The unloading spot at Tank 311 does not have immediate dike containment for a major spill, but such spillage would drain to nearby plant wastewater collection basins and be recovered in the pre-treatment facilities. In the even of a major spill, the Emergency Response Organization would be activated, but there is no potential for spillage to flow offsite or to get into navigable waters.

C.2.11 OFF-SPEC PRODUCT UNLOADING AT THE NITROGEN PLANT (TRUCK)

A truck unloading station has been provided to off-load products that are off-specification and need to be returned to the plant for reprocessing. This station is located near the nitrogen plant at the east side.

<u>DOT Procedures</u>
Unloading is supervised by the refinery operators trained in the appropriate procedures. Equipment needed to meet the DOT requirements is provided.

<u>Containment</u>
Local containment consists of a concrete drain pad sufficient to collect minor spills from the connecting hose only. A portable container is used to collect drips at truck connections. In the event of a major spill or rupture, the spillage would follow the roadway to a down-gradient area drain connected to the refinery wastewater collection system. In the event of a major spill, the Emergency Response Organization would be activated, but there is no potential for spillage to flow offsite or into navigable waters.

C.3 RAIL CAR LOADING

C.3.1 DISTILLATE LOADING AT THE TANK CAR RACK (RAIL CARS)

The tank car rack will accommodate the spotting of eight rail cars on opposing sides of four loading arms. The tank car rack is located towards the south-eastern portion of the refinery.

<u>DOT Procedures</u>
Refinery operators load distillate products. They are trained in the appropriate procedures. Equipment necessary to meet the DOT requirements is provided.

<u>Containment</u>
The entire tank car rack is contained within a concrete drain pad with curbs. Drainage connects to the refinery wastewater collection system. The containment relies on the capacity of the open drainage system to drain away products as fast as released. In the event of a catastrophic rupture, it is possible that excessive spillage could overflow the containment and follow the tracks southward. There are multiple opportunities to trap out portions of the spillage by placing absorbent barriers in the flow path between the tank car rack and the nearest storm drain approximately 4,000 feet down gradient. A large and sudden spill would require activation of the Emergency Response Organization.

C.3.2 DCO LOADING (RAIL CARS)

Decanted oil (DCO) products is loaded at a two- spot rail car facility located east of the Fluid Catalyst Cracking Process Unit.

DOT Procedures

Loading is performed by refinery operating personnel trained in the appropriate procedures. Equipment needed to meet the DOT requirement is provided.

Containment

Minor spill containment is provided with a concrete drain pad under the rack and with spill collection pans under the connections to the railcar. DCO is a heavy oil product that will set up if not kept warm. A large and sudden spill would activate the Emergency Response Organization, but would pose no potential threat to navigable waters.

C.3.3 ETHANOL/AROMATICS UNLOADING (RAIL CARS)

There is a 4-spot rail car unloading facility to receive ethanol (or equivalent oxygenate), and aromatics (vapor pressure reducing additive). There is one location for truck unloading of ethanol at the TLR. Special spill prevention equipment and procedures have been incorporated in the loading spot to contain, collect, and recover any spilled material.

DOT Procedures

Unloading of railcars is performed by refinery operators, trained in the applicable procedures. Equipment necessary to meet DOT requirements is provided.

Containment

Special containment provisions have been made to prevent minor spills from getting into the ground or into any wastewater system. Drain pans are located under the tank car connection fittings. Drain troughs and containment pads with curbs are established around unloading pumps and transfer pumps to collect any spills. These collection facilities drain into double-walled sumps designed for leak detection. The sumps require pumping in order to empty. The pumping is usually accomplished with a vacuum truck after verification that the pumpage is uncontaminated, then the pumpage is prevented from discharge to the refinery wastewater system and is disposed of appropriately.

C.4 PIPELINES

Underground piping runs between the refinery and the remote tank farm, through refinery and remote terminal secondary containment dikes, below rail lines and roads. Underground piping is protected with coating, wrapping, and cathodic protection is sleeved. The cathodic protection systems are monitored routinely to assure integrity of operation. Underground piping is pressure tested annually to required standards. Piping below railways and the highway is routed in a casing sufficient to allow protection against external forces and to allow leak detection.

If a section of buried piping is exposed for any reason, it is carefully examined for deterioration. If corrosion damage is found, additional examination and corrective action will be taken as indicated by the magnitude of the damage.

Pipelines that are removed from service for extended periods of time are isolated with blank flanges or caps as required.

Pipe supports are properly designed to minimize abrasion and corrosion and to allow for expansion and contraction of pipelines.

Piping conforms to ASTM, API, ASME, and/or ANSI specifications. Aboveground pipelines are coated with enamel paint.

Repair of pipelines and gauges is instigated as leaks occur. Upon notice of a leak, pumping is halted, the section is valved off and drained. An inspector is called upon to evaluate and recommend appropriate repair action. Repairs are made following industry standards. Repaired units are pressure-tested, and placed in service.

Refinery and Remote Terminal maintenance and inspection records are maintained at the Refinery by the Maintenance Supervisor. Records are filed for a period of at greater than the three years required by the SPCC Rule. Records maintained include: daily maintenance logs, inspection records, documentation of improvements/changes to facilities, and copies of bids and bills.

C.5 SPILL DETECTION

(b) (7)(F)

[redacted]

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

C.6 DESCRIPTION AND LOCATION OF EMERGENCY SHUTDOWN SYSTEM

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

C.7 FACILITY INSPECTIONS

The frequency and type of inspections and preventive maintenance comply with API Standards and Recommended Procedures, as well as EPA requirements. Records of monthly and annual inspections, together with records of unscheduled maintenance, are maintained at the refinery office for more than the three years required by the SPCC Rule. The records also include existing drawings pertinent to facility design and construction.

Inspections include:

Daily

- Operators conduct visual inspection of the loading rack, tank farm, all pumps and valves, office, fire protection equipment, and oil/water separator.
- Tank gauges, temperature and meter readings are recorded daily. Tank levels and product inventory are maintained and manually reconciled daily. Receiving tanks are gauged and valves are set prior to receipt of product.

- Discharge of accumulated stormwater is through an oil/water separator. Treatment and discharge is conducted in compliance with EPA regulations.

Weekly

- The refinery alarms are tested each Monday at 4:00 p.m.
- Responder's emergency contact are tested each Monday at 4:00 p.m via SWN.

Monthly

- All tanks are periodically hand gauged. Tank gauges and meters are calibrated as needed.
- Recent adoption of API Standard 653 (Tank Inspection, Repair, Alteration, and Reconstruction) initiated new visual and non-destruction testing inspection standards. All tanks have been inspected and are in compliance with API 653 Guidelines.
- Cathodic protection meters are checked by operators.
- Facility response equipment

Quarterly

- Spill response equipment is located at the refinery and is inspected and maintained by Refinery ERC.
- Meters are inspected and calibrated by terminal operators and state authorities.

Annually

- The foam fire system, back flow preventer, and fire extinguishers are inspected and tested.
- Additional preventive maintenance conducted on a scheduled basis includes inspection/cleaning/lubing of valves and inspection of tank roofs.

C.8 FACILITY SECURITY

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

(b) (7)(F)

[redacted]

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

C.9 OTHER UTILITIES

The facility firewater system is shown on **FIGURE C.3**. Facility and city potable water systems are displayed on **FIGURE C.4**. The natural gas system at the refinery is illustrated on **FIGURE C.5**.

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TABLE C.1
BULK STORAGE TANKS IN THE REFINERY

Tank No.	Substance Stored	Maximum Tank Capacity (Gallons)	Quantity Stored (Gallons)	Tank Type	Year Installed	Spill Prevention Measures	Surface Impoundment Maximum Capacity (Gallons)
F609A	H2SO4	(b) (7)(F) [redacted]	[redacted]	Cone	1996	(b) (7)(F) [redacted]	[redacted]
F609B	H2SO4	[redacted]	[redacted]	Cone	1943	[redacted]	[redacted]
F610B	H2SO4	[redacted]	[redacted]	Cone	1943	[redacted]	[redacted]
F611	H2SO4	[redacted]	[redacted]	Cone	1943	[redacted]	[redacted]
F612	H2SO4	[redacted]	[redacted]	Cone	1994	[redacted]	[redacted]
F700	H2SO4	[redacted]	[redacted]	Vertical (PL)	1994	[redacted]	[redacted]
F830	**OOS**	[redacted]	[redacted]	Vertical		[redacted]	[redacted]
F835	**OOS**	[redacted]	[redacted]	Horizontal		[redacted]	[redacted]
F836	**OOS**	[redacted]	[redacted]	Horizontal		[redacted]	[redacted]
F-601B	**OOS**	[redacted]	[redacted]	Dome		[redacted]	[redacted]
24	**OOS**	[redacted]	[redacted]	Cone	1943	[redacted]	[redacted]
28	**OOS**	[redacted]	[redacted]	Cone	1943	[redacted]	[redacted]
29	**OOS**	[redacted]	[redacted]	Cone	1972	[redacted]	[redacted]
30	**OOS**	[redacted]	[redacted]	Cone	1941	[redacted]	[redacted]
41	Gasoline Add	[redacted]	[redacted]	Horizontal	1991	[redacted]	[redacted]
41T	Diesel Add	[redacted]	[redacted]	Horizontal	1991	[redacted]	[redacted]
42	Diesel Add	[redacted]	[redacted]	Horizontal	1991	[redacted]	[redacted]
51	WW Sludge	[redacted]	[redacted]	Cone	1949	[redacted]	[redacted]
52	WW Sludge	[redacted]	[redacted]	Cone		[redacted]	[redacted]
53	**OOS**	[redacted]	[redacted]	Cone	1941	[redacted]	[redacted]
54	**OOS**	[redacted]	[redacted]	Cone	1941	[redacted]	[redacted]
57	**OOS**	[redacted]	[redacted]	Cone		[redacted]	[redacted]
58	**OOS**	[redacted]	[redacted]	Cone		[redacted]	[redacted]
59	**OOS**	[redacted]	[redacted]	Vertical	1984	[redacted]	[redacted]
61	Fire Foam	[redacted]	[redacted]	Horizontal	1946	[redacted]	[redacted]
104	Sour Water	[redacted]	[redacted]	Cone	1946	[redacted]	[redacted]
105	Diesel Add	[redacted]	[redacted]	Vertical	1902	[redacted]	[redacted]
140	DDU Feed	[redacted]	[redacted]	Internal Flt.	1960	[redacted]	[redacted]
141	Turbo	[redacted]	[redacted]	Cone	1970	[redacted]	[redacted]
142	Hvy. Fuel Oil	[redacted]	[redacted]	Cone	1969	[redacted]	[redacted]
144	UFU Feed	[redacted]	[redacted]	Internal Flt.	1962	[redacted]	[redacted]
155	Butane	[redacted]	[redacted]	Sphere		[redacted]	[redacted]
156	**OOS**	[redacted]	[redacted]	Cone		[redacted]	[redacted]
157	Jet	[redacted]	[redacted]	Cone	1970	[redacted]	[redacted]
158	Jet	[redacted]	[redacted]	Cone	1970	[redacted]	[redacted]
160	H2SO4	[redacted]	[redacted]	Cone	1930	[redacted]	[redacted]
186	Black Wax	[redacted]	[redacted]	Cone	2012	[redacted]	[redacted]
188	Black Wax	[redacted]	[redacted]	R Cone	1922	[redacted]	[redacted]
189	**OOS**	[redacted]	[redacted]	R Cone		[redacted]	[redacted]
190	Reformate	[redacted]	[redacted]	R Internal Flt	1922	[redacted]	[redacted]
193	**OOS**	[redacted]	[redacted]	R Cone		[redacted]	[redacted]
203	**OOS**	[redacted]	[redacted]	R Cone	1922	[redacted]	[redacted]
204	Diesel	[redacted]	[redacted]	R Cone	1923	[redacted]	[redacted]
205	**OOS**	[redacted]	[redacted]	R Cone	1922	[redacted]	[redacted]
206	Reduced Crude	[redacted]	[redacted]	Cone	1973	[redacted]	[redacted]
209	**OOS**	[redacted]	[redacted]	Cone	1923	[redacted]	[redacted]
211	**OOS**	[redacted]	[redacted]	R Cone		[redacted]	[redacted]
212	Diesel	[redacted]	[redacted]	R Cone	1924	[redacted]	[redacted]
213	Diesel	[redacted]	[redacted]	R Cone	1924	[redacted]	[redacted]
225	**OOS**	[redacted]	[redacted]	R Cone	1970	[redacted]	[redacted]
236	**OOS**	[redacted]	[redacted]	Cone		[redacted]	[redacted]
241	Storm water	[redacted]	[redacted]	R Ex Flt	1924	[redacted]	[redacted]
242	Gasoline Blnd	[redacted]	[redacted]	R Ex Flt	1928	[redacted]	[redacted]
243	Gasoline	[redacted]	[redacted]	R Ex Flt	1928	[redacted]	[redacted]
244	**OOS**	[redacted]	[redacted]	R Ex Flt	1985	[redacted]	[redacted]
245	Gasoline Blnd	[redacted]	[redacted]	R Ex Flt	1928	[redacted]	[redacted]
246	Diesel	[redacted]	[redacted]	External Flt	1928	[redacted]	[redacted]
247	Diesel	[redacted]	[redacted]	External Flt	1957	[redacted]	[redacted]
252	Gasoline	[redacted]	[redacted]	R Ex Flt	1957	[redacted]	[redacted]
268	**OOS**	[redacted]	[redacted]	R Cone	1928	[redacted]	[redacted]
270	**OOS**	[redacted]	[redacted]	Cone	1941	[redacted]	[redacted]
271	**OOS**	[redacted]	[redacted]	Cone	1943	[redacted]	[redacted]
272	**OOS**	[redacted]	[redacted]	Cone	1943	[redacted]	[redacted]
291	Black Wax Crude Oil	[redacted]	[redacted]	Cone	1929	[redacted]	[redacted]
297	Oil Recovery	[redacted]	[redacted]	Cone	1950	[redacted]	[redacted]
298	Oil Recovery	[redacted]	[redacted]	Cone	1956	[redacted]	[redacted]
305	Butane	[redacted]	[redacted]	Sphere	1960	[redacted]	[redacted]
306	Butane	[redacted]	[redacted]	Sphere	1973	[redacted]	[redacted]
307	Alkylate	[redacted]	[redacted]	External Flt	1992	[redacted]	[redacted]
308	Alkylate	[redacted]	[redacted]	External Flt	1943	[redacted]	[redacted]
309	**OOS**	[redacted]	[redacted]	External Flt		[redacted]	[redacted]
310	**OOS**	[redacted]	[redacted]	Cone	1943	[redacted]	[redacted]
311	**OOS**	[redacted]	[redacted]	Cone	1943	[redacted]	[redacted]
312	**OOS**	[redacted]	[redacted]	Cone	1943	[redacted]	[redacted]
314	**OOS**	[redacted]	[redacted]	Cone	1943	[redacted]	[redacted]
315	**OOS**	[redacted]	[redacted]	Cone	1943	[redacted]	[redacted]
316	**OOS**	[redacted]	[redacted]	Sphere	1943	[redacted]	[redacted]
317	**OOS**	[redacted]	[redacted]	Sphere	1943	[redacted]	[redacted]
318	**OOS**	[redacted]	[redacted]	Sphere	1943	[redacted]	[redacted]
320	**OOS**	[redacted]	[redacted]	External Flt	1943	[redacted]	[redacted]
321	Gasoline Blnd	[redacted]	[redacted]	Internal Flt	1943	[redacted]	[redacted]
322	Jet A	[redacted]	[redacted]	Cone	1977	[redacted]	[redacted]
323	Jet A	[redacted]	[redacted]	Cone	1943	[redacted]	[redacted]
324	Gasoline	[redacted]	[redacted]	External Flt	1943	[redacted]	[redacted]
325	Gasoline	[redacted]	[redacted]	External Flt	1943	[redacted]	[redacted]
326	Gasoline	[redacted]	[redacted]	External Flt	1943	[redacted]	[redacted]
327	Gasoline	[redacted]	[redacted]	External Flt	1943	[redacted]	[redacted]
328	Gasoline Blnd	[redacted]	[redacted]	External Flt	1943	[redacted]	[redacted]
329	Butane	[redacted]	[redacted]	Sphere	1943	[redacted]	[redacted]

