



**VENOCO, INC**

**SPILL PREVENTION CONTROL AND COUNTERMEASURE  
PLAN**

**VENOCO, INC.  
ELLWOOD ONSHORE FACILITY (EOF)  
GOLETA, CALIFORNIA**

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AUGUST 2015

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PROJECT No. 24215022.00

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**SPCC REGULATORY COMPLIANCE MATRIX**

<b>Compliance Element</b>	<b>40 CFR Part 112 Section</b>	<b>Document Location</b>
General applicability to the Oil Pollution Prevention regulation	112.1	Introduction-Page 3
Definitions	112.2	Applies throughout
Compliance deadlines (facilities operating before 8/16/2002)	112.3(a)	Introduction-Page 3
Compliance deadlines (facilities operational after 11/10/2010)	112.3(b)	N/A
Compliance for onshore or offshore mobile facilities	112.3(c)	N/A
SPCC plan must be reviewed and certified by a licensed professional engineer	112.3(d)	Page 5
SPCC plan must be maintained on-site if facility is normally attended at least four hours per day or at the nearest field office if not so attended. Plan must be available to regulatory agencies for on-site review during normal working hours	112.3(e)	Page 7
Extension of time to prepare and implement SPCC plan	112.3(f)	N/A
Qualified facilities	112.3(g)	N/A
Reporting of spills to the EPA Regional Administrator	112.4(a)	Pages 12-15
Take no action until required	112.4(b)	Appendix B
Reporting of spills to the local / state agencies	112.4(c)	Pages 14-17
Amendment of SPCC Plan by EPA Regional Administrator	112.4(d), (e), (f)	Appendix B
SPCC Plan must be amended whenever there is a change in facility design, construction, operation or maintenance which materially affects the facilities potential for the discharge of oil into or upon the navigable waters of the United States or adjoining shoreline	112.5(a)	Appendix B
SPCC Plan must be reviewed and evaluated at least once every five years from the date such facility becomes subject to this part. If the facility was in operation on or before August 16, 2002, then plan must be reviewed within five years from the date of last review	112.5(b)	Appendix B
Each technical amendment to the SPCC Plan must be certified by a licensed Professional Engineer	112.5(c)	Appendix B
Qualified facilities	112.6	N/A
Plan must include facility diagram; location and contents of containers; type of oil and capacity of each container; discharge prevention measures; discharge drainage controls	112.7(a)(3)	Page 10, 17-19
Countermeasures for discharge discovery, response, and cleanup; methods of disposal; contact list and phone numbers for the facility response coordinator, contractors, and outside agencies; and procedures for reporting and responding to a discharge		Pages 12-15

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<b>Compliance Element</b>	<b>40 CFR Part 112 Section</b>	<b>Document Location</b>
Procedures in your Plan to enable a person reporting a discharge as described in §112.1(b)	112.7(a)(4)	Pages 12-15
Organize portions of the Plan describing procedures you will use when a discharge occurs in a way that will make them readily usable in an emergency, and include appropriate supporting material as appendices.	112.7(a)(5)	Pages 12-15
SPCC plan must indicate where there is a reasonable potential of equipment failure that could lead to an oil spill and to include a prediction of the direction, rate of flow, and total quantity of oil which could be discharged from the facility as a result of each type of major equipment failure	112.7(b)	Pages 10-11
Description of an appropriate containment or diversionary structure	112.7(c)	Pages 17-20
Installation of prevention systems not practical	112.7(d)	N/A
Inspections, tests, and records	112.7(e)	Pages 21
Personnel, training, and discharge prevention procedures	112.7(f)	Page 25
Security (excluding oil production facilities)	112.7(g)	Page 24
Facility tank car and tank truck loading/unloading rack (excluding offshore facilities)	112.7(h)	Page 23
Evaluation for risk of discharge or failure due to brittle fracture or other catastrophe	112.7(i)	Page 21
Conformance with discharge prevention and containment procedures	112.7(j)	Page 16
Qualified oil-filled equipment	112.7(k)	Pages 11
SPCC Plan must meet requirements of Sec. 112.7	112.8(a)	See above
Facility drainage	112.8(b)	Page 22 & Appendix I
Bulk storage containers	112.8(c)	Pages 10, 21
Facility transfer operations, pumping, and facility process	112.8(d)	Page 22
Meet the general requirements for the Plan listed under §112.7, and the specific discharge prevention and containment procedures listed under this section.	112.9(a)	See above
Oil production facility drainage	112.9(b)	Page 22 & Appendix I
Oil production facility bulk storage containers	112.9(c)	Page 10, 21
Facility transfer operations, oil production facility	112.9(d)	Page 22
SPCC Plan Requirements for Onshore Oil Drilling and Workover Facilities	112.10	Page 25
SPCC Plan Requirements for Offshore Oil Drilling, Production, or Workover Facilities	112.11	N/A
Facility Response Plans (FRP)	112.20	N/A
Facility Response Training and Drills/Exercises	112.21	N/A

N/A: NOT APPLICABLE.

## **Introduction**

This Spill Prevention Control and Countermeasure Plan (SPCC Plan) was prepared to comply with the requirements of Part 112, Oil Pollution Prevention of the Code of Federal Regulations Title 40 (40 CFR) and specifically Sec. 112.3 to ensure compliance by the November 10, 2010 deadline for facilities in operation before August 16, 2002. Part 112 establishes the requirements for procedures, methods, and equipment to assist in preventing the discharge of oil or diesel or any material containing oil from entering into or upon the navigable waters of the United States or adjoining shorelines. These procedures, methods, and equipment are referred to as the SPCC Plan. Part 112 applies to those owners or operators of non-transportation-related onshore and offshore facilities engaged in drilling, producing, gathering, storing, processing, refining, transferring, distributing, or consuming oil, diesel or oil products. The applicable facility must also be in a location such that if an oil or diesel spill event occurred, the oil or diesel spill would be expected to reach navigable waters of the United States or adjoining shorelines and the amount of oil or diesel discharged would be in harmful quantities as defined in 40 CFR Part 110.

This plan has been prepared to describe measures implemented by Venoco, Inc. to prevent oil discharges from occurring. If such incident does occur, this plan will aid not only Venoco but also all responding parties in coordinating a safe, effective and timely response in order to mitigate the impacts of such a discharge from the Ellwood Onshore Facility.

**Management Approval/Commitment of Resources**  
**40 CFR Part 112.7**

Venoco, Inc. (Venoco) is committed to maintaining the highest standards for preventing any discharge through the implementation of this SPCC Plan. Therefore this SPCC Plan has received management participation and Venoco management has committed the necessary resources to implement the measures described in this Plan.

Keith Wenal is the Health, Environment & Safety Manager who maintains all needed authority to implement this plan at the Ellwood Onshore Facility.

As indicated below, the authorized facility representative commits all manpower, equipment, and materials necessary to implement this plan and to expeditiously control and remove any quantity of oil or condensate that may be harmful.

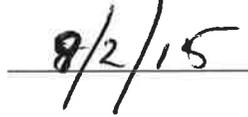
Authorized Facility Representative: Keith Wenal

Title: Health, Environment & Safety Manager

Signature:

A handwritten signature in black ink, appearing to be 'KW', written over a horizontal line.

Dated:

A handwritten date '8/2/15' in black ink, written over a horizontal line.

Ellwood Onshore Facility SPCC Plan

**Professional Engineer Certification**  
40 CFR Part 112.3(d)

The undersigned Registered Professional Engineer is familiar with the requirements of Part 112 of Title 40 of the *Code of Federal Regulations* (40 CFR Part 112) and has visited and examined the facility, or has supervised examination of the facility by appropriately qualified personnel. The undersigned Registered Professional Engineer attests that this Spill Prevention Control and Countermeasure Plan has been prepared in accordance with Good Engineering Practice, including consideration of applicable industry standards and the requirements of 40 CFR Part 112; that procedures for required inspections and testing have been established; and that this Plan is adequate for the facility.

This certification in no way relieves the owner or operator of the facility of his/her duty to prepare and fully implement this SPCC Plan in accordance with the requirements of 40 CFR Part 112.

Harry K. Bishop  
Signature

8/17/15  
Date

Harry K. Bishop  
Name of Professional Engineer

CH 2884  
Registration Number

California  
Issuing State

PE SEAL TO BE PLACED HERE



**Certification of Substantial Harm Determination**  
**40 CFR Part 112.20(e), 40 CFR Part 112.20(f)(1)**

**Facility Name:**           **Venoco, Inc. Ellwood Onshore Facility**

1. 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

2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and 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 within any aboveground storage tank area?  
  Yes    No

3. 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 calculated using the appropriate formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?  
  Yes    No

4. 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 calculated using the appropriate formula) such that a discharge from the facility would shut down a public drinking water intake?  
  Yes    No

5. 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

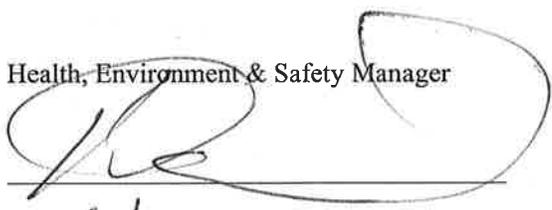
**Certification**

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 this information, I believe that the submitted information is true, accurate, and complete. (See Appendix H for volume calculation.)