Tank No.	Substance Stored	Maximum Tank Capacity (Gallons)	Quantity Stored (Gallons)	Tank Type	Year Installed	Spill Prevention Measures	Surface Impoundment Maximum Capacity (Gallons)
330	Gasoline	(b) (7)(F) [redacted]	[redacted]	External Flt	1960	(b) (7)(F) [redacted]	[redacted]
331	Gasoline Blnd	[redacted]	[redacted]	Internal Flt	1960	[redacted]	[redacted]
427A	Propane	[redacted]	[redacted]	Horizontal	1992	[redacted]	[redacted]
427B	Propane	[redacted]	[redacted]	Horizontal	1948	[redacted]	[redacted]
427C	Propane	[redacted]	[redacted]	Horizontal	1948	[redacted]	[redacted]
427D	Propane	[redacted]	[redacted]	Horizontal	1959	[redacted]	[redacted]
501	Lab slop	[redacted]	[redacted]	Horizontal	1959	[redacted]	[redacted]
503	Ethanol truck rack day tank	[redacted]	[redacted]	Int. Flt.	1992	[redacted]	[redacted]
504	Gasoline truck rack day tank	[redacted]	[redacted]	Int. Flt.	1996	[redacted]	[redacted]
505	Rack additive	[redacted]	[redacted]	Horizontal	1996	[redacted]	[redacted]
506	Rack additive	[redacted]	[redacted]	Horizontal	1996	[redacted]	[redacted]
801A	Caustic	[redacted]	[redacted]	Cone	1986	[redacted]	[redacted]
801B	**OOS**	[redacted]	[redacted]	Cone	1943	[redacted]	[redacted]
803	Caustic	[redacted]	[redacted]	Horizontal	1943	[redacted]	[redacted]
901	Rack additive	[redacted]	[redacted]	Horizontal	1943		

EXPLANATION OF TERMS

Contents		Tank Type		Spill Prevention Measures
OOS	Out of Service	**Cone**	Welded steel tank w/cone roof	(b) (7)(F) [redacted]
[redacted]		**R Cone**	Riveted steel tank w/cone roof	[redacted]
[redacted]		**Horizontal**	Horizontal steel tank	[redacted]
[redacted]		**Internal Flt**	Welded steel tank w/internal floating roof	[redacted]
[redacted]		**R Internal Flt**	Riveted steel tank w/internal floating roof	[redacted]
[redacted]		**Sphere**	Welded steel sphere or spheroid pressure tank	[redacted]
[redacted]		**External Flt**	Welded steel tank w/external floating roof	[redacted]
[redacted]		**R External Flt**	Riveted steel tank w/external floating roof	[redacted]
[redacted]		**Vertical**	Vertical welded steel tank	[redacted]
[redacted]		**Ver (PL)**	Vertical plastic tank	[redacted]
[redacted]		**Dome**	Dome roof welded steel tank	[redacted]

TABLE C.2
BULK STORAGE TANKS IN THE REMOTE TANK FARM

Tank No.	Substance Stored	Maximum Tank Capacity (Gallons)	Quantity Stored (Gallons)	Tank Type	Year Installed	Spill Prevention Measures	Surface Impoundment Maximum Capacity (Gallons)
401	Diesel	(b) (7)(F) [redacted]	[redacted]	Cone	53	(b) (7)(F) [redacted]	[redacted]
402	Crude Oil	[redacted]	[redacted]	Internal Flt	53	[redacted]	[redacted]
405	Crude Oil	[redacted]	[redacted]	External Flt	70	[redacted]	[redacted]
411	Turbo	[redacted]	[redacted]	Cone	52	[redacted]	[redacted]
412	Crude Oil	[redacted]	[redacted]	Internal Flt	52	[redacted]	[redacted]
413	Crude Oil	[redacted]	[redacted]	Internal Flt	52	[redacted]	[redacted]
414	Crude Oil	[redacted]	[redacted]	Internal Flt	52	[redacted]	[redacted]
421	Crude	[redacted]	[redacted]	External Flt	52	[redacted]	[redacted]
422	Gasoline Blnd	[redacted]	[redacted]	External Flt	52	[redacted]	[redacted]
423	Gasoline Blnd	[redacted]	[redacted]	External Flt	52	[redacted]	[redacted]
424	Gasoline Blnd	[redacted]	[redacted]	External Flt	53	[redacted]	[redacted]
431	Gasoline Blnd	[redacted]	[redacted]	External Flt	58	[redacted]	[redacted]
432	Gasoline Blnd	[redacted]	[redacted]	External Flt	60	[redacted]	[redacted]
F-879	Diesel for fire training	[redacted]	[redacted]	Horizontal		[redacted]	[redacted]
406	OOS	[redacted]	[redacted]			[redacted]	[redacted]
407	OOS	[redacted]	[redacted]			[redacted]	[redacted]
425	OOS	[redacted]	[redacted]			[redacted]	[redacted]

EXPLANATION OF TERMS

Tank Type		Spill Prevention Measures
Cone	Welded steel tank w/cone roof	(b) (7)(F) [redacted]
Horizontal	Horizontal steel tank	[redacted]
Internal Flt	Welded steel tank w/internal floating roof	[redacted]
External Flt	Welded steel tank w/external floating roof	[redacted]
[redacted]	[redacted]	[redacted]

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APPENDIX D HAZARD EVALUATION/RISK ANALYSIS

D.1 HAZARD EVALUATION

Hazard evaluation information includes the analysis of the potential for a spill and vulnerability analysis presented in the following subsections, as well as the facility-specific information presented in **APPENDIX C**.

Tank Table information is presented in **TABLE C.1** and **TABLE C.2**. There have been no tank failures at the refinery or remote terminal. There are no surface impoundments at the facilities.

D.2 ANALYSIS OF THE POTENTIAL FOR A SPILL

The potential for a spill has been analyzed and deemed to be present, but unlikely. This is based on a review of the following factors:

D.2.1 TANK AGE

The age of aboveground storage tanks is listed in **TABLE C.1** and **TABLE C.2**.

The Salt Lake City Refinery is over 100 years old. The oldest aboveground storage tanks (188 and 189) are 90 years old. Regardless of the age of the equipment or facility, a rigorous maintenance and inspection program is in place to minimize the potential for a spill. The frequency and type of inspections and preventive maintenance comply with API Standards and Recommended Procedures, as well as EPA requirements. Records of monthly and annual inspections, together with records of unscheduled maintenance, are maintained at the refinery office for more than the three years required. The records also include existing drawings pertinent to facility design and construction.

Refer to **TABLE C.1** in this Plan for the year of construction for the bulk fuel storage tanks at the refinery.

D.2.2 SPILL HISTORY

This facility has experienced three spill events to navigable waters.

In 2001 there was a spill into a tank dike that entered a municipal storm drain line that is routed through the refinery tank farm. This release discharged oil to the surface drainage ditch along the railroad tracks along the west side of the facility. The spill was reported, refinery crews responded to collect and remove accumulated oil, and booms were put in place to prevent migration of residual oil during precipitation events. This spill occurred prior to Tesoro ownership which began on September 6, 2001. Cover plates over access manways for this storm drain have been elevated and re-sealed to reduce the potential of a similar incident in the future.

There was a release of 50,000 gallons of gasoline from the truck loading rack on July 4, 1996. This spill occurred well before the September 6, 2001 Tesoro ownership start date.

On November 15, 2001, jet fuel leaked from a 6” line crossing 9th Street north between the refinery and the terminal. Some product impacted the city storm sewer. The spill was reported, refinery crews responded to collect and remove any oil, and looms were put in place to prevent oil from impacting the canal. Fire fighting foam was used to suppress vapors.

D.2.3 HORIZONTAL RANGE OF A SPILL

Secondary containment dikes at the refinery will in almost all cases prevent the horizontal migration of a spill. Attenuations of any spilled material which might escape a diked area would be accomplished through the implementation of spill response activities by: (1) refinery personnel, or if necessary, (2) one or more of the spill response contractors listed in this Plan.

D.2.4 VULNERABILITY TO A NATURAL DISASTER

All storage tanks and ancillary piping are fabricated in compliance with rigorous nationally recognized design specifications. The specifications include wind-load allowances (must withstand minimum 100 mph wind) and recognition of any applicable seismic considerations. These factors minimized the risk of vulnerability to natural disasters, including tornadoes.

In addition to the above referenced factors, it should also be noted that refinery inspections and response drills, as well as Standard Operating Procedures (SOPs), contribute to minimization of spill potential at the refinery.

In the event of an equipment failure resulting in the release of oil, the total quantity of oil which could be discharged, the rate of flow, direction of flow, duration of the spill and the potential for reaching navigable waters would vary depending on the type of equipment failure. Planning volumes, scenarios and trajectories are discussed throughout this section. However, the facility is designed to contain potential spills within secondary containment dikes that surround the bulk oil storage tanks. Although facility experience does not indicate a reasonable potential for equipment failure, the following spill scenarios are considered to be the "worst case" (although not necessarily probable) prediction of an oil spill event for the facility.

D.2.5 POTENTIAL SPILL SCENARIOS

Locations at the refinery or the Remote Terminal that are suspect for medium or high probability for oil release have been protected against discharge to navigable waters and to land. Valve manifolds, sampling outlets, loading and unloading connection points, pumps and similar facilities are located over concrete slabs with curbs to prevent the occasional leaks and spills from getting onto the ground. These occasional leaks would normally be detected before the volumes of spilled material would exceed the containment provided. However, if the leak were to be substantial or otherwise undetected before overflowing the containment systems, then there would be a spill to land.

There are three spill scenario considerations for a Worst Case Discharge:

- Pipeline failure near the storm water drainage canal

  The pipeline carrying crude charge from the Remote Terminal to the refinery crude processing unit passes over the storm water drainage canal. A failure there could discharge 2,000 bbl/hr crude oil. However, a pressure drop or lack of flow would immediately upset the crude processing unit which is monitored continuously. Worst case discharge expectations are approximately 1,000 bbls.

- Largest tank failure at the Remote Terminal

  This would require the failure of the largest tank (Tank 405) as well as its secondary containment. There is no drainage from the Remote Terminal to navigable waters. However, a suspected wetland area that is totally within Tesoro property would potentially be impacted.

- Largest tank failure at the Refinery

  This would require the failure of the largest tank (Tank 268) as well as its secondary containment with heavy wet weather conditions during a major earthquake. The tank contents would be trapped and contained within the trapout areas along the storm water drainage canal.

A summary of potential spills is presented in **TABLE D.1**.

TABLE D.1
SUMMARY OF POTENTIAL SPILLS

Incident	Cause	Potential Loss	Containment	Probability	Severity
Bulk Tank Overfill	Rundown Piping Lineup	(b) (7)(F) [redacted]	Dike Area	Low	Moderate
Bulk Tank Rupture	Structural Failure	[redacted]	Dike Area	Low	Substantial
Bulk Tank Leak	Corrosion	[redacted]	Dike Area	Medium	Slight
Additive Tank Overfill	Tender Miscalculation	[redacted]	Concrete Curb	High	Slight
Additive Tank Rupture	Structural Failure	[redacted]	Concrete Curb	Low	Slight
Additive Tank Leak	Corrosion	[redacted]	Concrete Curb	Medium	Slight
Truck Load Overfill	Overfill Detect Failure	[redacted]	Drainage Collection System	Medium	Slight
Loading Equipment Failure	Structural Failure	[redacted]	Drainage Collection System	Low	Moderate
Truck Compartment Leak	Drain Open or Broken	[redacted]	Drainage Collection System	Medium	Slight
Truck Compartment Rupture	Accident or Structural Failure	[redacted]	Drainage Collection System	Low	Slight
Pump Leak	Seal, Gasket Failure	[redacted]	Concrete Pad and Curb	Medium	Moderate
Pump Rupture	Shock, Materials Fail	[redacted]	Concrete Pad and Curb	Low	Substantial
Piping Leak	Corrosion, Joint Gasket	[redacted]	None	Medium	Moderate
Piping Rupture	Structural Damage	[redacted]	None	Low	Moderate
Process Vessel Leak	Corrosion	[redacted]	Concrete Curb	Medium	Slight
Process Vessel Rupture	Structural Failure	[redacted]	Concrete Curb	Low	Substantial
Railcar Tank Leak	Drain Open or Broken	[redacted]	Drainage Collection System	Medium	Slight
Railcar Tank Rupture	Accident or Structural Failure	[redacted]	Drainage Collection System	Low	Moderate

The terms “Probability” and “severity” have been used in the context of spills within the facility, not a discharge to navigable waters or to impact environmentally sensitive areas. Even in the worst case scenarios there is “low” probability and “slight” severity of impacting environmentally sensitive areas.

D.3 VULNERABILITY ANALYSIS

The vulnerability analysis addresses the potential effects (i.e., to human health, property, or the environment) of an oil spill originating from the facility. The refinery is located in a predominantly residential/industrial area. This vulnerability analysis

(b) (7)(F)

[redacted]

(b) (7)(F)

[redacted]

D.3.8 ENDANGERED FLORA AND FAUNA

The endangered flora and fauna that may be potentially impacted by a discharge originating at the facility include Ute ladies' tresses orchid, Canada lynx and June sucker. USFWS and applicable state agencies will be contacted for information regarding endangered species.

D.3.9 PREVAILING WIND DIRECTION

The predominant wind direction is from the north. Winds are typically calm in the morning and build to an average of 15 mph in the afternoon. Windsocks are located throughout the refinery to indicate current wind direction. Steam plumes are another indicator of wind direction.

D.3.10 RECREATIONAL AREAS

The recreational areas immediately surrounding the refinery and remote terminal include the Rose Park Golf Course, Rose Park. Any evacuation efforts for these areas will be coordinated with the local emergency assistance agencies (police department, fire department, etc.). The media could also be used to issue public warnings if appropriate.

D.3.11 TRANSPORTATION ROUTES (AIR, LAND, AND WATER)

The terminal is located along 900 North, approximately one (1) mile east of Interstate Highway 15, and less than one (1) mile west of Highway 89. Salt Lake City International Airport is approximately four (4) miles west of the terminal.

(b) (7)(F)

[redacted]

D.3.13 OTHER AREAS OF ECONOMIC IMPORTANCE

Due to the close proximity of the terminal to the Salt Lake industrial area, a spill from the facility could potentially cause road closures, as well as impact nearby economically important areas. As described below, response actions will focus on preventing spilled material from reaching economically important areas.

In the event of a spill or other emergency event which could have the likelihood of affecting any of the above referenced locations, at a minimum the following steps would be taken:

1. The appropriate public-emergency response-public health facilities/entities would be notified.

2. For a facility/residence/business etc. which is occupied, appropriate emergency response/public health entities would be advised to warn these facilities, and recommend evacuation as necessary.

3. In the case of an environmentally sensitive area, the proper public agencies are advised, and recommended to take proper protective actions.

D.4 RESPONSE PLANNING AND STANDARDS

D.4.1 DESCRIPTION OF A SMALL SPILL INCIDENT

This hypothetical scenario involves a leakage from a hose fitting in the truck rack area resulting in a spill of approximately 2,000 gallons of diesel fuel onto the concrete surface. The time of the spill is 08:32 hours, and the release is immediately detected by the driver who is in attendance.

During a routine truck loading, a hose fitting fails and diesel fuel pours from the hose at the truck rack. The driver hits the emergency shutdown switch which immediately stops the fuel transfer. An employee witnesses the spill and further isolates the leak by closing valves to the truck rack. The employee then notifies the Refinery ERC. The Refinery ERC assumes the role of Incident Commander, and implements the refinery's initial response procedures in accordance with the OSCP.

The spill occurs on a cold winter morning with snow on the ground. The temperature is 33°F, with winds from the NW at 7 mph. The forecast is for a sunny day, high 36°F, with winds increasing to 10-15 mph.

The sequence of events following this hypothetical small spill are described below.

TABLE D.2
POTENTIAL EVENTS FOR A SMALL SPILL

Elapsed Time from Small Spill (hours)	Potential Events
0.0	• The spill is detected, and the leak is halted. The employee immediately notifies the Refinery ERC who assumes the role of Incident Commander (IC).
0.3	• The IC establishes a command post at the marketing office. • The spill site is secured to keep unauthorized personnel away from the site of the spill. • The extent of the spill is determined to be approximately 2,000 gallons, and is fully contained within the truck rack area. • All sources of ignition are eliminated in the truck rack area. • The IC initiates response procedures as specified in **SECTION 2** of the OSCP. • The Immediate Response Team (IRT) is notified and mobilized.
0.8	• Using a hand held meter, it is determined that the atmospheric vapors do not exceed 10% of the Lower Explosive Level. Thus, it is safe to work in the spill site. • The IC ensures responders are equipped with proper personal protective equipment (PPE). • The IC notes that the majority of the spill has entered the truck rack's drain which leads to the oil/water separator. The IC determines that the drain's capacity is adequate to temporarily contain the amount of diesel fuel released. • To ensure that no additional diesel fuel migrates out of the truck area during cleanup, sorbent pads are placed around the truck rack area. • Using the water hose at the truck rack, the responders wash remaining spilled material into the truck rack drains. • A contractor is then called to steam clean the concrete, thus washing any residual diesel fuel into the drain.
2.5	• The contractor arrives with the steam cleaner and the begins to wash the residual diesel fuel from the truck rack area into the drain. • Repair of the hose fitting begins.
4.5	• Cleanup is completed. • The TST arranges for the removal of the collected diesel from the oil/water separator in accordance with established procedures. • The hose fitting is repaired.
7.0	• The Refinery ERC convenes an incident summary meeting with refinery employees and transport drivers. The objectives of the meeting are to determine what could have been done to prevent the incident and how response/cleanup activities could have been improved.
7 Days	• Written reports are submitted to Tesoro and applicable agencies.

D.4.2 DESCRIPTION OF A MEDIUM SPILL INCIDENT

This hypothetical scenario involves a gasket failure in the manifold area near the pump house, resulting in a spill of approximately 10,000 gallons of gasoline. The gasoline sprays both inside and outside of the manifold secondary containment. The time of the spill is 10:52 hours, and the release is immediately detected by refinery personnel.

The spill occurs on a sunny spring morning. The temperature is 55°F, with winds from the NW at 7 mph. The forecast is for a warm sunny day, high 70°F, and winds increasing to 10-15 mph.

During a transfer of gasoline from Tank #242, a gasket in the manifold area fails and begins to spray gasoline. The gasoline spray falls within the manifold secondary containment system, as well as on the surrounding soil. A refinery employee witnesses the spill and contacts the Operations Supervisor who quickly closes the tank valve, isolating the spill. However, due to line pressure, the gasket continues to spray gasoline until the remaining line pressure has been bled off.

The Operations Supervisor then notifies the Refinery ERC of the spill. The Refinery ERC assumes the role of Incident Commander, and implements the refinery's initial response procedures in accordance with the OSCP.

The sequence of events following this hypothetical medium spill are described below.

TABLE D.3
POTENTIAL EVENTS FOR A MEDIUM SPILL

Elapsed Time from Medium Spill (hours)	Potential Events
0.0	• The spill is detected and isolated. However, the gasket continues to spray until the line pressure has been bled off. An employee immediately notifies the Refinery ERC who assumes the role of Incident Commander (IC). • The IC establishes a command post at the Administration Building. • The site is secured to keep unauthorized personnel away from the spill.
0.5	• The line pressure drops and gasoline is no longer being sprayed. • The gasoline has overflowed the curbed manifold containment area, and spilled onto the surrounding soil. • All sources of ignition are eliminated in the manifold area. • The IC makes the notifications as specified in **SECTION 3** of the OSCP. • The refinery fire department arrives. After consulting with the IC, the fire department decides to spray foam on the spill to reduce the potential for fire/explosion. • The Immediate Response Team (IRT) is notified and mobilized. • The response contractors are notified, and mobilize in response to the spill.
0.8	• The extent of the spill is determined to be approximately 10,000 gallons. • Using a hand held meter, it is determined that the atmospheric vapors do exceed 10% of the Lower Explosive Level. Thus, it is safe to work in the spill site. • The IC ensures responders are equipped with proper personal protective equipment (PPE).
1.3	• With foam now sprayed, the IRT begins cleanup operations. Collection/recovery trenches and sorbent material is utilized to recover as much free product as possible. • It is evident that a significant volume of the gasoline spilled on the soil has been absorbed into the ground or evaporated.
4.7	• The contracted response team arrives with a vacuum truck, and joins the cleanup operations. • The vacuum truck continues recovery of pooled free product in the manifold area and soil.
11.0	• All free product has been recovered, loaded into transport trucks, and will be returned to the refinery for reprocessing. • The fire department demobilizes. • It is determined that the contaminated soil needs to be excavated to prevent migration of contamination. Contaminated soils are to be stored in covered bins pending treatment or disposal. Using a direct-reading instrument, clean soils will be differentiated from contaminated soils. Confirmation samples will later be submitted to a laboratory for hydrocarbon analysis.
11.2	• The spill response contractor is instructed by the IC to conduct the soil excavation. The response contractor orders the delivery of excavation equipment, storage bins, and light towers to the site.
15.5	• The excavation equipment and light towers arrive. • The light towers are erected to enable nighttime excavation. • Excavation begins.
36.0	• The contractor has completed the excavation and stockpiling of contaminated soils. Approximately 1,000 cubic yards of soil were excavated and Tesoro arranges for backfill soils to be delivered and placed the following day.
60.0	• The Refinery Manager convenes an incident summary meeting with refinery employees. The objectives of the meeting are to determine what could have been done to prevent the incident and how response/cleanup activities could have been improved.
1 Month	• Written reports are submitted to Tesoro and applicable agencies.

D.4.3 DESCRIPTION OF A WORST-CASE DISCHARGE INCIDENT

(b) (7)(F)

[redacted]

TABLE D.4 POTENTIAL EVENTS FOR A WORST CASE DISCHARGE SPILL	
Elapsed Time from Worst Case Discharge (hours)	**Potential Events**
0.0	• A(b) (7)(F) [redacted] of crude oil. The release surges over the secondary containment berm. • Alarm systems indicate a problem at the remote terminal. An employee is dispatched to investigate the problem.
0.2	• The spill is discovered by an employee. The employee immediately notifies the Refinery ERC who assumes the role of Incident Commander (IC). • The Refinery Employee notes that the spill has entered the drainage canal and is flowing north toward the lift station. The employee suggests to the IC that earthmoving equipment may be necessary to form a barrier in the drainage canal.
0.3	• The IC instructs a recon team from the refinery fire department to track the extent of the spill. • The IC begins to make the notifications as specified in **SECTION 3** of the OSCP. • The IC notes the POTW has water intakes from the drainage canal downstream of the spill site. The IC notifies the POTW to ensure the lift gate remains closed. The IC also notifies other intake facilities of the oil spill, and requests they shut down their intakes or otherwise insure that they do not consume contaminated water. • The Immediate Response Team (IRT) is notified and mobilized.
0.5	• The Salt Lake City Fire Department and Police arrive on the site, and help secure the site, keeping unauthorized personnel away from the spill. • In consultation with the Salt Lake City Fire Department, the IC determines that due to the flow direction, and low flashpoint, evacuation of the terminal is not necessary. • Using a hand held meter, it is determined that the atmospheric vapors do not exceed 10% of the Lower Explosive Level. Thus, it is safe to work in the spill site. • The Salt Lake City Fire Department determines that only the immediately surrounding area of local residents need to be evacuated for public safety. • The IC establishes a command post at the remote terminal. • The IC ensures responders are equipped with proper personal protective equipment (PPE). • IC requests contract personnel with an excavator at the Refinery to respond to the remote terminal.
0.8	• The IRT begins to deploy 350 feet of containment boom in the drainage ditch. • The recon team reports to the IC that the spill has entered the drainage canal, and reached the lift station to the north. Because the valves are closed at lift station, the spill has not traveled downstream past the lift gate, and is now backflooding the drainage ditch to the south. • The recon team reports that oil which has not entered the drainage canal has pooled throughout the adjoining lowland areas to the south. • The recon team also reports that a small amount of oil has spread overland to the west and entered the Jordan River. • The IC splits the IRT into two subteams – Team A and Team B. • The IC instructs Team A to deploy containment boom: (1) in the drainage canal at the POTW lift station, (2) in the drainage canal at upstream locations near Dupont Avenue, and (3) in the Jordan River downstream of the spill site. • The IC instructs Team B to use the sandbags and other containment materials stored at the remote terminal to contain the oil from the site and surrounding areas. • The fire department requests additional sandbags from the Salt Lake City Public Works

TABLE D.4
POTENTIAL EVENTS FOR A WORST CASE DISCHARGE SPILL

Elapsed Time from Worst Case Discharge (hours)	Potential Events
	Department.
1.2	• Earthmoving equipment arrives and construction of an underflow earthen dam begins by excavating earth from outside the canal and placed inside the canal just north of Dupont Avenue. • Incident Command is transferred from the Refinery ERC to the Refinery Manager.
2.5	• Local contractors begin to arrive and join Team A and Team B in containment efforts. • The earthen underflow dam north of Dupont Ave is complete. Some oil has migrated upstream past the earthen dam, but the slight current in the drainage canal is now moving oil downstream to the underflow dam. • The IC instructs the Operations Supervisor to make tankage available for recovered product. • Vacuum trucks are used at the earthen dam and Jordan River to recover oil. • The Unified Command releases a press statement to the media
3.0	• The contractors initiate recovery of the pooled oil recovered in the drainage canal and Jordan River using pumps and skimmers and transferring recovered oil directly to the storage tanks at the remote terminal. • The recon team reports that the majority of the spill is contained in the ponded lowland and adjacent areas already identified. The majority of oil in the drainage canal is contained between the lift station and the earthen dam. However, some oil has migrated upstream of the earthen dam.
5.0	• Additional contracted response teams continue to arrive. They join the ongoing efforts of Team A and Team B. • Team A reports that oil is now reaching the furthest deployed containment boom from the spill site in the Jordan River. • The IC instructs Team A to deploy additional boom as necessary to protect environmental sensitive areas. • Team B continues recovery efforts from the pooled areas at the site. • Tesoro makes arrangements for local residences for lodging and care of animals.
10.0	• The Unified Command holds a press conference, and fields questions from the media and public.
12.0	• Darkness is approaching. • Portable light towers are deployed at the recovery areas around the remote terminal. • Recovery at the remote terminal and drainage canal sites continues through the night. Operations at the Jordan River are limited to boom monitoring. • As a precautionary measure, Team B has constructed additional barriers to prevent the runoff from the site to spread to surrounding areas. • The spill is effectively contained at the terminal, drainage ditch and Jordan River. • The Tier 1 requirement has been fulfilled. • The Incident Action Plan for the next operational period is submitted to the Unified Command and approved.
24	• Recovery efforts continue at the site. • Shoreline cleanup operations at the Jordan River and drainage canal begin. • It is determined that the contaminated soil at the remote terminal needs to be excavated to prevent migration of contamination. Contaminated soils are to be stored in covered bins pending treatment or disposal. Using a direct-reading instrument, clean soils will be differentiated from contaminated soils. Confirmation samples will later be submitted to a laboratory for hydrocarbon analysis.