Authorized Facility Representative:           Keith Wenal

Title:   Health, Environment & Safety Manager

Signature:



Dated:

9/2/15

**Location of SPCC Plan**  
**40 CFR Part 112.3(e)**

In accordance with 40 CFR Part 112.3(e), a complete copy of this SPCC is maintained at the Ellwood Onshore Facility in the Control Room as well as in the office of the Environmental Coordinator.

## **PART I – GENERAL FACILITY INFORMATION**

40 CFR Part 112.7 (a)(3)

### **Company Information**

Name of Facility:	Ellwood Onshore Facility
Type:	Onshore oil and gas production facility
Date of Initial Operation:	1981 (commissioned)
Location:	7979 Hollister Avenue, Goleta, CA 93117 (See maps in Appendix C)
Physical Directions:	The property is located south of Highway 101 in Goleta, California. From the 101, take Exit 110 and then travel east on Hollister Avenue. Next, turn onto the access road and travel about 0.4 miles west to reach the entrance gate.
Name and Address of Operator:	Venoco, Inc. Attn: Keith Wenal 6267 Carpinteria Avenue, Suite 100 Carpinteria, CA 93013 (805) 745-2259

### **General Facility Description and Operations**

The Ellwood Onshore Facility is located between the shoreline of the Pacific Ocean and Highway 101 north of Goleta in Santa Barbara County, California. The site is located between a golf course to the east and a hotel to the west. Figures 1, 2, and 3 in Appendix C show the location of the facility.

The Ellwood Onshore Facility is a production processing facility. It receives and processes oil, water and natural gas produced on Platform Holly. The topography of the site is flat. See Figure 4 in Appendix C for a topographic map of the area.

Crude oil and produced water emulsion comes into the facility via a 6” pipeline and natural gas comes into the facility via a separate 6” pipeline. The oil and water goes into heat exchangers, then heater treaters, into an H<sub>2</sub>S stripping vessel, then into two 2,000 barrel crude oil shipping tanks. The crude oil is pumped through a metering unit and offsite into the All American Pipeline (AAPL). Produced water separated from the oil goes into a 3,000 barrel waste water tank and is then injected into a wastewater disposal well. See Figures 1 and 2 in Appendix C for the location of Platform Holly.

## ***Ellwood Onshore Facility SPCC Plan***

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Natural gas goes into a chiller unit for removal of natural gas liquids, then is treated in the Lo-Cat Process for removal of sulfur compounds, then goes thru compression, chilling and CO<sub>2</sub> removal processes. The gas is then sold via pipeline. LPG and NGL is stored in pressure vessels and sold via a LPG/NGL loading rack.

There is a control room in the center of the facility where plant operators monitor the facility. Operators staff the facility 24 hours per day.

### **Facility Layout Diagram**

Appendix C includes facility diagrams that show the tank settings and illustrate the capacity and contents of all storage containers and/or tanks with a capacity of 55 gallons or more (see Figures 5 and 6). Also included in Appendix C are maps which show the site topography and the locations of the facilities relative to waterways, roads, and inhabited areas (see Figure 4).

### **Location, Field Characteristics and Proximity to Navigable Waters**

The property is located approximately five miles west of Goleta and 12 miles west of Santa Barbara. A golf course is located immediately to the south and east, undeveloped land immediately to the west, and an access road immediately to the north. A creek located west of the facility (approximately 160 to 240 feet depending upon location) flows into the Pacific Ocean. The Pacific Ocean is approximately 0.1 miles south of the facility. The facility is located in flat terrain at approximately 10 to 20 feet above sea level.

### **Maximum and typical produced fluid processing rates**

The EOF site processes approximately 3,700 barrels crude oil per day, 3,200 MCF gas per day, and 3,000 bbls produced water per day.

### **Installed Sensors and Alarms**

Engineering controls have been installed to prevent discharges and other emergency situations at the EOF. Hundreds of individual alarms, sensors, and safety devices have been installed Throughout the EOF to alert operators of high and low pressure on tanks and vessels, temperature changes, communication system failures, power failures, facility fires, and other critical conditions. If a critical condition arises, an alarm is sent to the control room which is manned 24 hours a day. The alarm must be acknowledged and responded to by an operator immediately. If the alarm is not responded to, the alarm system contacts an operator via cell phone until the alarm is resolved.

## Bulk Storage Inventory and Characteristics

The inventory of bulk oil storage containers, mobile/portable containers, flow-through vessels, and oil-filled operational equipment is provided in the following table<sup>2,3,4</sup>. The tables also list spill situations that could occur within the facility. Maps and site plans are included in Appendix C.

Source: Container and Material Stored	Construction	Major Type of Failure	Total Est. Quantity <sup>1</sup>	Rate (BBL/HR)	Direction of Flow	Secondary Containment
<b>Bulk Storage Containers &amp; Mobile/Portable Containers</b>						
TK-100 Lube Oil Storage Tote Tank (lube oil 30 wt)	Steel	Tank/Vessel Rupture	8.33 bbl (350 gal)	8.33	Into secondary containment	Steel tank
TK-201 Wastewater Tank (crude oil & water)	Steel	Tank/Vessel Rupture	3,000 bbl (126,000 gal)	3,000	Into secondary containment	Concrete walled containment & Fluor cellar
TK-202 Oil Surge Tank (crude oil & water)	Steel	Tank/Vessel Rupture	2,000 bbl (84,000 gal)	2,000	Into secondary containment	Concrete wall & Fluor cellar
TK-203 Oil Surge Tank (crude oil & water)	Steel	Tank/Vessel Rupture	2,000 bbl (84,000 gal)	2,000	Into secondary containment	Concrete wall & Fluor cellar
TK-204 Wet Oil Tank (crude oil & water)	Steel	Tank/Vessel Rupture	2,000 bbl (84,000 gal)	2,000	Into secondary containment	Concrete wall & Fluor cellar
TK-218 Lube Oil Storage Tank (lube oil, 40 wt)	Steel	Tank/Vessel Rupture	8.33 bbl (350 gal)	8.33	Into secondary containment	Steel tank
TK-220 Portable Diesel Fuel Tank (diesel)	Steel	Tank/Vessel Rupture	5.95 bbl (250 gal)	5.95	Into secondary containment	Double walled steel tank
TK-3104 Underground Storage Tank (UST) (diesel)	Fiberglass	Tank/Vessel Rupture	238 bbl (10,000 gal)	238	Into secondary containment	Double walled tank with leak detection
V-213 Therminol Surge Tank (Therminol 66)	Steel	Tank/Vessel Rupture	73.8 bbl (3,100 gal)	73.8	South into storm drain	Storm water sump S-201 & Fluor cellar
Methanol Tanks (4 total)	Steel	Tank	13.1 (550 gal)	13.1	Into secondary containment	Steel secondary containment
GEN-SB Standby Generator (diesel)	Steel	Tank/Vessel Rupture	1.86 bbl (78 gal)	1.86	Into secondary containment	Concrete berm
55-Gallon Drums (30 typical) (new/used lube and hydraulic oil)	Steel	Tank/Vessel Rupture	1.31 bbl (55 gal ea.)	1.31	Into secondary containment	Concrete floor with steel walls
345-Gallon Totes (11 typical) (diesel)	Steel	Tank/Vessel Rupture	8.21 bbl (345 gal ea.)	8.21	Into secondary containment	Concrete floor with steel walls
Pig Drip Pan	Steel	Leak	10 bbl (420 gal)	1	Into secondary containment	Concrete floor with steel walls
Pig Drip Pan	Steel	Leak	1.4 bbl (59 gal)	Less than 1	Into secondary containment	Concrete floor with steel walls
Pig Drip Pan	Steel	Leak	1.4 bbl (59 gal)	Less than 1	Into secondary containment	Concrete floor with steel walls

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Source: Container and Material Stored	Construction	Major Type of Failure	Total Est. Quantity <sup>1</sup>	Rate (BBL/HR)	Direction of Flow	Secondary Containment
<b>Flow-Through Vessels</b>						
E-102 Therminol to Oil Exchanger (Therminol & crude)	Steel	Tank/Vessel Rupture	44 bbl (1,850 gal)	44	North to Sump S-230	Sump S-230, Storm water Sump S-201, Fluor cellar
E-201A Hot Oil to Cold Oil Exchanger (crude oil)	Steel	Tank/Vessel Rupture	190.5 bbl (8,000 gal)	190.5	North to Sump S-230	Sump S-230, Storm water Sump S-201, Fluor cellar
E-201B Hot Oil to Cold Oil Exchanger (crude oil)	Steel	Tank/Vessel Rupture	190.5 bbl (8,000 gal)	190.5	North to Sump S-230	Sump S-230, Storm water Sump S-201, Fluor cellar
E-201C Hot Oil to Cold Oil Exchanger (crude oil)	Steel	Tank/Vessel Rupture	190.5 bbl (8,000 gal)	190.5	North to Sump S-230	Sump S-230, Storm water Sump S-201, Fluor cellar
E-201D Hot Oil to Cold Oil Exchanger (crude oil)	Steel	Tank/Vessel Rupture	190.5 bbl (8,000 gal)	190.5	North to Sump S-230	Sump S-230, Storm water Sump S-201, Fluor cellar
HT-201 Heater Treater (crude oil & water)	Steel	Tank/Vessel Rupture	600 bbl (25,200 gal)	600	South-southeast to storm drain	Storm water sump S-201 & Fluor cellar
HT-203 Heater Treater (crude oil & water)	Steel	Tank/Vessel Rupture	600 bbl (25,200 gal)	600	South-southeast to storm drain	Storm water sump S-201 & Fluor cellar
H-204 Therminol Heater	Steel	Tank/Vessel Rupture	11.9 bbl (500 gal)	500	North to storm drain	Storm water sump S-201 & Fluor cellar
<b>Oil-Filled Operational Equipment</b>						
Transformer (transformer oil)	Steel	Tank/Vessel Rupture	26.9 bbl (1,130 gal)	26.9	West-northwest to storm drain in road near the LPG/NGL rack	Sump S-230, Storm water Sump S-201, Fluor cellar
Transformer (transformer oil)	Steel	Tank/Vessel Rupture	21.2 bbl (890 gal)	21.2	West-northwest to storm drain in road near the LPG/NGL rack	Sump S-230, Storm water Sump S-201, Fluor cellar
Transformer (transformer oil)	Steel	Tank/Vessel Rupture	19.3 bbl (809 gal)	19.3	West-northwest to storm drain in road near the LPG/NGL rack	Sump S-230, Storm water Sump S-201, Fluor cellar
Transformer (transformer oil)	Steel	Tank/Vessel Rupture	14.4 bbl (604 gal)	14.4	West-northwest to storm drain in road near the LPG/NGL rack	Sump S-230, Storm water Sump S-201, Fluor cellar
Transformer (transformer oil)	Steel	Tank/Vessel Rupture	14.4 bbl (604 gal)	14.4	West-northwest to storm drain in road near the LPG/NGL rack	Sump S-230, Storm water Sump S-201, Fluor cellar
Transformer (transformer oil)	Steel	Tank/Vessel Rupture	11.9 bbl (500 gal)	11.9	West-northwest to storm drain in road near the LPG/NGL rack	Sump S-230, Storm water Sump S-201, Fluor cellar

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**Notes:**

<sup>1</sup>Quantity reflects maximum operating capacity of largest vessel or tank and/or assumes 10 minutes for shutdown.

<sup>2</sup>There are no completely buried metallic storage tanks at the facility. The buried diesel tank is fiberglass.

<sup>3</sup>There are no partially buried or bunkered metallic tanks at the facility.

<sup>4</sup>The storage tanks do not have internal heating coils.

## **PART II – SPILL RESPONSE AND REPORTING PROCEDURES**

40 CFR Part 112.7

### **Discharge Discovery and Reporting**

Primary response will be initiated by onsite personnel. Assistance from the local emergency support services and/or oil spill cooperatives will be used as necessary. All discharges of any size shall be reported to the Senior Operations Supervisor immediately who shall be responsible for initiating response operations, ensuring all agency notifications (as applicable), carrying out the control and containment, and ensuring the cleanup of the spill. As necessary, the Senior Operations Supervisor will communicate with the Venoco Sustained Incident Response Team (SIRT) Incident Commander who will provide assistance to effectively respond to the event. Included in Appendix E of this SPCC Plan is the Venoco Spill Notification and Reporting Form – CA Onshore, which contains all information on the spill and will be used when and if notification of any government, state or local agency is necessary. A Government Agency Contact list for reference is included in Appendix G.

#### First Person to Observe the Spill - Duties and Responsibilities

The first person to observe an oil spill would make a rapid assessment of the situation and report immediately to the Senior Operations Supervisor or Person in Charge (PIC). A checklist for the first person to observe the spill is as follows:

- A. Make a rapid assessment of the incident.
- B. Take any appropriate steps which would effectively stop the discharge in a timely manner (5 minutes or less).

#### *Examples include:*

- 1. Close block valves to stop line leaks;
  - 2. Close blow out preventers (BOP's) to stop flow from the well;
  - 3. Stop pumps if a tank is being overfilled;
  - 4. Stop fuel pumps and drain fuel lines if a fueling leak occurs;
  - 5. Shut off electric circuits that might create a fire hazard.
- C. Report to the Senior Operations Supervisor (or PIC):

As quickly as possible, the first person to observe an oil spill should report the following information to the Senior Operations Supervisor (or PIC):

- The time of the incident
- The location of the incident
- Whether the incident caused any injury to personnel

## Ellwood Onshore Facility SPCC Plan

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- The type of fluid/material spilled
- The amount of fluid/material spilled
- The status of the source
- Weather conditions

D. Assist in the response effort as instructed by the Senior Operations Supervisor.

### Senior Operations Supervisor - Duties and Responsibilities

The Senior Operations Supervisor is responsible for ensuring the safety of all personnel, assessing the status of the incident, and initiating response operations including making initial agency notifications.

The Senior Operations Supervisor shall:

- A. Receive an initial report from first person to observe spill and notify 9-1-1 (if an emergency).
- B. Account for all personnel.
- C. Determine whether there is a threat of fire or explosion (See SPECIAL INSTRUCTION 1 Appendix D) and evaluate the risk of H<sub>2</sub>S gas exposure (See SPECIAL INSTRUCTION 2 Appendix D) to ensure safety of personnel. Determine whether an evacuation is necessary.
- E. Assess the magnitude of the oil spill incident, the status of control and response operations and the location and direction of movement. Confirm source of discharge.
- F. Estimate spill volume.
- G. Assist in completing a "Spill Notification and Reporting Form – CA Onshore". (See sample Form located in Appendix E). Make initial agency notifications.
- H. Contact Venoco SIRT IC with Spill Notification and Reporting Form – CA Onshore and provide assessment of situation.
- I. Discuss the response strategy.
- J. Coordinate the on scene response effort.
  - 1. Coordinate equipment deployment operations (contract or in-house).
  - 2. Coordinate containment and recovery operations.
- K. Maintain personal notes of relevant actions and decisions.

### **Major Spills**

On-site personnel should not attempt to control major spills until the appropriate and qualified emergency response staff has arrived at the site. The Senior Operations Supervisor shall deem if contract personnel and/or equipment are required.

## **Contract Cleanup Personnel**

Contract Cleanup Personnel would be responsible for carrying out cleanup operations as directed by the Senior Operations Supervisor. A checklist for Contract Cleanup Personnel is as follows:

1. Obtain briefing from and carry out instructions for the Senior Operations Supervisor and/or HES Coordinator.
2. Maintain radio/phone contact with the Senior Operations Supervisor, as necessary.
3. Obtain protective clothing (i.e., slickers, boots, goggles, etc.), if necessary.

## **Waste Disposal**

Waste material collected from spills will be disposed of, re-used or recycled according to applicable waste law. Free oil and water can be re-introduced into the production streams. Hydrocarbon impacted soil may be taken to hazardous or non-hazardous landfills as appropriate. In the event that the Regional Water Quality Control Board approves the material for beneficial use, it may be used onsite to maintain roads, berms, etc.

**NOTE: OIL SPILL CONTINGENCY PLAN CONTAINS METHOD OF DISPOSAL OR RECOVERED SPILL MATERIALS.**

## **Spill Incident Notification and Reporting Responsibilities**

In the event of an oil spill, proper actions must be taken to accomplish the following:

- Prevent or minimize oil-reaching waterways
- Control the source of the spill
- Make proper notifications internally as well as to government agencies
- Conduct appropriate emergency cleanup actions
- Obtain the necessary information to allow post-incident evaluation

This section describes the notification and reporting requirements to conduct the above tasks.

### Notification Procedure

Any amount of spilled oil reaching a waterway or any land spills of one barrel or greater or any spilled oil outside man-made secondary containment must be reported.

**IN CASE OF AN OIL SPILL EVENT, IMMEDIATELY CONTACT THE SENIOR OPERATIONS SUPERVISOR AT (805) 961-2301 or (805) 455-9666. THE SENIOR OPERATIONS SUPERVISOR WILL MAKE ALL NECESSARY INITIAL NOTIFICATIONS.**

### Contact Person

EOF Office (24 hour)  
Jeff MacDonald, Senior Operations Supervisor  
John Garnett, Environmental Coordinator

### Contact Number

(805) 961-2375  
(805) 961-2301 or (805) 455-9666  
805.745.2170 or 805.765.5450

**The following governmental agencies will be notified as necessary:**

***Ellwood Onshore Facility SPCC Plan***

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1. California Emergency Management Agency (formerly Ca OES) (800) 852-7550
2. National Response Center (800) 424-8802
3. California Department of Fish and Game Office of Spill Prevention and Response (OSPR) (916) 445-0045
4. California Regional Water Quality Control Board Central Coast Regional Office (805) 549-3147

**Other government agencies that may require notification:**

1. California Division of Oil, Gas, & Geothermal Resources (805) 937-7246
2. Local Law Enforcement, Fire, Ambulance 911
3. Santa Barbara County Office of Emergency Services (805) 560-1081
4. Santa Barbara County Petroleum Dept. (805) 934-6128
5. Santa Barbara County A.P.C.D. (805) 961-8800
6. State Lands Commission (805) 685-8502  
(562) 590-5201
7. USEPA Regional Administrator\* (800) 300-2193

\*Note-If an oil spill exceeds 1,000 gallons or 2 spill events of greater than 42 gallons each occur in a 12 month period, the USEPA must be notified in compliance with 40 CFR Part 112.4.