TABLE D.4 POTENTIAL EVENTS FOR A WORST CASE DISCHARGE SPILL	
Elapsed Time from Worst Case Discharge (hours)	**Potential Events**
	• Additional equipment arrives and is deployed throughout the day.
36	• The Tier 2 requirement has been fulfilled.
60	• Cleanup operations at the river have been reduced to daylight hours, and will likely last several more days. • Containment boom is still in place. Sorbent materials are changed on a daily basis, or as needed. • Efforts to recover free product has been completed. • Remediation of soils at the remote terminal and surrounding lowland areas has begun, and will likely last several months. • The remote terminal is now in partial operation. • The Tier 3 requirement has been fulfilled.
1 month	• Members of the Unified Command convene with Tesoro's response team, Environment, Health and Safety Department, and refinery employees for an incident summary meeting. The objectives of the meeting are to determine what could have been done to prevent the incident and how response/cleanup activities could have been improved. • Written reports are submitted to Tesoro and applicable agencies.

D.5 VERIFICATION OF WORST CASE DISCHARGE AND REQUIRED RESPONSE RESOURCES

D.5.1 VERIFICATION OF WORST-CASE DISCHARGE

Worst Case Discharge Worksheet
Multiple-Tank Facilities

a) Are all aboveground oil storage tanks or groups of aboveground oil storage tanks at the facility without adequate secondary containment?

__X__ NO ______ YES

b) If the answer is no, calculate the total aboveground oil storage capacity of tanks without secondary containment. If all aboveground oil storage tanks or groups of aboveground oil storage tanks at the facility have adequate secondary containment, ENTER "0" (zero).

__0__ GAL

c) Calculate 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, plus the production volume of the well with the highest output, PLUS THE VOLUME FROM QUESTION (b).

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

D.5.2 VERIFICATION OF PLANNING VOLUMES – EPA WORST-CASE DISCHARGE

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

TABLE D.5
WORKSHEET TO PLAN VOLUME OF RESPONSE RESOURCES FOR EPA WORST-CASE DISCHARGE (WCD): GROUP I OIL

PART I BACKGROUND INFORMATION

Step (A) Calculate WCD: (b) (7)(F) [redacted]

Step (B) Oil Group: **I (Gasoline)**

Step (C) Operating Area: **Rivers and Canals**

Step (D) Percentages of Oil:

- (D1) Lost to Natural Dissipation: **80%**
- (D2) Recovered Floating Oil: **10%**
- (D3) Oil Onshore **10%**

Step (E1) On-Water Oil Recovery [Step (A) x (D2)] (b) (7)(F) [redacted]

Step (E2) Shoreline Recovery [Step (A) x (D3)]

Step (F) Emulsification Factor **1.0**

Step (G) On-Water Oil Recovery Resource Mobilization Factor

(G1) - Tier 1	(G2) - Tier 2	(G3) - Tier 3
0.30	**0.40**	**0.60**

PART II ON-WATER OIL RECOVERY CAPACITY

(barrels/day) [Step (E1) x (F) x (G)]

Tier 1	Tier 2	Tier 3
(b) (7)(F) [redacted]	[redacted]	[redacted]

PART III SHORELINE CLEANUP VOLUME

[STEP (E2) X (F)]

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

PART IV ON-WATER RESPONSE CAPACITY BY OPERATING AREA

Tier 1	Tier 2	Tier 3
(b) (7)(F) [redacted]	[redacted]	[redacted]

PART V ON-WATER AMOUNT NEEDED TO BE IDENTIFIED, BUT NOT CONTRACTED FOR IN ADVANCE

[PART II- PART IV]

Tier 1	Tier 2	Tier 3
N/A	**N/A**	**N/A**

TABLE D.6
WORKSHEET TO PLAN VOLUME OF RESPONSE RESOURCES FOR EPA WORST-CASE DISCHARGE (WCD): GROUP II OIL

PART I BACKGROUND INFORMATION

Step (A) Calculate WCD: (b) (7)(F) [redacted]

Step (B) Oil Group: **II (Crude)**

Step (C) Operating Area: **Rivers and Canals**

Step (D) Percentages of Oil:

(D1) Lost to Natural Dissipation: **40%**

(D2) Recovered Floating Oil: **15%**

(D3) Oil Onshore **45%**

Step (E1) On-Water Oil Recovery [Step (A) x (D2)] (b) (7)(F) [redacted]

Step (E2) Shoreline Recovery [Step (A) x (D3)]

Step (F) Emulsification Factor **1.8**

Step (G) On-Water Oil Recovery Resource Mobilization Factor

(G1) - Tier 1	(G2) - Tier 2	(G3) - Tier 3
0.30	**0.40**	**0.60**

PART II ON-WATER OIL RECOVERY CAPACITY

(barrels/day) [Step (E1) x (F) x (G)]

Tier 1	Tier 2	Tier 3
(b) (7)(F) [redacted]		

PART III SHORELINE CLEANUP VOLUME

[Step (E2) x (F)]

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

PART IV ON-WATER RESPONSE CAPACITY BY OPERATING AREA

Tier 1	Tier 2	Tier 3
1,875	**3,750**	**7,500**

PART V ON-WATER AMOUNT NEEDED TO BE IDENTIFIED, BUT NOT CONTRACTED FOR IN ADVANCE

[Part II- Part IV]

Tier 1	Tier 2	Tier 3
(b) (7)(F) [redacted]		

TABLE D.7
WORKSHEET TO PLAN VOLUME OF RESPONSE RESOURCES FOR EPA WORST-CASE DISCHARGE (WCD): GROUP III OIL

PART I BACKGROUND INFORMATION

Step (A) Calculate WCD: (b) (7)(F) [redacted]
(based on largest Group III oil storage tank; none of the tanks are permanently manifolded together; all tanks have adequate secondary containment)

Step (B) Oil Group: **III**

Step (C) Operating Area: **Rivers and Canals**

Step (D) Percentages of Oil:

(D1) Lost to Natural Dissipation: **20%**

(D2) Recovered Floating Oil: **15%**

(D3) Oil Onshore **65%**

Step (E1) On-Water Oil Recovery [Step (A) x (D2)] (b) (7)(F) [redacted]

Step (E2) Shoreline Recovery [Step (A) x (D3)] (b) (7)(F) [redacted]

Step (F) Emulsification Factor **2.0**

Step (G) On-Water Oil Recovery Resource Mobilization Factor

(G1) - Tier 1	(G2) - Tier 2	(G3) - Tier 3
0.30	**0.40**	**0.60**

PART II ON-WATER OIL RECOVERY CAPACITY

(barrels/day) [Step (E1) x (F) x (G)]

Tier 1	Tier 2	Tier 3
(b) (7)(F) [redacted]	[redacted]	[redacted]

PART III SHORELINE CLEANUP VOLUME

[Step (E2) x (F)] (b) (7)(F) [redacted]

PART IV ON-WATER RESPONSE CAPACITY BY OPERATING AREA

Tier 1	Tier 2	Tier 3
1,875	**3,750**	**7,500**

PART V ON-WATER AMOUNT NEEDED TO BE IDENTIFIED, BUT NOT CONTRACTED FOR IN ADVANCE

[PART II**-** Part IV]

Tier 1	Tier 2	Tier 3
N/A	**N/A**	**N/A**

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APPENDIX E RESPONSE TECHNIQUES AND GUIDELINES

This section describes the techniques that can be employed to contain and recover spilled oil. Containment is most effective when conducted near the source of the spill. The feasibility of effectively implementing containment and recovery techniques is generally dependent on the size of the spill, available logistical resources, implementation time, and environmental conditions or nature of the terrain in the spill area.

Aquatic spill containment is primarily conducted through the use of oil spill containment booms whereas skimmers are usually the most efficient means of recovery. Pumps, vacuum systems, and sorbents can also be effective. For terrestrial spills, trenches and earthen berms or other physical barriers are most often used to contain oil migrating on or just beneath the ground surface. Recovery of free oil from the ground surface is best achieved by using pumps, vacuum systems, and sorbents. Containment and recovery techniques are summarized in **TABLE E.3**.

E.1. TERRESTRIAL SPILLS

Containment and recovery of terrestrial spills is best achieved by using an earthen containment berm, trenches, or physical barriers within a natural or man-made drainage course (generally preferable as the oil is already partially contained and concentrated). The presence of existing drainage courses or containment structures is often critical to effective containment of large terrestrial spills as most containment techniques for flat surfaces do not provide a significant amount of storage capacity.

The primary factors influencing terrestrial containment and recovery are:

- Size – Most containment techniques provide limited storage capacity.
- Slope – Berms and barriers are generally less effective on steeper slopes and accessibility may be limited.
- Surface Texture – Rough surfaces with natural ridges and depressions enhance containment and should be taken advantage of whenever possible.
- Substrate Permeability – Highly permeable sediments will allow rapid penetration of oil into the substrate thus complicating containment and recovery.
- Existing Draining Courses – Oil is more easily contained and recovered if it is flowing within, or can be diverted to, existing natural or man-made drainage structures.
- Stormwater Runoff – Runoff generally requires the containment of larger quantities of liquids and complicates oil recovery.
-

E.2 AQUATIC SPILLS

Effective containment and recovery of aquatic spills depends, in part, on the spill circumstances, how quickly the techniques can be implemented, and the prevailing environmental conditions. Regardless of the size of the spill, containment is most effective if conducted at or near the source of the spill before the spill spreads into a large area. The larger the area covered by the spill, the more equipment and manpower will be required. Containment at or near the source is also often associated with thicker layers of oil within the containment booms which, in turn, increases the efficiency of most skimmers.

The prevailing environmental conditions can affect containment and recovery, both in terms of effectiveness and deployment of equipment. In high winds, currents, and waves, equipment deployment is difficult and often unsafe. Wind and currents can add significant tension on containment booms making it difficult to anchor the booms in place, tow them in a catenary or "U" configuration, or connect sections of boom together in the water. Strong currents can also cause entrainment of oil in the water stream flowing beneath the boom resulting in ineffective containment. Wind-generated waves can splash oil over the top of the boom also reducing containment effectiveness.

Selection of an appropriate aquatic containment and recovery technique depends on a number of factors, including:

- Current Speed – Surface currents >1 knot can cause boom failure or entrainment of oil beneath the boom.
- Water Depth – Depths >50 feet can complicate boom anchor placement whereas depths <2 feet can preclude effective boom use. Depths <5 to 10 feet can also preclude the use of larger boats for open water containment.
- Channel Width – Widths >200 to 300 feet will generally preclude using booms to completely contain oil floating in the waterway, particularly if strong currents are present.
- Wave Height – Breaking waves >1 to 2 feet and 0.5 to 1 feet will respectively render most booms and skimmers ineffective.
- Slick Thickness – Recovery effectiveness with pumps/vacuum systems and skimmers decreases with slick thickness becoming relatively ineffective for very thin slicks or sheens.
- Shoreline Access – Obstacles (i.e., rocks, debris, etc.) in the water or within steep or densely vegetated backshores could restrict access and present safety and operational problems.
- Anchor Points – Soft bottom substrates can affect boom anchor placement.

- Safety – High currents, winds, and waves, large obstacles, and other dangerous conditions could present safety hazards and preclude technique implementation.
-

E.2.1 SHORELINE PROTECTION GUIDANCE

Shoreline protection procedures are conducted to prevent oil impact to shoreline and reduce the impact on wildlife. Mechanical methods, such as use of boom and skimmers are the preferred methods. These methods can be used to control or contain floating oil slicks on the water away from marshes. Sorbents are effective on mudflats when placed on the shoreline before oil contacts the shore. Specific shoreline protection and cleanup measures, for areas possibly impacted by a potential spill from the Facility, are discussed in this subsection. **FIGURE E.1** provides information on shoreline protection methods. **FIGURE E.2** lists various response options available for different shoreline environments. Additional information may be obtained from the Area Contingency Plan.

E.2.2 SHORELINE AND TERRESTRIAL CLEANUP

In the event that terrestrial areas do become oiled, cleanup operations should be undertaken to minimize the environmental effects of the oil**.** Before terrestrial and shoreline cleanup plans are implemented they require Unified Command approval. Assessment teams comprised of personnel from the appropriate agencies, Company personnel, and consultants can be utilized to determine the most appropriate cleanup method.

In most instances, cleanup efforts are not subject to the same time constraints as containment, recovery, and protection operations. As a result, better planning and greater attention to detail are possible. The exception is where there is a high probability of stranded oil becoming mobilized again and migrating to previously unaffected areas. In this case, implement cleanup operations as soon as possible. If time does permit, consider the following items in detail:

- Documentation of the location, degree, and/or extent of oil conditions,
- Evaluation of all environmental, cultural, economic, and political factors,
- Selection of optional cleanup technique,
- Mitigation of physical/environmental damage associated with cleanup operations,
- Cost-effectiveness,
- Net environmental benefit assessment.