**Oil Spill Response Organizations:**

1. Clean Seas (on-water) (805) 684-3838
2. NRC Environmental (800) 337-7455

**NOTE: SEE THE OIL SPILL CONTINGENCY PLAN FOR ADDITIONAL SPILL REPORTING PROCEDURES AND AGENCY PHONE NUMBERS.**

Record Keeping

Records required by applicable regulations are maintained as specified for compliance. Records are generally to be maintained as follows:

<u>RECORD</u>	<u>LOCATION</u>
Employee Training	7979 Hollister Ave. Goleta, CA 93117
Environmental Permits and Records	7979 Hollister Ave. Goleta, CA 93117
Spill Reports	7979 Hollister Ave. Goleta, CA 93117
Facility Inspections	7979 Hollister Ave. Goleta, CA 93117

## **PART III – SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PROVISIONS**

40 CFR Parts 112.7 and 112.9

### **Potential Discharge Volume, Direction of Flow 112.7(b) and Containment 112.7(a)(3)(iii)**

The table of Bulk Storage Inventory and Characteristics as referenced on page 12 summarizes potential oil discharge scenarios. Other precautions have been taken into account to mitigate any possibilities for discharges such as alarms, inspections, design and materials of construction.

#### Secondary Containment Design, Construction Materials and Volume

In general, the complete facility is configured to minimize the likelihood of a discharge reaching navigable waters. The following measures have been provided:

1. Bulk storage containers are made from materials that are compatible with the materials being stored as well as the conditions of storage such as pressure and temperature.
2. In the event the primary containment fails, the facility has secondary containment in place.
3. The bulk storage container secondary containment and catch basin are sized to contain 150% of the capacity of the largest tank within the containment cell.
4. Rainwater does not drain directly from the facility as sumps (S-230 and S-201) are used to collect drainage from undiked areas.
5. For spill control, the Ellwood Onshore Facility has one emergency response trailer on-site with the following equipment (another trailer is located at the Ellwood Marine Terminal if needed):
  - a. Absorbent pads, 3M, T-156 (4 bales)
  - b. Absorbent boom, 3M, T-270 (20 ft)
  - c. 50-ft sections containment boom, 6"x12" Simplex 18" American Marine
  - d. 6-mil visquene, 20 ft x 100 ft (2 rolls)
  - e. Poly bags, Hefty steel sack (1 case)
  - f. Punt rakes (5)
  - g. Square point shovels (5)
  - h. Eye protection, glasses, and goggles (12)
  - i. PVC rainsuits (6)
  - j. PVC boots and gloves (6 pairs each)
  - k. Duct tape (6 rolls)
  - l. Barrier tape (2 rolls)
  - m. Sledge hammer (1)
  - n. 5-ft metal stakes (4)
  - o. Metal buckets (2)
  - p. Explosion-proof flashlights with batteries (6)
  - q. Fire extinguishers (2)
  - r. Drinking water (2 cases)
  - s. First aid kits (2)
  - t. 3-gallon plastic pans (2)
  - u. 20-gallon plastic tubs (2)
  - v. Simple Green soap (1 quart)

- w. Metal post driver (1)
- x. Box of absorbent pom-poms (1)
- y. Box of Tyvex coveralls (3)
- 6. The following is a list of personal safety equipment available onsite at the EOF. All equipment is inspected and maintained per the manufacturer's recommendations.
  - a. Hard hat
  - b. Steel toe shoes, (oil and chemical resistant soles and heels are required)
  - c. ANSI Z-87 approved safety glasses w/side shields
  - d. Appropriate work gloves (impact resistant unless job requires a different glove, e.g. chemical)
  - e. Seat belts in vehicles
  - f. H2S detector (programmed for 5 ppm 8 hrs & 10 ppm 15 mins) (i.e., direct reading instruments, etc.)
  - g. Hearing protection. High impact noise requires double hearing protection
  - h. Full body harness with double shock absorbing lanyard, if applicable
  - i. Personal flotation device, if applicable
  - j. Appropriate respiratory protection equipment (i.e SCBA), if applicable
  - k. Flame retardant clothing

### Secondary Containment for Bulk Storage

This facility has been engineered to minimize the possibility of discharges impacting adjacent land or reaching navigable waters. Secondary containment for the bulk storage containers is provided by concrete and steel barriers in conjunction with a catch basin (cellar). The volumetric capacity of diked areas and catch basin are sufficient to contain 150% of the volume of the largest tank within the diked area plus sufficient freeboard to allow for precipitation. Details for the berm capacity calculation are provided below:

### Berm Capacity Calculations

#### **TK-201 CONTAINMENT**

The concrete containment is 63' length x 41' 2" width x 2' 6" height.

Inside the berm there is one tank:

1 @ 3,000 bbl (126,000 gal = 16,844 ft<sup>3</sup>) and 30' diameter

Any spill over from the berm would be collected in the Fluor cellar

- a. Berm volume (ft<sup>3</sup>) = (63 \* 41.17 \* 2.5) = 6,484
- b. Volume of tanks inside berm (ft<sup>3</sup>) = (1)( $\pi$ )(15<sup>2</sup>)(2.5) = 1,767
- c. Berm space available (ft<sup>3</sup>) = 6,484 - 1,767 = 4,717
- d. Size of largest tank in berm (ft<sup>3</sup>) = 16,844
- e. Berm free capacity/largest tank volume = 4,717 / 16,844 = 28%
- f. Potential spill over to cellar (ft<sup>3</sup>) = 16,844 - 4,717 = 12,127

#### **TK-218**

The steel containment is 5' length x 5' width x 2' 6" height.

Inside the berm there is one tank:

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1 @ 350 gal (46.8 ft<sup>3</sup>)

Any spill over from the berm would be collected in the Stormwater Sump S-201

a. Berm volume (ft <sup>3</sup> )	= (5 * 5 * 2.5) = 62.5
b. Volume of tanks inside berm (ft <sup>3</sup> )	= 3.67 * 3.67 * 2.5 = 33.7
c. Berm space available (ft <sup>3</sup> )	= 62.5 - 33.7 = 28.8
d. Size of largest tank in berm (ft <sup>3</sup> )	= 46.8
e. Berm free capacity/largest tank volume	= 28.8 / 46.8 = 61.5%
f. Potential spill over to Sump S-201 (ft <sup>3</sup> )	= 46.8 - 28.8 = 18
g. Stormwater Sump S-201 volume (ft <sup>3</sup> )	= 6' 6" OD x 14' = 464.6

### **FLUOR CELLAR**

The cellar is comprised of two sections.

Section 1 is 153' x 37' 2" and 8' 8" deep.

Section 2 is 66' 6" x 38' 1" and 8' 8" deep.

The foundation of the cellar is made of impervious concrete. There is a metal plate within the cellar originally meant for access to a vault box within the cellar. However, access to the vault box is unnecessary for EOF operations, so the plate is bolted closed and sealed with both silicone and a rubber gasket keeping the cellar impervious.

Inside there are six concrete octagons (former vessel supports) that are 5' 5" diameter and 1' 6" high.

Inside the major tanks and vessels are TK-101 (12' diam), V-202 and V-201 that sit on 6' diameter and 1' high octagons. These two vessels are approximately 5' diameter and 21' high.

a. Berm volume (ft <sup>3</sup> )	= (153 * 37.17 * 8.67) + (66.5 * 38.08 * 8.67) = 71,262
b. Volume of six octagons inside berm (ft <sup>3</sup> )	= (6)( $\pi$ )(2.71 <sup>2</sup> )(1.5) = 207.7
c. Volume of three octagons inside berm (ft <sup>3</sup> )	= (3)( $\pi$ )(3 <sup>2</sup> )(1) = 84.8
d. Volume of tanks/vessels inside berm (ft <sup>3</sup> )	= (1)( $\pi$ )(6 <sup>2</sup> )(7.67) + (2)( $\pi$ )(2.5 <sup>2</sup> )(7.67) = 1,168.7
e. Berm space available (ft <sup>3</sup> )	= 71,262 - 207.7 - 84.8 - 1,168.7 = 69,800
f. Size of largest tank at facility (ft <sup>3</sup> )	= 16,885
g. Berm free capacity/largest tank volume	= 69,800 / 16,885 = 413%

### **CHEMICAL STORAGE AREA**

The containment has a concrete floor and steel walls.

Section 1 is 30' 7" x 10' 1" x 10".

Section 2 is 29' 8" x 22' 6".

Inside the containment are 55 gallon drums (7.35 ft<sup>3</sup>), 345 gallon totes (46.12 ft<sup>3</sup>), and pig drip pans 1 @ (56 ft<sup>3</sup>), 2 @ (8 ft<sup>3</sup>)

a. Berm volume (ft <sup>3</sup> )	= (30.58 * 10.08 * 0.83) + (29.67 * 22.5 * 0.83) = 809.9
b. Volume of tanks inside berm (ft <sup>3</sup> )	= (30)( $\pi$ )(1.5 <sup>2</sup> )(0.83) + (11)(3.67 * 3.67) = 324.2
c. Berm space available (ft <sup>3</sup> )	= 809.9 - 324.2 = 484.8
d. Size of largest tank in berm (ft <sup>3</sup> )	= 56
e. Berm free capacity/largest tank volume	= 484.8 / 56 = 865%

### **GENERATOR BERM**

The concrete containment is 13' 2" length x 8' 2" width x 6" height.

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Inside the berm there is one tank:

1 @ 78 gal (10.4 ft<sup>3</sup>)

- |  |                               |
|--|-------------------------------|
| a. Berm volume (ft <sup>3</sup> )                  | = (13.17 * 8.17 * 0.5) = 53.8 |
| b. Volume of tanks inside berm (ft <sup>3</sup> )  | = (12 * 5.17 * 0.5) = 31.0    |
| c. Berm space available (ft <sup>3</sup> )         | = 53.8-31.0 = 22.78           |
| d. Size of largest tank in berm (ft <sup>3</sup> ) | = 10.4                        |
| e. Berm free capacity/largest tank volume          | = 22.78 / 10.4 = 2.19 = 219%  |

### **METHANOL STORAGE TANKS**

The steel containment is 20' length x 5' width x 4' 7" height.