The shoreline or terrestrial oil conditions can range from those which require immediate and thorough cleanup to lightly oiled areas where no cleanup may be the most environmentally sound option. Factors that influence technique selection and whether or not cleanup will be required include:

- Oil type and amount,
- Sensitivity,
- Substrate or shoreline type,
- Intrusive nature of the candidate techniques,
- Shoreline accessibility,
- Exposure.

Therefore, before initiating cleanup activities, an assessment of the net environmental benefits of a proposed cleanup operation should be performed for all affected shorelines.

Several shoreline and terrestrial cleanup techniques have been developed that include both intrusive and non-intrusive methods. A summary of these techniques is included in **FIGURE E.3 and E.5**.

TABLE E.1
SHORELINE PROTECTION METHODS[2]

ON-WATER	METHOD	APPLICABILITY
EXCLUSION BOOMING	Deployed across or around oil Oil removed from water surface	To protect small bays, harbors, inlets or river mouths Currents less than 0.5 m/s
DIVERSION BOOMING	Deployed at an angle to approaching oil Diverts oil away from sensitive areas	Where currents are greater than 0.5 m/s
CONTAINMENT BOOMING	Deployed around oil Oil removed from water surface	Current less than 0.5 m/s Not applicable for large slicks
ONSHORE	**METHOD**	**APPLICABILITY**
SORBENTS	Applied manually or mechanically to the beach before oil is stranded Oil/sorbent is then removed manually or mechanically	Prevents penetration of oil into substrate Sorbent pads preferable to loose-fiber materials for ease of collection Synthetic products have higher absorption capacity than natural materials Can be recycled and reused Usually a labor-intensive method
SURFACE TREATMENT AGENTS	Applied to shore zone before oil is stranded Prevents oil from adhering to the substrate	Applicability and effectiveness not yet fully assessed May be difficult to apply on long sections of shore Oil must be flushed from the shore and agent removed if it does not degrade naturally
DIKES AND/OR DITCHES	Ditch up to 1.0 m deep dug parallel to shore at upper limit of wave action Sediment removed used to build dike on landward side of the ditch On pebble-cobble beaches can fill ditch with sorbents to collect oil and prevent oil penetration	Prevents oil being washed onto the backshore Can be constructed mechanically along long beach sections Ditch acts as a collector of oil which can be removed with buckets, hand pumps, or vacuum pumps
DAMS	Used for shallow streams where booms cannot be deployed	Acts as a boom for exclusion of oil Can be constructed to allow water to flow through dam
VISCOUS	Applied manually to the beach, rock jetties, etc.	Excellent with heavier oils Can be recycled and reused Reduces penetration into rocks

[2]Breuel, A. 1981. Oil Spill Cleanup and Protection Techniques for Shoreline and Marshland and Marshlands. Park Ridge, New Jersey, Noyes.

TABLE E.2
RESPONSE OPTIONS FOR OIL OR SUBSTANCES WITH PHYSICAL AND CHEMICAL PROPERTIES SIMILAR TO OIL

	PROTECTION					CLEANING/MIXING				REMOVAL/DISPOSAL				ONSHORE DISPERSION				
ENVIRONMENT	DITCHES/DIKES	DISPERSANTS ON WATER	SINKING AGENTS	HERDING/GELLING AGENTS	BOOMS/SKIMMERS	BRACH CLEANING MACHINES	BURNING	MIXING	NATURAL CLEANING	MANUAL REMOVAL	MECHANICAL REMOVAL	VACUUM PUMPING	VEGETATION CROPPING	DISPERSANTS ON CROPPING	HIGH PRESSURE FLUSHING	LOW PRESSURE FLUSHING	SAND BLASTING	STEAM CLEANING
1. SEA GRASS BEDS		x	#	o	+				+	x			x	x		o		
2. MANGROVES		+		o	+		#		o	o	#	o	x	+	x	+		
3. MARSHES				o	+		#		+	#	#	o	x	o	#	+		#
4. SHELTERED TIDAL FLATS				o	+			#	+	o	#	o		x	#	+		
5. RIVER BANKS	o			o	+		x		+	+	o	o				o		
6. OYSTER REEFS				o	+				+			o		x		o		#
7. EXPOSED TIDAL FLATS	o	x		o	+				+					x				
8. DREDGE SPOIL BANKS	o			o	+			o	+	o	o							
9. BAY MARGINS	o			o	+	o		o	+	o	o	+				o		
10. 11. OPEN SAND BEACH	+			o		+	#	o	+	+	+	+		o	#	o		
12. MAN-MADE SHORE				o	+		x		+	o				o	o	o	o	o
13. EROSION SCARPS									+	+	x	+			x	o		
TIDAL INLETS		o		o	+				+									
LAGOONS BAYS			#	o	+				+		o							

KEY: + PREFERRED o OPTIONAL x NOT ADVISABLE # AVOID

TABLE E.3 SUMMARY OF CONTAINMENT AND RECOVERY TECHNIQUES				
TECHNIQUE	DESCRIPTION	PRIMARY LOGISTICAL REQUIREMENTS	LIMITATIONS(1)	POTENTIAL ENVIRONMENTAL EFFECTS
Terrestrial Spills – Containment				
A. Containment/ Diversion Boom	Construct earthen berms ahead of advancing surface spill to contain spill or divert it to a containment area.	Equipment 1 – Backhoe, bulldozer, front-end loader, or set of hand tools. Personnel 4 – 8 workers	• Steep slopes • Porous substrate	• Disturbance to surface soils and vegetation • Increased oil penetration
B. Storm Drain Blocking	Block drain opening with sediments, plastic sheet, boards, etc., and secure to prevent oil from entering drain.	Equipment Misc. hand tools; 1 – Board, plastic sheet, mat, etc. Personnel 1 – 2 workers	• May be advantageous for oil to enter drain • Heavy precipitation	• Increased oil penetration • Oil can spread to other areas
C. Blocking Drains	Construct dam in drainage course/ streambed to block and contain flowing oil. Cover with plastic sheeting.	Equipment 1 – Backhoe, bulldozer, front-end loader, or set of hand tools. Personnel 4 – 6 workers	• Upstream storage capacity • Flowing water	• Increased oil penetration
D. Culvert Blocking	Block culvert opening with plywood, sediments, sandbags, etc. to prevent oil from entering culvert.	Equipment Misc. – Hand tools; Misc. – plywood, sandbags, etc. Personnel 3 – 4 workers	• Upstream storage capacity • Flowing water	• Increased oil penetration
E. Interception Trench/ Barrier	Excavate trench or install barrier ahead of advancing surface/near-surface spill to contain spill. Cover bottom and down-gradient side with plastic.	Equipment 1 – Backhoe, set of hand tools Misc. – plastic sheeting or plywood/ sheet material Personnel 3 – 6 workers	• Slope • Depth to near-surface flow	• Increased oil penetration • Disturbance to surface soils and vegetation
F. Shoreline Containment Booming	Deploy boom around point of oil entry into water and anchor to shoreline on either side.	Equipment 1 – Boat 100 feet – boom (min.) 3 – Anchor systems (min.) Personnel 2 – 3 workers	• Currents > 1 to 2 knots • Waves > 1 to 2 feet • Water depths > 50 feet	• Minor disturbance to substrate at anchor points • Heavy oiling of shoreline within booms and associated impacts

TABLE E.3
SUMMARY OF CONTAINMENT AND RECOVERY TECHNIQUES

TECHNIQUE	DESCRIPTION	PRIMARY LOGISTICAL REQUIREMENTS	LIMITATIONS(1)	POTENTIAL ENVIRONMENTAL EFFECTS
Aquatic Spills – Containment and Recovery				
G. Open Water Containment Booming	Boom is deployed between two boats in a "U" shape in front of approaching slick to contain oil and prevent contact with shoreline.	Equipment 2 – Boats 200 feet of Boom (min.) Misc. – Tow lines, connectors, bridles, etc. Personnel 4 workers + boat crew	• Waves > 1 to 2 feet • High winds • Currents > 2 knots	• No significant effects
H. Narrow Channel Containment Booming	Boom is deployed across channel at an angle to contain floating oil passing through channel.	Equipment 1– Boat, vehicle or winch 1 to 2 Booms (1.2 channel width ea.) 2 to 10 – Anchor systems Personnel 2 – 3 workers	• Currents > 2 to 3 knots • Water depths > 50 feet (anchoring) • Sensitive shorelines	• Minor substrate disturbance at anchor points • Heavy shoreline oiling at downstream anchor point
I. Sorbent Barriers	A barrier is constructed by installing two parallel lines of stakes across a channel, fastening wire mesh to the stakes, and filling the space between with sorbents.	Equipment (per 100 feet of barrier) 1 – Boat 20 – Fence posts 200 feet – Wire mesh 200 sq. feet – Sorbents Misc. – Hand tools, fasteners, support lines, additional stakes, etc. Personnel 2 – 3 workers	• Water depths > 5 to 10 feet • Currents > 0.5 knots • Soft substrate	• Minor substrate disturbance at post and shoreline anchor points • High substrate disturbance if boat is not used
J. Skimmers	Self-propelled skimmers work back and forth along the leading edge of a slick to recover the oil. Booms may be deployed from the front of a skimmer in a "V" configuration to increase sweep width. Portable skimmers are placed within containment booms in the area of heaviest concentration.	Equipment (Self-Propelled) 200 feet – Boom (min.) 2 – Boats Misc. – Tow lines, connectors, bridles, etc. Equipment (Portable) 50 feet – Hoses (min.) 1 – Pump (if required) 500 gallons – Storage (min.) Personnel 4 workers + boat crew	• Waves > 0.5 to 1 foot • High winds • Currents > 2 knots	• No significant effects

(1) In addition to implementation time and accessibility

NOTE: The quantities, type of equipment and manpower shown in this table are based on experience in performing each individual task. Necessary containment/cleanup techniques will be used in the appropriate timeframes. As needed, Tesoro will allow input from response contractors with regard to an evaluation of the scope of cleanup activities and the availability and location of spill response resources.

TABLE E.4
SUMMARY OF AQUATIC PROTECTION TECHNIQUES

TECHNIQUE	DESCRIPTION	PRIMARY LOGISTICAL REQUIREMENTS	LIMITATIONS[1]	POTENTIAL ENVIRONMENTAL EFFECTS
A. Exclusion Booming	Boom is deployed across or around sensitive areas and anchored in place. Approaching oil is excluded from the area.	Equipment (per 500 feet of boom) 1 – Boat 6 – Anchor systems 750 feet – Boom (min.) Personnel 3 workers + boat crew	• Currents > 1 to 2 knots • Waves > 1 to 2 feet • Water depth > 50 feet (anchoring)	• Minor substrate disturbance at anchoring points
B. Diversion Booming	Boom is deployed from the shoreline at an angle towards the approaching slick and anchored or held in place with a work boat. Oil is diverted towards the shoreline for recovery.	Equipment 1 – Boat 3 – Anchor systems (min.) 100 feet – Boom (min.) Personnel 3 workers + boat crew	• Currents > 2 to 3 knots • Waves > 1 to 2 feet • Water depth > 50 feet (anchoring) • Sensitive shorelines	• Minor substrate disturbance at anchoring points • Heavy oiling at shoreline anchor point
C. Deflection Booming	Boom is deployed from the shoreline away from the approaching slick and anchored or held in place with a work boat. Oil is deflected away from the shoreline.	Equipment 1 – Boat 5 – Anchor systems 200 feet – Boom Personnel 3 workers + boat crew	• Currents > 2 to 3 knots • Waves > 1 to 2 feet • Water depth > 50 feet (anchoring) • Onshore winds	• Minor substrate disturbance at anchoring points • Oil is not contained and may contact other shorelines
D. Inlet Dams	A dam is constructed across the inlet or channel using local shoreline sediments to exclude oil from entering inlet. Dam can be covered with plastic to minimize erosion.	Equipment 1 – Backhoe, bulldozer, front-end loader, or set of hand tools 1 – Plastic sheeting roll Personnel 2 – 6 workers	• Water outflow • Inlet depth > 5 feet • Excessive inlet width	• Sediment/vegetation disturbance at borrow areas • Inlet substrate disturbance • Increased suspended sediments • Water in inlet can become stagnant

(1) In addition to implementation time and accessibility.

NOTE: The quantities, type of equipment and manpower shown in this table are based on experience in performing each individual task. Necessary containment/cleanup techniques will be used in the appropriate timeframes. As needed, Tesoro will allow input from response contractors with regard to an evaluation of the scope of cleanup activities and the availability and location of spill response resources.

TABLE E.5
SUMMARY OF SHORELINE CLEAN-UP TECHNIQUES BY SURFACE TYPE

Note: The appropriate government agencies must be consulted prior to implementing shoreline clean-up techniques.

Type of Surface Containing Spill	Recommended Clean-up Techniques	Actions to Avoid
Sand	Use vaccum skimmer and sorbents to clean up pools of free flowing oil. Use shovels to remove and place oiled sand into plastic bags or 55 gallon drums.	Do not let people or equipment travel over oiled sand. Do not bury oil sand.
Pebble or Gravel	If heavily oiled, use water spray and front-end loader to remove oiled material. If lightly oiled, use water spray and detergents to wash oil films off gravel and pebbles.	Do not place oiled gravel or pebbles in streams or offshore areas.
Snow	Use shovels to place oiled snow in 55 gallon drums.	Do not place oiled snow in wetlands or offshore areas. Make sure that drums do not have holes in them.
Concrete or Asphalt	Use vacuum skimmers and sorbents to clean up oil. Wash surface with water. Remove oil between cracks.	
Wetlands	Consult DOE, EPA, or other agencies for permits to work on wetlands. If cleanup will cause excessive damage to wetlands, request agency approval to leave oil in place.	Do not operate vehicles or heavy equipment on wetlands. Do not disturb nesting areas.
Marshes	Use booms to control oil movement. Use a low pressure water spray to herd oil to areas where it can be recovered with skimmers and sorbents. Seek agency input as to whether oil should be left in place to prevent environmental damage that could result from clean-up operation.	Do not block entrance to marsh with berms or dams. Do not use heavy equipment.
Harbors and Streams	Use booms to prevent oil from spreading. Use skimmers to clean up oil slicks.	Avoid creating waves which may cause oil to spread. Do not use dispersants or chemicals to remove oil from water surface.

E.3 CLEANUP TECHNIQUE SELECTION

E.3.1 SHORELINE

In the event the techniques recommended above do not apply to a particular spill situation at the Facility, other techniques should be considered for implementation. The other techniques that may be applicable are generally dependent on the:Oil type.

- Oiling conditions/degree of impact.
- Environmental, safety, and political considerations.
- Unusual circumstances the may be present at the time of the spill.

Therefore, the following guidelines can be used to identify the most appropriate cleanup technique(s) for that situation.

The selection of an appropriate shoreline cleanup technique is primarily dependent on the following factors:

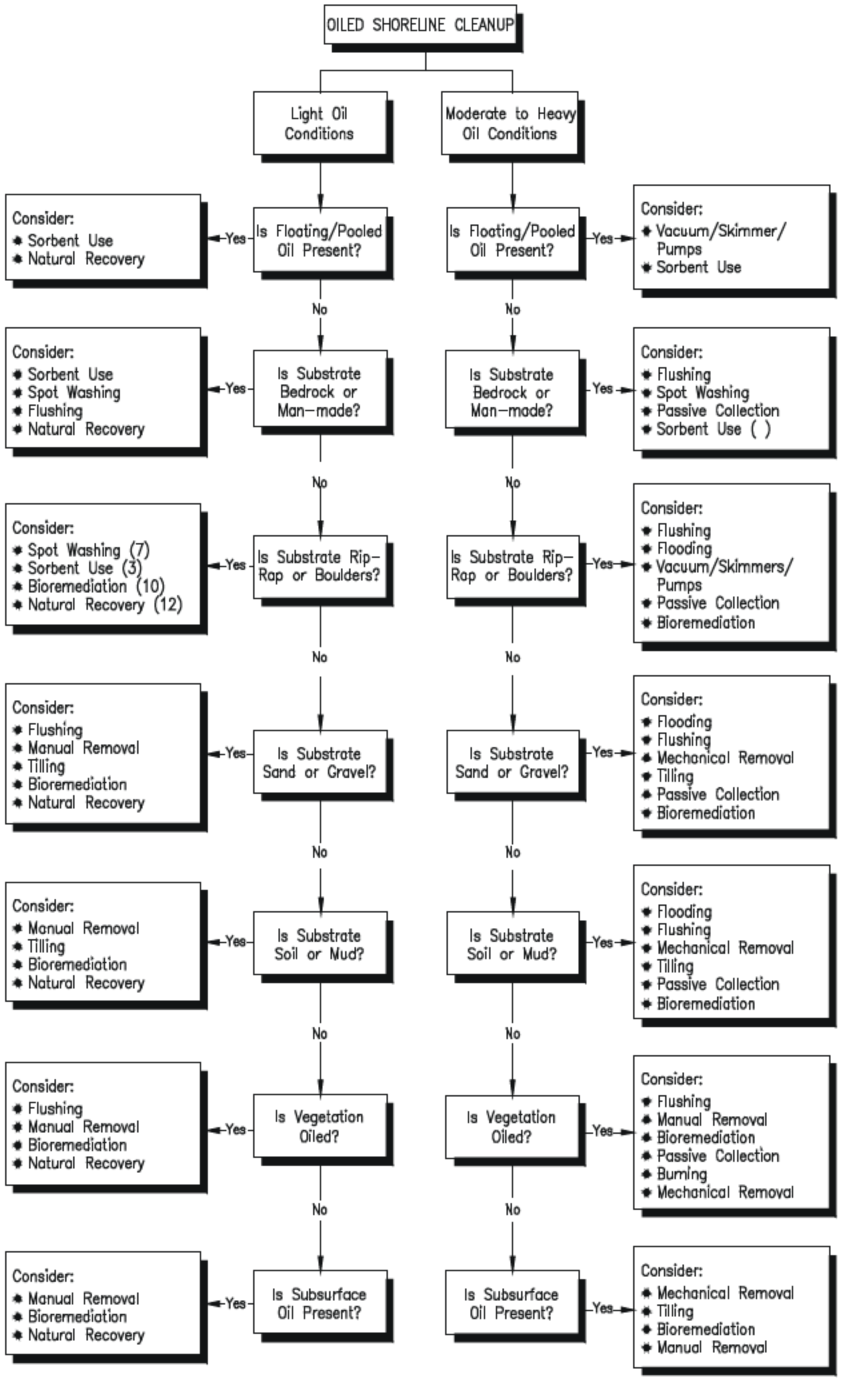
- **Substrate type** - Finer grained sediments typically require different techniques than coarse grained sediments and sediment type can affect trafficability (i.e., ability to traverse the area without losing traction) for heavy equipment.
- **Oil conditions** - Heavier oil conditions and larger areas may require more intrusive or mechanical methods, whereas lighter conditions may not require any form of cleanup.
- **Slope** - Heavy equipment use may not be appropriate on steeper or unstable banks.
- **Shoreline sensitivity** - Intrusive techniques may create a greater impact than the oil itself.
- **Penetration depth** - Significant penetration can reduce the effectiveness of several techniques.

FIGURE E.6 includes a shoreline cleanup technique selection guide.

These figures should only be used as a guide to identify the most appropriate techniques based on a limited number of factors and not a definitive list of techniques that can be used for selected situations.

A number of other factors can influence technique selection and result in techniques other than those identified in the figures as the most appropriate for a given situation. Final selection of cleanup techniques should be conducted in consultation with the state and federal OSCs, the appropriate natural resource trustees, if applicable, and the particular landowner(s) or manager(s) prior to implementation.

FIGURE E.1
SHORELINE CLEANUP TECHNIQUE SELECTION GUIDE



E.4 SENSITIVE AREA PROTECTION

In the event of an aquatic spill at the Tesoro Salt Lake City Refinery, it may be necessary to protect sensitive areas if it appears that open water oil containment and recovery efforts will not be sufficient to control the entire spill. 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, cultural, or human use reasons. Sensitive areas in the vicinity of the Salt Lake City Refinery include: wildlife refuges, water intakes, waterfront industrial facilities, parks or other recreation areas and shorebird and waterfowl use areas.

The common protection techniques are summarized in **TABLE E.5** (complete descriptions are presented in **SECTION 6**). Selected containment and recovery techniques (e.g., open water and narrow channel containment booming and sorbent barriers), can also be used for protection purposes.

E.4.1 IDENTIFICATION OF SENSITIVE AREAS

A description of areas that may be vulnerable to a potential spill from the Salt Lake City Refinery is provided in **SECTION 6** of this OSCP. These include:

- Water intakes
- Residential areas
- Schools
- Medical facilities
- Businesses
- Lakes and streams
- Fish and wildlife
- Wetlands and other sensitive environments
- Endangered flora and fauna
- Recreational areas
- Utilities
- Transportation routes (air, land, and water)

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APPENDIX F INSPECTION/PREVENTION AND MAINTENANCE

F.1 INSPECTION/PREVENTION MEASURES

While many of the more formal inspection procedures are described in the following sections, equipment inspection, problem detection, and incident reporting are part of the daily responsibilities of all operators, maintenance personnel and inspectors.

In moving throughout the refinery accomplishing their other tasks, operators, inspectors and other employees are expected to observe the equipment around them and report to their supervisor or other appropriate personnel any leaks, spills, or conditions that could lead to leaks or spills.

The potential for a piping rupture is minimized by the regular inspection of the overall system, including relief valves. The potential for overfilling a tank is minimized by a variety of safety features in the design and operation, including overfill alarms, tank gauge sensors, and proper training of personnel. Catastrophic tank failure is the most severe form of spill event that can be reasonably anticipated. The likelihood of this type of spill event occurring is minimized by routine inspections and proper maintenance of the tank structure. Spills due to tank roof drain hose failures are minimized by preventative measures, such as always manning drainage operations and never opening roof drain valves while a sump pump is operating. Additionally, all tank blocks drain to the Refinery process sewer system.

The Company conducts self-inspections on all tanks, secondary containment units, and response equipment at the Refinery. This section describes procedures and checklists that are followed.

F.1.1 INSPECTION, TESTING AND MAINTENANCE – STORAGE TANKS

Petroleum storage tanks and transfer equipment, such as pumps and valves, are inspected and tested according to the applicable regulatory requirements and industry standards. Equipment exteriors are inspected on a regular basis. The interior of tanks and pumps are typically inspected during scheduled maintenance activities, when test results indicate a potential problem, or if a leak or malfunction occurs. Integrity testing of tanks and some pipelines is also conducted on a periodic basis and consists of either pressure or non-destructive (ultra-sonic gauging) testing. An operations tank inspection checklist is provided in **FIGURE F.1**.

Storage tanks are hydrotested before a new tank is brought into service or before a tank that has undergone significant repair or modification is brought back into service. Examples of a significant repair are replacement of the floor or addition of new flanged connections. The tank is filled with water and observed for any leakage, especially in the area of the repair(s) or modification(s).

Oil and petroleum product storage tanks are inspected and tested in compliance with the standards provided in API 653, as well as procedures established by the Company. These procedures include both casual and formal inspections. In general, the tank exteriors and surrounding areas are visually inspected whenever oil is transferred in or out of the tank or water is drawn off the bottom. Operations personnel also perform informal inspections (observations) of the tank exteriors during their normal daily activities within the tank farm. The containment dikes are also visually inspected on a quarterly basis for erosion, stability, and adequate protective surface coatings or materials. During the above inspections, any observed conditions that may be considered unsafe or potentially in need of repair will be expeditiously reported to the appropriate supervisor or qualified inspector and recorded in the operating records.

External Inspections

Formal external inspections of storage tanks are conducted by qualified inspectors at intervals not exceeding one-fourth of their remaining life or five years, whichever is less. Tank may be in service during this inspection.

External, in-service ultrasonic gauging (integrity testing) is conducted by qualified inspectors at various intervals based on their corrosion rate and in accordance with API 653, but not exceeding 15 years. Specifically, new tanks are ultrasonically tested five (5) years after being put in service to establish a baseline corrosion rate. If only minimal corrosion is noted, subsequent ultrasonic tests will be scheduled on a maximum of 15-year interval until the corrosion rate increases, at which time the interval will be shortened accordingly. If the rate is unknown or inconsistent, ultrasonic testing intervals will be conducted at a maximum interval of five (5) years. An inspection schedule is maintained by the Inspection and Testing Department and updated after each inspection with the updates based on the associated findings.

All nozzles and some representative sections of the shell and the roof are B-scanned (ultrasonic thickness measurement) during external inspections.

Internal Inspections

Internal inspection and ultrasonic testing are conducted by qualified personnel at intervals based upon corrosion rates and experience with similar service histories, in accordance with API 653 but not exceeding 20 years. Operators do a walk-around Inspection of the tanks once a month. Preventative maintenance on storage tanks includes maintaining the exterior paint in good condition to minimize external corrosion of shell and roof. The floor of the tanks are B-scanned during internal inspection.

Tank Roofs

Inspection of internal and external floating roofs for apparent condition of pontoons, seals, shoes, anti-rotation devices, sumps, drains, electrical grounds, shell wear and grooving, internal stairways, etc. are performed by qualified individuals and at intervals based on the product stored, past inspections, tank age and condition, and other individual variables.

The intervals are also based on past experience that will assure proper maintenance and safe operations.

Whenever the internal or external inspections or testing indicate a change from the tank's original condition, an evaluation of its suitability for continued service is made by competent personnel and documented in accordance with API 653. This evaluation is also conducted when making decisions concerning repairs, alterations, dismantling, relocating, or reconstructing any existing tank. For example, in the event that the ultrasonic testing suggests that an area of a tank has reached the minimum shell thickness, an evaluation will be made as to whether that section of the tank will be repaired, replaced or for widespread damage, if the entire tank will be replaced or decommissioned. The evaluation will be based primarily on ensuring that the tank can be maintained within the original design specifications and on various economic factors.

F.1.2 INSPECTION, TESTING AND MAINTENANCE – PIPELINES

Inspection and testing of pipelines at the Facility vary considerably depending on the location and service of the pipeline. The inspection and testing program focuses on those areas where the consequences of a spill would be greatest, but are designed to comply with, at a minimum, API requirements and guidelines.

Pipelines within the refinery fence line, including those from the tanks to the Remote Tank Farm, those between the production units, etc. are within the refinery drainage system. They are subject to casual inspection every day due to general traffic through the refinery by operators, inspectors, etc. Periodically, more thorough external inspections are conducted and wall thickness is measured in selected spots to detect internal corrosion. Measurements are made at the same locations over time to detect longer-term trends and plan repair and/or replacement. Aerial and ground patrols are conducted according to the refinery's inspection schedule.

Valves and flanges are integral parts of any pipeline and are inspected during observation of the surrounding pipes. Pipelines are kept painted (or coated) to help prevent external corrosion. Nearly all pipelines carrying oil are above ground. Whenever any underground piping is exposed, it is examined and repaired if necessary.

- Pipelines are ultrasonically tested every three (3) years for above ground sections and every five (5) years (ultrasonic or radiographic via inline inspection tool runs of entire pipeline length) for underground sections.
  - Non-DOT line inspections according to the Logistics schedule.
  - DOT lines inspections according to the DOT/Tesoro Integrity Management Plan

- Relief valves are pressure-tested periodically at maximum pipeline working pressure.

Pipelines between the Blending Plant and the storage tanks are generally not tested on a routine basis. If significant repairs are done to any of these line or if a section line is replaced, the line will be pressure-tested prior to being placed in service. Similarly, all new pipeline installation will be pressure-tested prior to being placed in service.

In the event that the ultrasonic or radiographic testing indicates a portion of the pipeline is at, or near, the minimum thickness, a decision will be made on whether to repair or replace the section of line. The decision will be based on the extent of the corrosion damage and economics of each option.