Inside the berm there are four 550 gallon tanks measuring 3' 5" x 4':

1 @ 550 gal (73.5 ft<sup>3</sup>)

- |  |                                   |
|--|-----------------------------------|
| a. Steel Containment volume (ft <sup>3</sup> )             | = (20 * 5 * 4.58) = 458           |
| b. Volume of largest tank inside berm (ft <sup>3</sup> )   | = 550 gallon = 73.5               |
| c. Tank Displacement inside containment (ft <sup>3</sup> ) | = (3) * (3.41 * 4 * 4.58) = 187.4 |
| c. Containment space available (ft <sup>3</sup> )          | = 458 - 187.4 = 270.6             |
| d. Size of largest tank in berm (ft <sup>3</sup> )         | = 73.5                            |
| e. Berm free capacity/largest tank volume                  | = 270.6 / 73.5 = 3.68 = 368%      |

### **Other Spill Prevention Measures**

The following are additional spill prevention measures in place at the facility:

Flowlines and intra-facility gathering lines are provided with either general or secondary containment. Aboveground pipelines that are not within sized secondary containment are provided with general containment based on the facility grading. Site grading of all fluids outside secondary containment areas creates gravity flow to drains which send fluids to Sump S-230. Fluid collected in S-230 is pumped to Stormwater Sump Vessel S-201. Any overflow from S-201 flows into the Fluor cellar.

- There are no effluent treatment systems that discharge to waterways or other water treatment systems.
- Visible discharges of oil from containers shall be promptly corrected to prevent further leakage, including leakage from seams, gaskets, piping, pumps, valves, rivets, bolts, etc. Any accumulations of leaked oil in diked areas shall be promptly removed.
- Mobile or portable oil storage containers used at the facility are positioned to prevent discharges of oil from the facility. Adequate secondary containment must be provided through the use of berming or drainage to a catch basin.

#### **Bulk Storage Containers Overflow Prevention 112.9(c)(4)**

The tank settings are designed with fail-safe systems to prevent discharge, as follows:

- The tanks are constructed of welded steel with fixed roofs.
- Stored crude oil is transferred to the Ellwood Marine Terminal by pipeline and does not rely on crude oil loading racks or tank trucks.

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- The tanks are protected with pressure and vacuum relief devices to prevent against structural damage and/or failure.
- Tanks are externally painted to prevent atmospheric corrosion.
- Tanks are of appropriate construction and materials for materials stored.
- Tank settings include one of the following devices to prevent discharges:
  1. Container capacity which ensures tank overflow is prevented
  2. Overflow equalizing lines between containers so that a full container can flow to an adjacent container
  3. Vacuum protection adequate to prevent container collapse during a pipeline run or other transfer of oil from the container
  4. High liquid level sensors that generate and transmit an alarm signal

### **Inspections, Tests and Records 112.7(e)**

This Plan outlines procedures for inspecting the facility equipment in accordance with SPCC requirements. Records of inspections performed as described in this Plan and signed by the appropriate supervisor are part of this Plan, and are maintained with this Plan at the facility for a minimum of three years. The reports include a description of the inspection procedure, the date of inspection, if drainage of rainwater was required, and the inspector's signature.

#### **Tank Inspection Methods, Procedures and Record Keeping**

Four types of facility inspections are conducted as follows:

1. Daily shift inspections of the facility equipment are conducted by the operators. The inspections include visual checks of all process vessels, storage tanks, pumps, and visible piping for leakage or potential failure (recorded in the operations log and kept as part of the facility records).
2. Monthly facility inspections are performed by the qualified operators. Records of these inspections are kept as part of the facility records. The monthly inspection includes the following:
  - a. Observe all storage tank components for defects, including seams, gaskets, piping connections, valves, sightglasses, tank foundations, leak detection systems, and equalizing lines.
  - b. Observe containment structures to assure they are in proper condition (checking for cracks, holes, etc.) and that they are constructed as specified in the SPCC Plan. Containment structures that appear inadequate are noted.
  - c. Observe circulating, transfer, and shipping pumps for leaks.
  - d. Observe heater treaters and other vessels for conditions that could result in spills.
  - e. Check communication systems and alarms.
  - f. Check Emergency Response trailer for readiness.
  - g. STI SP001 inspections of Category 1 shop fabricated bulk storage tanks and portable containers.
3. The Senior Operations Supervisor or his designee will conduct formal tank setting inspections every six months. The inspection will include visually inspecting the aboveground tanks and appurtenant piping for integrity of seams, bolts, gaskets, valves, connecting pipeline, etc. for indications of deterioration, leaking, or accumulation of oil inside the containment area. Hydrostatic testing (or equivalent) will be performed if necessary to confirm tank integrity. Additionally, all secondary containment devices including berms will be inspected to ensure that they are intact and will provide the required containment. Formal inspections are documented on inspection logs. Leaks or potential failures found during the inspection are noted on the log. A visual inspection log is included in Appendix F.
4. Flow through vessels are emptied and inspected every five years.

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5. In accordance with API 653 field erected bulk storage tanks are emptied and inspected every 10 years. Inspections are completed by a certified API 653 inspector.

Note, the 10,000 underground storage tank (UST) is checked once a month by a certified UST operator.

Facility inspections are conducted routinely and any unusual conditions or problems following a sudden change in atmospheric temperature, leaks around tank foundation, and seam failures. Tank walls are inspected internally when a tank is removed from service for maintenance that requires tank to be emptied.

Anytime a field-constructed tank undergoes a repair, alteration, reconstruction, or a change in service that might affect the risk of a discharge or failure due to brittle fracture, the container is evaluated using appropriate means i.e. visual, ultra-sonic testing, magnetic particle testing, hydrotesting, etc.

### **Drainage of Rainwater from Secondary Containment into a Storm Drain or an Open Watercourse**

Containment cells containing any effluent that may be discharged into navigable waters are observed frequently for indication of possible upsets which may cause an oil spill event. Fluid collected in the Stormwater Sump Vessel (S-201) is visually checked for oil content. Clean water is discharged by pump to the ocean outfall line. The pump must be manually activated by a plant operator. If oil is present in the sump vessel, a vacuum truck removes the oil and puts the oil into the production system.

## **Facility Transfer Operations, Pumping, and In-plant Process**

### **Corrosion Protection for Aboveground Pipelines**

All above-ground valves and pipelines (including flange joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces) are checked by operating or contractor personnel on a routine basis.

### **Corrosion Protection for Buried Pipelines**

- A. Buried oil pipelines within the facility are wrapped and coated to reduce exterior corrosion. Chemical treatment is utilized as necessary to minimize internal corrosion.
- B. Cathodic protection is provided for pipelines if determined to be necessary.
- C. When a section of buried line is exposed for any reason, it shall be examined for deterioration and corrective action taken as indicated by the magnitude of any damage.

## Ellwood Onshore Facility SPCC Plan

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### Pipeline Connection and Supports

- A. Pipeline terminal connections within the facility are capped or blind-flanged and marked as to origin, if the pipeline is not in service or is in standby service for extended periods.
- B. Pipe supports are designed in accordance with industry standards to minimize abrasion and corrosion and allow for expansion and contraction.

### Flowline Maintenance

The facility has a maintenance program in place to ensure that flowlines and intra-facility gathering lines and associated valves and equipment are compatible with the type of production fluids, their potential corrosivity, volume, and pressure, and other conditions expected in the operational environment. Each day, these lines are visually inspected and operating pressures are checked for abnormal conditions. These lines also have secondary containment in place (concrete barriers and a catch basin) to prevent discharges. Corrective actions or repairs are performed promptly to stabilize and remediate any accumulations of oil discharges associated with flowlines, intra-facility gathering lines, and associated appurtenances. A record of flowline repairs will be maintained as work requests. The number and frequency of repairs will dictate the need for replacement of flowlines.

### Facility Tank Car and Truck Loading/Unloading Rack

The facility's LPG/NGL loading rack does not handle oil and is not applicable to the SPCC regulation.

### Diesel Transfer

The 10,000 gallon diesel underground storage tank (UST) is periodically refilled by a tanker truck using a flexible transfer hose. Diesel fuel is then transferred from the diesel UST into totes that are used by the offshore crane.

### Vehicle Warning

Vehicle warning and collision prevention measures for above ground piping include limited facility access controlled by a locked gate. Only personnel who are approved for access to the facility are admitted. Posts and guards rails are present when necessary to minimize damage to aboveground piping.

## **Facility Drainage**

- A. Drainage from diked storage areas is controlled as follows:

The secondary containment area for Tank TK-201 is equipped with a drain that connects to Stormwater Sump Vessel S-201.

The secondary containment area for Tanks TK-202, TK-203, and TK-204 is equipped with a drain that connects to Stormwater Sump Vessel S-201.

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The secondary containment area for the Heater Treaters and Therminol Surge Tank V-213 is equipped with a drain that connects to Stormwater Sump Vessel S-201.

- B. Drainage from un-diked storage areas is controlled as follows:

The site grading provides gravity flow of all fluids to Sump S-230. Fluid collected in S-230 is pumped to Stormwater Sump Vessel S-201. Any overflow from S-201 flows into the Fluor cellar.