F.1.3 INSPECTION, TESTING AND MAINTENANCE – TRANSFER OPERATIONS

Crude oil is received and oil products are distributed in two ways:
- Two pipelines into the RTF, one transfer line from the RTF to the Refinery
- Tank truck unloading.

Inspections fall into three categories:

- Miscellaneous pumps, piping, valves, sumps, etc.

Transfer Pipelines

Crude oil is received through Chevron/Plains Pipeline and oil products are distributed through Chevron Pipeline. The piping on refinery property that connects storage tanks to these pipelines are inspected and maintained as described in **APPENDIX F.1.2**.

Tank Truck Loading

The loading area is inspected daily (Monday-Friday) for leakage or spills by an operator. An operator observes the loading practices of drivers on a daily (Monday-Friday) basis to assure that they comply with safety and spill prevention procedures. Signs at the rack instruct drivers to report any spills, leaks, or equipment failures to the appropriate refinery personnel. A remote video camera transmits a picture of the loading rack to the Terminal Office.

F.1.4 RESPONSE EQUIPMENT INSPECTION

Using the Emergency Response Equipment List provided in **FIGURE 7.1** and **APPENDIX B** of this Plan, response equipment owned by the Company will be checked for the following in accordance with 40 CFR 112, Appendix F:

1. Inventory (item and quantity);
2. Storage location;
3. Accessibility (time to access and respond);
4. Operational status/condition;
5. Actual use/testing (last test date and frequency of testing); and
6. Shelf life (present age, expected replacement date).

Oil spill cleanup material and emergency response equipment will be inventoried and tested by the Hazmat Team every six months or immediately after a spill. The Refinery ERC will order the supplies and record inspection notes and test results. Equipment records will be kept on file at the Refinery for 5 years. Consult the Refinery ERCfor more information.

F.1.5 SECONDARY CONTAINMENT INSPECTION

Secondary containment units will be evaluated at the same time as tank inspections. During inspection, discrepancies are notes in any of the items and are reported to the proper facility personnel.

F.1.6 INSPECTION AND PREVENTATIVE MAINTENANCE RECORDS

Records are kept and maintained by the Logistics and Inspections Department. The Logistics and Inspection Department maintains an electronic database called Capstone, which contains information on tanks, piping, and vessels and pressure relief valve inspection schedules.

A listing of the records most relevant to oil spill prevention is listed below:

Tanks	• CAPSTONE and electronic equipment schedule • Annual call-up letter • CAPSTONE data • Equipment drawings • CAPSTONE recommendations • Equipment folder
Piping	• CAPSTONE equipment schedule • Equipment drawings • CAPSTONE recommendations

APPENDIX G ACRONYMS AND DEFINITIONS

G.1 Acronyms and Abbreviations

ACP	Area Contingency Plan
AMPD	Average Most Probable Discharge
ANSI	American National Standards Institute
ASTM	American Society of Testing Materials
B&S	Blending and Shipping Division
bbls	Barrels
BFO	Bunker Fuel Oil
bpd	Barrels per Day
bph	Barrels per Hour
CFR	Code of Federal Regulations
CHRIS	Chemical Hazards Response Information System
CWA	Clean Water Act
DOC	Department of Commerce
DOI	Department of Interior
DOT	Department of Transportation
EPA	United States Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FOLR	Fuel Oil Loading Rack
FOSC	Federal On-Scene Coordinator
FR	Federal Register
FWPCA	Federal Water Pollution Control Act
FWS	Fish and Wildlife Service
gal	Gallons
gpm	Gallons per Minute
HAZMAT	Hazardous Materials
HAZWOPER	Hazardous Waste Operations and Emergency Response
HCS	Hazard Communication Standard
HEPA	High Efficiency Particulate Air
HWM	Hazardous Waste Manifest
IC	Incident Commander
ICS	Incident Command System
IMT	Incident Management Team
LEPC	Local Emergency Planning Committee
MMPD	Maximum Most Probable Discharge
MMS	Minerals Management Service (part of DOI)
MSDS	Material Safety Data Sheet
MTR	Marine Transportation-Related Facility
NAICS	North American Industrial Classification System

NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration (part of DOC)
NRC	National Response Center
NRDA	Natural Resource Damage Assessment
NRT	National Response Team
OPA 90	Oil Pollution Act of 1990
ORT	Onsite Response Team
OSC	On-Scene Coordinator
OSCP	Oil Spill Contingency Plan
OSHA	Occupational Safety and Health Act
OSRV	Oil Spill Response Vessel
OWS	Oil Water Separator
PFD	Personal Flotation Devices
PHMSA	Pipeline and Hazardous Materials Safety Administration
PIC	Person in Charge
PPE	Personal Protective Equipment
ppm	Parts per million
PREP	National Preparedness for Response Exercise Program
QI	Qualified Individual
RA	Regional Administrator
RCRA	Resource Conservation and Recovery Act
RRC	Regional Response Centers
RRT	Regional Response Team
SARA	Superfund Amendments and Reauthorization Act
SCBA	Self-Contained Breathing Apparatus
SDWA	Safe Drinking Water Act of 1986
SERC	State Emergency Response Commission
SI	Surface Impoundment
SOSC	State On Scene Coordinator
SPCC	Spill Prevention Control and Countermeasure Plan
SWN	Send Word Now
TSD	Treatment, Storage, and Disposal
TTLR	Tank Truck Loading Rack
TWA	Time Weighted Average
USCG	United States Coast Guard
WCD	Worst Case Discharge

G.2 Definitions

Adverse weather

means weather conditions that make it difficult for response equipment and personnel to clean up or remove spilled oil, and that must be considered when identifying response systems and equipment in a response plan for the applicable operating environment. Factors to consider include significant wave height as specified in appendix E to this part (as appropriate), ice conditions, temperatures, weather-related visibility, and currents within the area in which the systems or equipment is intended to function.

Alteration

means any work on a container involving cutting, burning, welding, or heating operations that changes the physical dimensions or configuration of the container.

Animal fat

means a non-petroleum oil, fat, or grease of animal, fish, or marine mammal origin.

Breakout tank

means a container used to relieve surges in an oil pipeline system or to receive and store oil transported by a pipeline for reinjection and continued transportation by pipeline.

Bulk storage container

means any container used to store oil. These containers are used for purposes including, but not limited to, the storage of oil prior to use, while being used, or prior to further distribution in commerce. Oil-filled electrical, operating, or manufacturing equipment is not a bulk storage container.

Bunkered tank

means a container constructed or placed in the ground by cutting the earth and re-covering the container in a manner that breaks the surrounding natural grade, or that lies above grade, and is covered with earth, sand, gravel, asphalt, or other material. A bunkered tank is considered an aboveground storage container for purposes of this part.

Completely buried tank

means any container completely below grade and covered with earth, sand, gravel, asphalt, or other material. Containers in vaults, bunkered tanks, or partially buried tanks are considered aboveground storage containers for purposes of this part.

Complex

means a facility possessing a combination of transportation-related and non-transportation-related components that is subject to the jurisdiction of more than one Federal agency under section 311(j) of the CWA.

Contiguous zone

means the zone established by the United States under Article 24 of the Convention of the Territorial Sea and Contiguous Zone, that is contiguous to the territorial sea and that extends nine miles seaward from the outer limit of the territorial area.

Contract or other approved means means

(1) A written contractual agreement with an oil spill removal organization that identifies and ensures the availability of the necessary personnel and equipment within appropriate response times; and/or

(2) A written certification by the owner or operator that the necessary personnel and equipment resources, owned or operated by the facility owner or operator, are available to respond to a discharge within appropriate response times; and/or

(3) Active membership in a local or regional oil spill removal organization that has identified and ensures adequate access through such membership to necessary personnel and equipment to respond to a discharge within appropriate response times in the specified geographic area; and/or

(4) Any other specific arrangement approved by the Regional Administrator upon request of the owner or operator.

Discharge

includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping of oil, but excludes discharges in compliance with a permit under section 402 of the CWA; discharges resulting from circumstances identified, reviewed, and made a part of the public record with respect to a permit issued or modified under section 402 of the CWA, and subject to a condition in such permit; or continuous or anticipated intermittent discharges from a point source, identified in a permit or permit application under section 402 of the CWA, that are caused by events occurring within the scope of relevant operating or treatment systems. For purposes of this part, the term discharge shall not include any discharge of oil that is authorized by a permit issued under section 13 of the River and Harbor Act of 1899 (33 U.S.C. 407).

Facility

means any mobile or fixed, onshore or offshore building, property, parcel, lease, structure, installation, equipment, pipe, or pipeline (other than a vessel or a public vessel) used in oil well drilling operations, oil production, oil refining, oil storage, oil gathering, oil processing, oil transfer, oil distribution, and oil waste treatment, or in which oil is used, as described in appendix A to this part. The boundaries of a facility depend on several site-specific factors, including but not limited to, the ownership or operation of buildings, structures, and equipment on the same site and types of activity at the site. Contiguous or non-contiguous buildings, properties, parcels, leases, structures, installations, pipes, or pipelines under the ownership or operation of the same person may be considered separate facilities. Only this definition governs whether a facility is subject to this part.

Farm

means a facility on a tract of land devoted to the production of crops or raising of animals, including fish, which produced and sold, or normally would have produced and sold, $1,000 or more of agricultural products during a year.

Fish and wildlife and sensitive environments

means areas that may be identified by their legal designation or by evaluations of Area Committees (for planning) or members of the Federal On-Scene Coordinator's spill response structure (during responses). These areas may include wetlands, National and State parks, critical habitats for endangered or threatened species, wilderness and natural resource areas, marine sanctuaries and estuarine reserves, conservation areas, preserves, wildlife areas, wildlife refuges, wild and scenic rivers, recreational areas, national forests, Federal and State lands that are research national areas, heritage program areas, land trust areas, and historical and archaeological sites and parks. These areas may also include unique habitats such as aquaculture sites and agricultural surface water intakes, bird nesting areas, critical biological resource areas, designated migratory routes, and designated seasonal habitats.

Injury

means a measurable adverse change, either long- or short-term, in the chemical or physical quality or the viability of a natural resource resulting either directly or indirectly from exposure to a discharge, or exposure to a product of reactions resulting from a discharge.

Incident Management Team

a.k.a. Spill Management Team. The personnel identified to staff the organizational structure identified in a response plan to manage response plan implementation. They will supervise and control all response and clean-up operations. NOTE: The Tesoro IMT is the same as the required Spill Management Team as identified in **CFR 33: 1035(b)(3)(v).**

Loading/unloading rack

means a fixed structure (such as a platform, gangway) necessary for loading or unloading a tank truck or tank car, which is located at a facility subject to the requirements of this part. A loading/unloading rack includes a loading or unloading arm, and may include any combination of the following piping assemblages, valves, pumps, shut-off devices, overfill sensors, or personnel safety devices.

Maximum extent practicable

means within the limitations used to determine oil spill planning resources and response times for on-water recovery, shoreline protection, and cleanup for worst case discharges from onshore non-transportation-related facilities in adverse weather. It includes the planned capability to respond to a worst case discharge in adverse weather, as contained in a response plan that meets the requirements in §112.20 or in a specific plan approved by the Regional Administrator.

Mobile refueler

means a bulk storage container onboard a vehicle or towed, that is designed or used solely to store and transport fuel for transfer into or from an aircraft, motor vehicle, locomotive, vessel, ground service equipment, or other oil storage container.

Motive power container

means any onboard bulk storage container used primarily to power the movement of a motor vehicle, or ancillary onboard oil-filled operational equipment. An onboard bulk storage container which is used to store or transfer oil for further distribution is not a motive power container. The definition of motive power container does not include oil drilling or workover equipment, including rigs.

Navigable waters of the United States

means “navigable waters” as defined in section 502(7) of the FWPCA, and includes

(1) All navigable waters of the United States, as defined in judicial decisions prior to passage of the 1972 Amendments to the FWPCA (Pub. L. 92–500), and tributaries of such waters;

(2) Interstate waters;

(3) Intrastate lakes, rivers, and streams which are utilized by interstate travelers for recreational or other purposes; and

(4) Intrastate lakes, rivers, and streams from which fish or shellfish are taken and sold in interstate commerce.

Non-petroleum oil

means oil of any kind that is not petroleum-based, including but not limited to Fats, oils, and greases of animal, fish, or marine mammal origin; and vegetable oils, including oils from seeds, nuts, fruits, and kernels.

Offshore facility

means any facility of any kind (other than a vessel or public vessel) located in, on, or under any of the navigable waters of the United States, and any facility of any kind that is subject to the jurisdiction of the United States and is located in, on, or under any other waters.

Oil

means oil of any kind or in any form, including, but not limited to fats, oils, or greases of animal, fish, or marine mammal origin; vegetable oils, including oils from seeds, nuts, fruits, or kernels; and, other oils and greases, including petroleum, fuel oil, sludge, synthetic oils, mineral oils, oil refuse, or oil mixed with wastes other than dredged spoil.

Oil-filled operational equipment

means equipment that includes an oil storage container (or multiple containers) in which the oil is present solely to support the function of the apparatus or the device. Oil-filled operational equipment is not considered a bulk storage container, and does not include oil-filled manufacturing equipment (flow-through process). Examples of oil-filled operational equipment include, but are not limited to, hydraulic systems, lubricating systems (e.g. , those for pumps, compressors and other rotating equipment, including pumpjack lubrication systems), gear boxes, machining coolant systems, heat transfer systems, transformers, circuit breakers, electrical switches, and other systems containing oil solely to enable the operation of the device.

Oil Spill Removal Organization

means 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.

Onshore facility

means any facility of any kind located in, on, or under any land within the United States, other than submerged lands.

Owner or operator

means any person owning or operating an onshore facility or an offshore facility, and in the case of any abandoned offshore facility, the person who owned or operated or maintained the facility immediately prior to such abandonment.

Partially buried tank

means a storage container that is partially inserted or constructed in the ground, but not entirely below grade, and not completely covered with earth, sand, gravel, asphalt, or other material. A partially buried tank is considered an aboveground storage container for purposes of this part.