- C. Fluid collected in the Stormwater Sump Vessel (S-201) is visually checked for oil content. Clean water is discharged by pump to the ocean outfall line. The pump must be manually activated by a plant operator. If oil is present in the sump vessel, a vacuum truck removes the oil and puts the oil into the production system.

- D. Field drainage ditches, road ditches, and oil traps, or skimmers, if such exist, are inspected at regularly scheduled intervals for accumulation of oil as follows:

Field drainage ditches are observed in daily operator coverage, and monthly inspections are conducted of oil traps, dikes, sumps, field drainage ditches, and skimmers in each production area. Any spills found are physically cleaned by means of a vacuum truck, backhoe, excelsior absorbent, and shovel. If the source of the oil is not immediately apparent, the origin is traced and corrective action taken.

- E. The facility is located in an area not subject to periodic flooding.

## **Security**

The perimeter of the facility is fully fenced and the site is manned at all times. There are two entrance gates into the facility, 1) A pedestrian gate is located on the northeast perimeter and is locked at all times, 2) A vehicle gate is located on the north perimeter and access is controlled 24/7 by operators in the control room. Other security measures taken at the facility include:

- A. Facilities handling, processing or storing hydrocarbons are fenced, walled or gated.
- B. Any valves that permit direct outward flow of a tank's contents are locked closed when in non-operating or non-standby status.
- C. Only authorized personnel, properly trained in the operation of the facility, are approved to operate equipment controls or valves.
- D. Starter controls on all oil pumps are accessible only to authorized personnel or operated by automatic control. Pumps in non-operating status are locked/tagged in the off position.
- E. Oil pipelines that are not in service are capped or blank-flanged.
- F. The facility has adequate lighting to allow discovery of discharges during hours of darkness and to aid in preventing acts of vandalism.

## **Oil Drilling and Workovers**

Currently, there is only one well at the EOF (produced water disposal well). The steps listed below will be followed in the event that any oil drilling or workover equipment is used at the EOF.

- A. Mobile drilling or workover equipment, when present and in service, are positioned so as to best prevent spilled oil from reaching navigable waters.
- B. Catch basins or diversion structures are used, as necessary, during drilling or workover operations to intercept and contain spills of fuel, crude oil, or oily drilling fluids.
- C. A blowout preventer (BOP) assembly and well control system is installed before drilling below any casing string and as required during workover operations. The BOP assembly is capable of controlling any expected wellhead pressure. Casing and BOP installations conform to state regulations.

## **Personnel, Training, and Discharge Prevention Procedures**

The Senior Operations Supervisor has been designated as the point of contact for all discharge prevention and response at this facility. The Senior Operations Supervisor also conducts the operations/safety meetings at least once a year but more frequently as needs arise, according to the Senior Operations Supervisor's discretion. Every person who enters this facility (contractor or employee) are advised that every inhabitant must at all times act in a manner to preserve life and property, and prevent pollution of the environment by the proper use of the facility's prevention and containment systems. No pollutant, regardless of the volume, is to be disposed of onto the ground or allowed to drain into the ground or water.

- A. Personnel are properly instructed in the following:
  - Operation and maintenance of equipment to prevent oil discharges.
  - Applicable pollution control laws, rules, and regulations.
- B. Instruction procedures for staff include:
  - That all personnel understand the procedures described in this SPCC Plan and are informed of the requirements under applicable pollution control laws, rule and regulations.
  - Employees receive supervised on-the-job training, and introduction to field equipment and facility operations.
  - Trained on risks associated with potential exposure to hydrogen sulfide (H<sub>2</sub>S).
- C. Instruction procedures for contractors include:
  - That all contract personnel are familiar with the facility operations, safety procedures, and spill prevention and control procedures described in this Plan prior to working at the facility.

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- All contractors working at this facility receive and/or are advised as to where a copy of this Plan is located.

**APPENDIX A**

**SPCC PLAN DISTRIBUTION LIST**

**ELLWOOD ONSHORE FACILITY  
SPILL PREVENTION CONTROL  
AND COUNTERMEASURE PLAN**

**August 2015 Distribution List**

**VENOCO, INC.**

7979 Hollister Ave.

Goleta, CA 93117

*Copy Number 1, 2, and 3 of 8*

**VENOCO, INC.**

6267 Carpinteria Ave., Suite 100

Carpinteria, CA 93013

*Copy Number 4 of 8*

**CALIFORNIA DIVISION OF OIL, GAS AND GEOTHERMAL  
RESOURCES DISTRICT NO. 3**

5075 S. Bradley Rd., Suite 221

Santa Maria, CA 93455-5077

*Copy Number 5 of 8*

**SANTA BARBARA COUNTY FIRE DEPT. / FIRE PREVENTION  
DIVISION / HAZARDOUS MATERIALS UNIT**

225 Camino del Remedio

Santa Barbara, CA 93110

*Copy Number 6 of 8*

**SANTA BARBARA COUNTY PETROLEUM DEPT.**

624 West Foster Road, Suite C

Santa Maria, CA 93455

*Copy Number 7 of 8*

**SCS TRACER ENVIRONMENTAL**

2601 Skyway Drive, Suite A1

Santa Maria, CA 93455

*Copy Number 8 of 8*

**APPENDIX B**

**SPCC REVIEW REQUIREMENTS & CHECKLIST**

## **SPCC PLAN REVIEW REQUIREMENTS AND CHECKLIST**

The regulation requires that the SPCC plan be reviewed for possible revisions every five years from date of preparation or anytime there is a facility change (equipment, operations, maintenance, etc.) which materially affects the facility's potential for the discharge of oil into navigable waters of the United States or adjoining shorelines. The plan must be amended not later than six months after the five year review or the facility change occurred. (40 CFR Part 112) Additionally, the SPCC Plan must be modified if so requested by the Regional Administrator or other regulatory agency.

To maintain the SPCC Plan current, it is recommended that this checklist be reviewed at least annually.

### **NON-TECHNICAL AMENDMENTS**

- Non-technical amendments are not certified by a Professional Engineer.
- Examples of changes include, but are not limited to, phone numbers, name changes, or any non-technical text change(s).

### **TECHNICAL AMENDMENTS**

Technical amendments are certified by a Professional Engineer (§112.5(c)).

Examples of changes may require amendment of the Plan include, but are not limited to, commissioning or decommissioning containers; replacement, reconstruction, or movement of containers; reconstruction, replacements, or installation of piping systems; construction or demolition that might alter secondary containment structures; changes of product or service; or addition/deletion of standard operation or maintenance procedures related to discharge prevention measures. It is the responsibility of the facility to determine, and confirm with the regulatory authority as necessary, what constitutes a technical amendment. The preamble of the rule states that an amendment is required only "when there is a change that materially affects the facility's potential to discharge oil" (67 FR 47091).

An amendment made under this section will be prepared within six (6) months of the change and implemented as soon as possible but not later than six (6) months following preparation of the amendment.

Technical Amendments affecting various pages within the plan can be P.E. certified on those pages, certifying those amendments only, and will be documented on the log form below.

### **MANAGEMENT REVIEW**

Management will review this SPCC Plan at least each five (5) years and document the review in the log below (§112.5(b)).

**PLAN REVIEW CHECKLIST**

	YES	NO <sup>1</sup>
Have all spill events been properly recorded and agencies notified?	_____	_____
Have there been any oil spill deployment exercises held?	_____	_____
Is the oil spill equipment in working order?	_____	_____
Has the oil spill plan been modified?	_____	_____
Have the inspections required by this plan been made?	_____	_____
Has the appropriate documentation for the above records been filed?	_____	_____
Have the training requirements referenced in this plan been complied with?	_____	_____
Has the appropriate documentation for training been filed?	_____	_____
Have there been organizational changes and/or phone number changes?	_____	_____
Have there been any facility modifications or additions?	_____	_____

**I HAVE REVIEWED THE ABOVE QUESTIONS AND HAVE ANSWERED THEM TO THE BEST OF MY KNOWLEDGE.**

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signed

\_\_\_\_\_  
Title

<sup>1</sup> The SPCC Plan may need to be re-certified. Check the requirements of 40 CFR Part 112.

**RECORD OF SPCC PLAN REVISIONS**

**THIS IS A NEW PLAN AS OF MAY, 2010.  
FUTURE REVISIONS WILL BE LISTED BELOW.**

REVISION	PAGE/DESCRIPTION	DATE OF REVISION	PREVIOUS REVISION
Rev. #1	<p>Pg. 8 – AAPL replaced EMT for oil shipping from site.</p> <p>Pg. 9 – Description of sensors and alarms added</p> <p>Pg. 10 – Added 4 methanol tanks to Bulk Storage Inventory table</p> <p>Pg. 14 –Added John Garnett to contact list</p> <p>Pg. 17 – PPE list added</p> <p>Pg. 19 - Methanol secondary containment calculations added</p> <p>Appendix C – Added Figures 5, 7, &amp; Table 1.</p> <p>Appendices I-M added</p>	4/22/2015	4/27/2010
Rev. #2	<p>Pg. 2 – Revised Regulatory Matrix, removed 112.8 reference, replaced “applies throughout” with sub-sections for 112.7 and 112.9</p> <p>Pg. 6 – Revised checkbox formatting</p> <p>Pg. 10 - Added Pig Drip Pans (3 total)</p> <p>Pg. 19 – Description of work performed on metal plate within cellar to keep containment area impervious.</p> <p>Pg. 19 – Added pig drip pans to the Chemical Storage Area containment calculation.</p> <p>Pg. 20 General containment for aboveground piping described</p> <p>Pg. 21-22 – API 653 and STI SP001 standards added to inspection information.</p>	8/11/2015	4/22/2015

**APPENDIX C**

**MAPS, SITE PLANS, EQUIPMENT LIST**

**FIGURE 1 Facility Location – Regional (Aerial View)**



Scale (Miles) 0 ————— 3.95

FIGURE 2 Facility Location – Regional (Schematic)

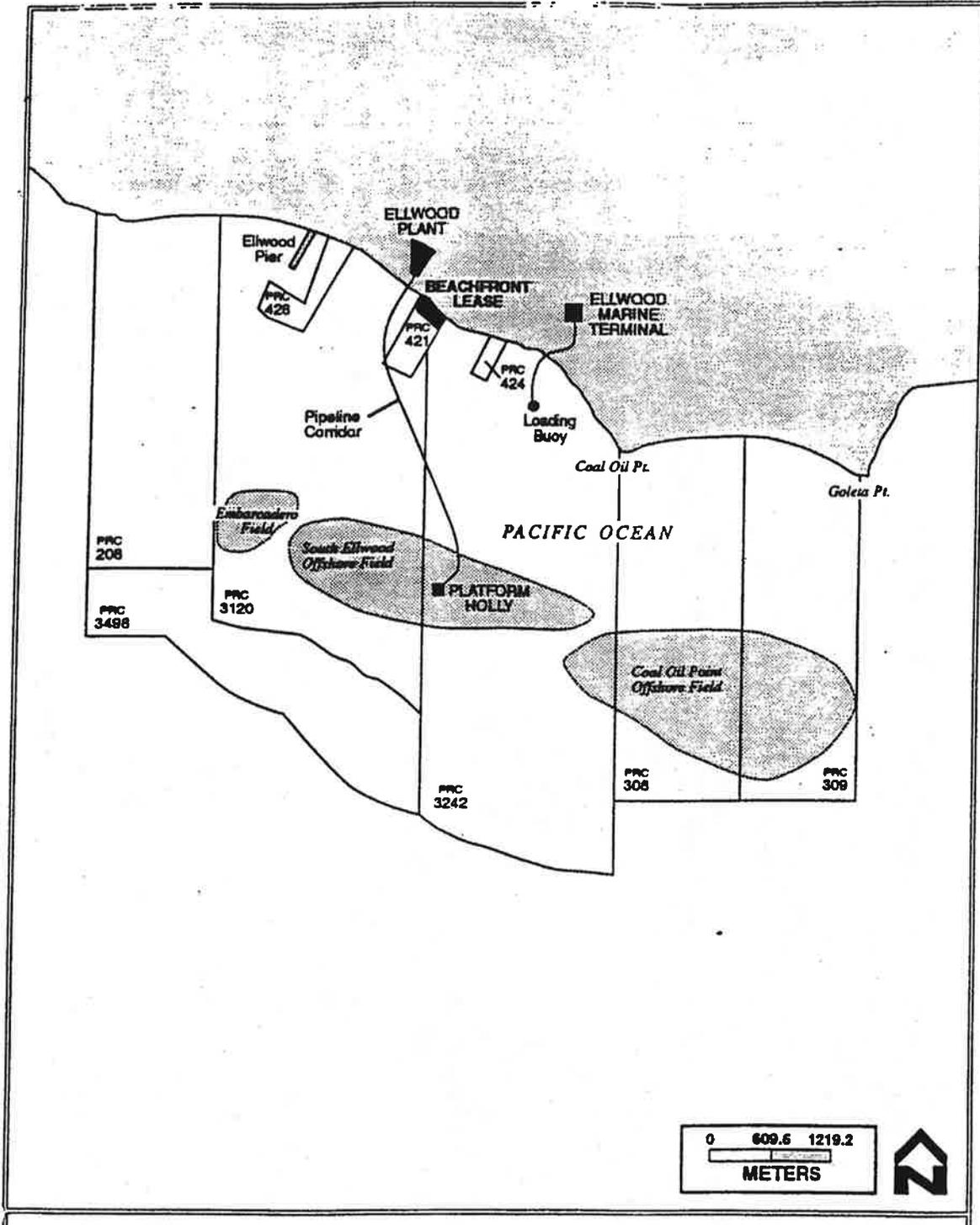
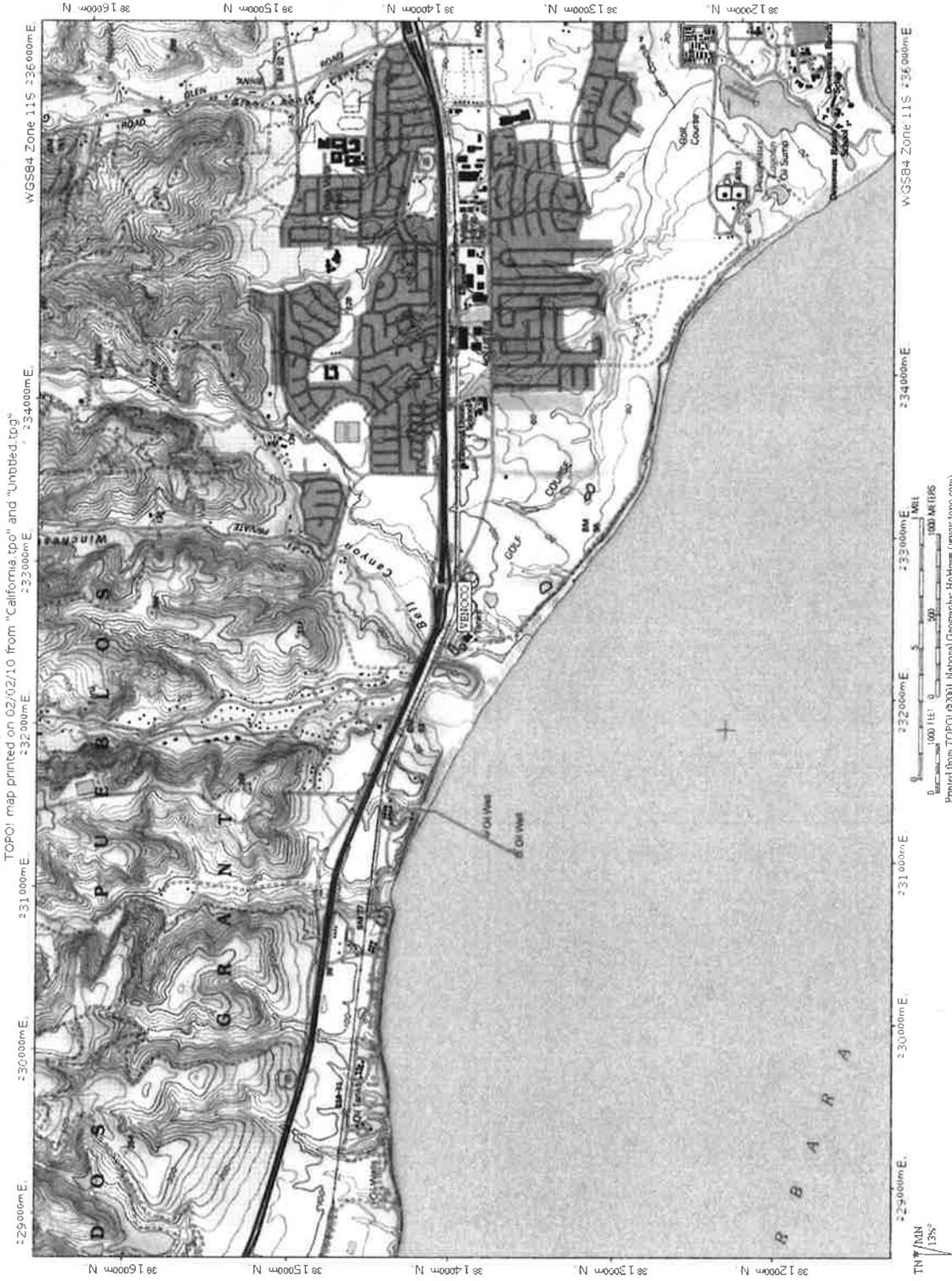


FIGURE 3 Facility Location – Local (Aerial View)