Permanently closed

means any container or facility for which

(1) All liquid and sludge has been removed from each container and connecting line; and

(2) All connecting lines and piping have been disconnected from the container and blanked off, all valves (except for ventilation valves) have been closed and locked, and conspicuous signs have been posted on each container stating that it is a permanently closed container and noting the date of closure.

Person

includes an individual, firm, corporation, association, or partnership.

Petroleum oil

means petroleum in any form, including but not limited to crude oil, fuel oil, mineral oil, sludge, oil refuse, and refined products.

Produced water container

means a storage container at an oil production facility used to store the produced water after initial oil/water separation, and prior to reinjection, beneficial reuse, discharge, or transfer for disposal.

Production facility

means all structures (including but not limited to wells, platforms, or storage facilities), piping (including but not limited to flowlines or intra-facility gathering lines), or equipment (including but not limited to workover equipment, separation equipment, or auxiliary non-transportation-related equipment) used in the production, extraction, recovery, lifting, stabilization, separation or treating of oil (including condensate), or associated storage or measurement, and is located in an oil or gas field, at a facility. This definition governs whether such structures, piping, or equipment are subject to a specific section of this part.

Regional Administrator

means the Regional Administrator of the Environmental Protection Agency, in and for the Region in which the facility is located.

Repair

means any work necessary to maintain or restore a container to a condition suitable for safe operation, other than that necessary for ordinary, day-to-day maintenance to maintain the functional integrity of the container and that does not weaken the container.

Spill Management Team

The personnel identified to staff the organizational structure identified in a response plan to manage response plan implementation. They will supervise and control all response and clean-up operations. NOTE: The Tesoro IMT is the same as the required Spill Management Team as identified in **CFR 33: 1035(b)(3)(v).**

Spill Prevention, Control, and Countermeasure Plan; SPCC Plan, or Plan

means the document required by §112.3 that details the equipment, workforce, procedures, and steps to prevent, control, and provide adequate countermeasures to a discharge.

Storage capacity

of a container means the shell capacity of the container.

Transportation-related and non-transportation-related

as applied to an onshore or offshore facility, are defined in the Memorandum of Understanding between the Secretary of Transportation and the Administrator of the Environmental Protection Agency, dated November 24, 1971, (appendix A of this part).

United States

means the States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, Guam, American Samoa, the U.S. Virgin Islands, and the Pacific Island Governments.

Vegetable oil

means a non-petroleum oil or fat of vegetable origin, including but not limited to oils and fats derived from plant seeds, nuts, fruits, and kernels.

Vessel

means every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water, other than a public vessel.

Wetlands

means those areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include playa lakes, swamps, marshes, bogs, and similar areas such as sloughs, prairie potholes, wet meadows, prairie river overflows, mudflats, and natural ponds.

Worst case discharge

for an onshore non-transportation-related facility means the largest foreseeable discharge in adverse weather conditions as determined using the worksheets in appendix D to this part.

Terrestrial

means relating to land as distinct from air or water.

APPENDIX H CROSS REFERENCE/OPA 90 REQUIREMENTS

H.1 40 CFR 112.20 EPA CROSS REFERENCE

40 CFR Part 112 Appendix F	Description	Tesoro Plan Section/Appendix
1.1	Emergency Action Plan	1, 2, 3
1.1.1	Qualified Individual Information	1, 4
1.1.2	Emergency Notification Phone List	3
1.1.3	Spill Response Notification Form	3
1.1.4	Response Equipment List and Location	7
1.1.5	Response Equipment Testing & Deployment	7
1.1.6	Facility Response Team	4
1.1.7	Evacuation Plan	2
1.1.8	Immediate Actions	2
1.1.9	Facility Diagrams	1, C
1.2	Facility Information	1
1.3	Emergency Response Information	
1.3.1	Emergency Notification Phone List	3
1.3.2	Response Equipment List	7
1.3.3	Response Equipment Testing & Deployment	7
1.3.4	Personnel	4
1.3.5	Evacuation Plans	2
1.3.6	Qualified Individuals Duties	4
1.4	Hazard Evaluation	
1.4.1	Hazard Identification	D
1.4.1.2	Storage Tank Data	C
1.4.2	Vulnerability Analysis	D
1.4.3	Analysis of the Potential for an Oil Discharge	D
1.4.4	Facility Reportable Oil Spill History	D
1.5	Discharge Scenarios	D
1.5.1	Small and Medium Discharges	D
1.5.2	Worst Case Discharge	D
1.6	Discharge Detection Systems	2, C
1.7	Plan Implementation	
1.7.1	Response Resources for Small, Medium, and Worst Case Discharges	D
1.7.2	Disposal Plans	5
1.7.3	Containment and Drainage Planning	C, 7, B
1.8	Self-Inspection, Drills/Exercises, and Response Training	
1.8.1	Facility Self-Inspection	F
1.8.2	Facility Drills/Exercises	A
1.8.3	Response Training	A
1.9	Diagrams	1, 2, C
1.10	Site Security	7
2.0	Response Plan Cover Sheet	1
2.1	General Information	1
2.2	Applicability of Substantial Harm Criteria	Preface
2.3	Certification	Preface
3.0	Acronyms	G

H.2 49 CFR 194 PHMSA CROSS REFERENCE

49 CFR Part 194	Description	Tesoro Plan Section/Appendix
103	Significant and Substantial Harm; Operator's Statement	I
105	Worst Case Discharge	I
107	General Response Plan Requirements	
107 (a)	Resources for a Worst Case Discharge	7, B
107 (b)	Consistency with NCP and ACP	1
107 (c)(1)	Core Plan	
107 (c)(1)(i)	Information Summary	1
107 (c)(1)(ii)	Immediate Notification Procedures	2, 3
107 (c)(1)(iii)	Spill Detection and Mitigation	2, C
107 (c)(1)(iv)	Oil Spill Response Organization	4
107 (c)(1)(v)	Response Activities and Resources	7, B
107 (c)(1)(vi)	Federal, State and local Agencies	3
107 (c)(1)(vii)	Training	A
107 (c)(1)(viii)	Equipment Testing	7
107 (c)(1)(ix)	Drills	A
107 (c)(1)(x)	Plan Review and Update	1
107 (c)(2)	Response Zone Specific Information	I
107 (c)(3)	Response Management System	4
113	Information Summary	I
115	Response Resources	7, B
117	Training	A

APPENDIX I PIPELINE INFORMATION SUMMARY

I.1 NAME AND ADDRESS OF OWNER

Tesoro Logistics Operations LLC
19100 Ridgewood Parkway
San Antonio, Texas 78259

I.2 NAME AND ADDRESS OF OPERATOR

Tesoro Logistics LP
474 W. 900 N.
Salt Lake City, Utah 84103
(801) 521-4900 (24-Hr.)

I.3 DESCRIPTION OF RESPONSE ZONE

Tesoro Logistics Operations LLC operates ten pipelines associated with the Salt Lake City Refinery. All of the pipelines are located within a single response zone, which is located within a seven-mile radius of the refinery. The response zone is located in Salt Lake County in the State of Utah.

I.4 NAME AND PHONE NUMBER OF THE QUALIFIED INDIVIDUAL

The primary Qualified Individuals are:

Dean Anderson
Area Mgr, Logistics Operations, NW
Office: 801-366-2045
Cell: 801-556-1267

The Alternate Qualified Individual is:

Lyle Hansen
Area Superintendent Pipeline & Terminal
Office 801-521-4858

Cellular 801-521-4858

I.5 LIST OF LINE SECTIONS

TABLE I.1
TESORO SALT LAKE CITY PIPELINE LINE SECTIONS

Owner/Operator	Pipe Diameter	Product Carried	Location	Length
Tesoro Logistics, LLC	6 inch	gasoline	from the refinery to the remote terminal	0.89 miles
Tesoro Logistics, LLC	6 inch	distillate	from the refinery to the remote terminal	0.89 miles
Tesoro Logistics, LLC	8 inch	“off test”	from the refinery to the remote terminal	0.89 miles
Tesoro Logistics, LLC	10 inch	crude oil	from the refinery to the remote terminal	0.89 miles
Tesoro Salt Lake City Refinery	10 inch	crude oil	from the Chevron Pipe Line Terminal to the remote terminal	2.61 miles
Tesoro Logistics, LLC	8 inch	crude oil	from the Chevron Pipe Line Terminal to the remote terminal	1.96 miles
Tesoro Logistics, LLC	6 inch	gasoline	from the refinery to the Union Pacific Railroad	7 miles *Out of Service
Tesoro Logistics, LLC	6 inch	distillate	from the refinery to the Chevron Pipe Line Terminal	2.54 miles
Tesoro Logistics, LLC	8 inch	distillate	from the refinery to the Chevron Pipe Line Terminal	2.54 miles
Tesoro Logistics, LLC	16 inch	crude oil	from the Plains Energy to Tesoro’s remote tank farm	2.1 miles

I.6 DETERMINATION OF SUBSTANTIAL HARM

The Tesoro SLC pipelines may cause substantial harm to the environment in the event of a release due to its close proximity to navigable waters of the United States. Sensitive resources exist along the pipeline route. However, the pipeline does not meet the definition in 49 CFR194.103(c) for significant and substantial harm because the total lengths are less than the 10 mile criteria.

I.7 TYPE OF OIL

The product transported through the Tesoro SLC pipelines includes gasoline, distillate fuels (e.g., diesel, jet fuel, etc.), and crude oil. Material Safety Data Sheets (MSDS) are maintained at the refinery and are available at the Tesoro Refinery and on the Tesoro intranet through the Contingency Planning and Emergency Response page at http://gotso/departments/contingency-planning/Pages/default.aspx .

I.8 VOLUME OF WORST CASE DISCHARGE (WCD)

(b) (7)(F)

[redacted]

I.9 CERTIFICATION

The calculated pipeline WCD is significantly less than the largest tank WCD calculated for the refinery according to EPA protocol. The Tesoro Salt Lake Refinery Oil Spill Contingency Plan demonstrates Tesoro's and their response contractors' resources and capability to respond to this much larger WCD within the required tiered response times. Therefore, the available response resources will be more than sufficient to address a pipeline WCD.

Tesoro Logistics LLC certifies that the necessary personnel and equipment will be available to respond, to the maximum extent practicable, to a worst case discharge (8,133 bbls from a pipeline) or a substantial threat of such a discharge.

I.10 RECOGNIZING ABNORMAL OPERATING CONDITIONS

Any situation or condition that deviates from normal operating procedures but does not result in pipeline failure is considered an incident, or an abnormal operating condition. This section describes the proper incident recognition, response, and notification procedures for technical and supervisory staff to address the substantial threat of a worst case discharge.

All operating and maintenance personnel must be capable of recognizing and reporting any conditions or incidents that are abnormal and that could cause the pipeline to operate outside of its design limits resulting in the substantial threat of a discharge. The following sections identify what conditions constitute abnormal operating conditions. It is important that all field personnel understand the importance of these abnormal conditions. For this reason, the following sections also describe what effect the conditions may ultimately have on the pipeline.

I.10.1 UNINTENDED VALVE CLOSURE

Any unintended closure of a valve on an active portion of the pipeline is considered an abnormal condition. The unintended closure of a valve could cause an increase in pressure within the pipeline above the MOP.

I.10.2 UNINTENDED SHUT-DOWN

Any unintended shut-down of the pipeline is considered an abnormal condition. The unintended shut-down of the pipeline could cause abnormally low or high pressures in other portions of the pipeline.

I.10.3 INCREASE IN PRESSURE ABOVE NORMAL OPERATING LIMITS

Any increase in pressure above the normal operating limits of the pipeline is considered an abnormal condition. The increase in pressure could indicate the unintended closure of a valve within the pipeline.

I.10.4 DECREASE IN PRESSURE BELOW NORMAL OPERATING LIMITS

Any decrease in pressure below the normal operating limits of the pipeline is considered an abnormal condition. The decrease in pressure could indicate a line rupture down stream, the unintended shut-down of a pumping unit up stream, etc.

I.10.5 INCREASE IN FLOWRATE ABOVE NORMAL OPERATING LIMITS

Any increase in flowrate above the normal operating limits of the pipeline is considered an abnormal condition. The increase in flowrate could indicate a line rupture down stream, the unintended opening of a valve into another portion of the pipeline, etc.

I.10.6 DECREASE IN FLOWRATE BELOW NORMAL OPERATING LIMITS

Any decrease in the flowrate below the normal operating limits of the pipeline is considered an abnormal condition. The decrease in flowrate could indicate the unintended closure of a down stream valve, the unintended shut-down of a pumping unit, etc.

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

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

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

I.10.9 ANY MALFUNCTION OF EQUIPMENT OR COMPONENT

Any malfunction of equipment or component on the pipeline is considered an abnormal condition. The malfunction of any equipment or component could mean the pipeline is incapable of properly reacting to normal or abnormal operating conditions.

I.10.10 DEVIATION FROM NORMAL OPERATION

Any deviation from the normal operations of the pipeline is considered an abnormal condition. Any deviation from the normal operations could indicate the failure of some portion of the pipeline, an operating error, or the miscommunication of an intended operating event. All of these events could lead to the unsafe operation of the pipeline.

I.10.11 OPERATING ERROR

Any operating error on the pipeline is considered an abnormal operating condition. Any operating error could indicate the miscommunication of an intended operating event, the lack of training of operating personnel concerning the operating procedure, or other personnel related problems.

I.10.12 REPORTING AND RESPONDING TO ABNORMAL OPERATING CONDITIONS

In the event than an abnormal operating condition exists (as described above), Tesoro's operating personnel will report the condition by radio, or telephone, to the Oil Movements Control Board. If the cause of the abnormal operating condition can not be (or has not been) immediately corrected and the integrity and safe operation of the pipeline ensured, the Oil Movements Board Chief, and Shift Supervisor will coordinate with the operating and maintenance personnel to safely shut-down the affected portion of the pipeline. Once the cause has been identified and corrected, and pipeline integrity has been confirmed, the Oil Movements Shift Supervisor will authorize the restart of the affected portion of the pipeline.

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