Scale (Feet) 0  674

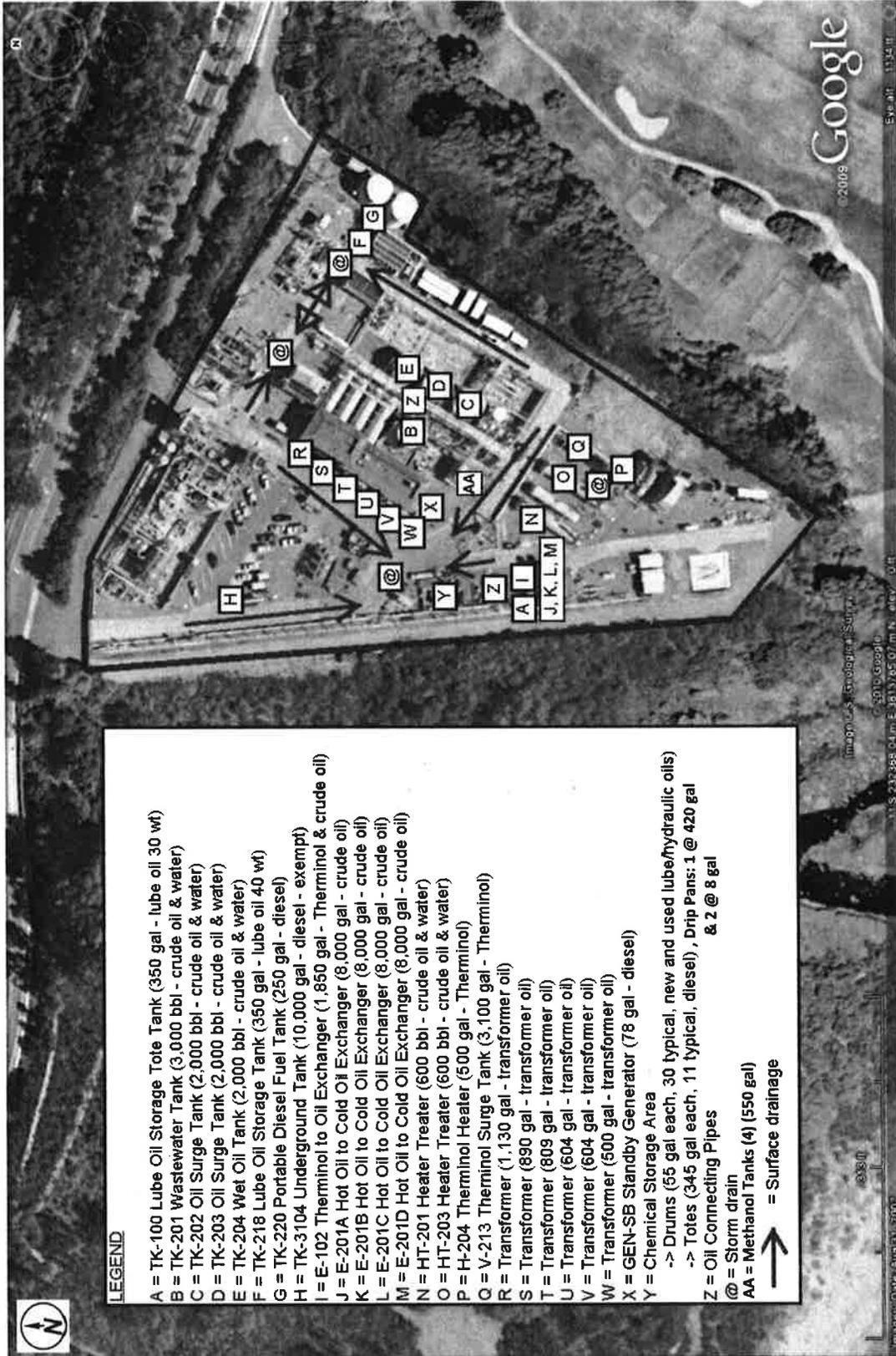
FIGURE 4 - Topographic Map



**FIGURE 5 Facility Layout  
(See Next Page)**

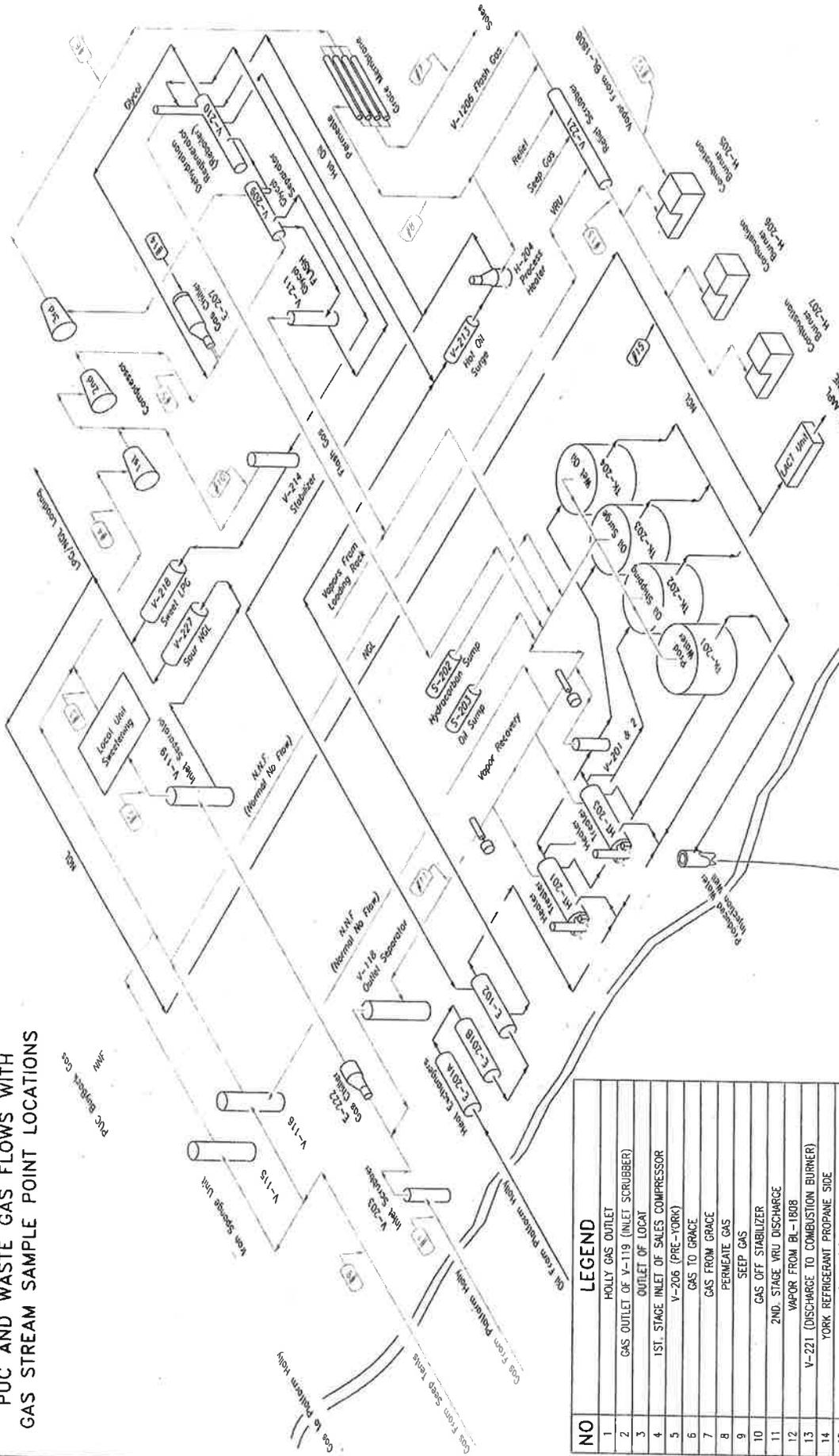


FIGURE 6 – Bulk Storage Containers



**FIGURE 7 Facility Fluid Flow Schematic  
(See Next Page)**

ELLWOOD FACILITY  
 PROCESS FLOW DIAGRAM  
 PUC AND WASTE GAS FLOWS WITH  
 GAS STREAM SAMPLE POINT LOCATIONS



NO	LEGEND
1	HOLLY GAS OUTLET
2	GAS OUTLET OF V-119 (INLET SCRUBBER)
3	OUTLET OF LOCAT
4	1ST. STAGE INLET OF SALES COMPRESSOR
5	V-206 (PRE-YORK)
6	GAS TO GRACE
7	GAS FROM GRACE
8	PERMENE GAS
9	SEEP GAS
10	GAS OFF STABILIZER
11	2ND. STAGE VRU DISCHARGE
12	VAPOR FROM BL-1808
13	V-221 (DISCHARGE TO COMBUSTION BURNER)
14	YORK REFRIGERANT PROPANE SIDE
15	NGL TO PIPELINE

VENOCO INC.  
 10000 Santa Barbara Ave. Santa Barbara, CA 93101  
 (805) 964-1000

PROJECT: ELLWOOD FACILITY, SANTA BARBARA, CA

DATE: 04-25-02

SCALE: NOTED

PROJECT ENG: R. VAN NOSTRAND

FIG. NO: F-9749A

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**TABLE 1. Facility Equipment List  
(See Next 8 Pages)**

ELLWOOD EQUIPMENT LIST 2014					
Site	Equip.#	Description	EqType	InServ?	P&ID #
ELLWOOD	EMT-P-101A	PUMP,SHIPPING,MARINE TERMINAL	PUMP	Y	12181
ELLWOOD	EMT-P-101B	PUMP,SHIPPING,MARINE TERMINAL	PUMP	Y	12181
ELLWOOD	EMT-T-1	TANK,OIL,1,000 BBL,LEASE 421	TNK	N	12181
ELLWOOD	EMT-T-8264	TANK,OIL,56,000 BBL	TNK	Y	12181
ELLWOOD	EMT-T-8265	TANK,OIL,56,000 BBL	TNK	Y	12181
ELLWOOD	EMT-T-8266	TANK,FIREWATER,10,000 BBL	TNK	Y	12183
ELLWOOD	EMT-T-8267	TANK,LUBE OIL,P-101A,P-101B	TNK	Y	12182
ELLWOOD	EMT-V-100	VESSEL,RECEIVER/AIR ELIMINATOR	VSSL	N	12181
ELLWOOD	EMT-V-101A	VESSEL,PULSATION DAMPNER,EAST	VSSL	Y	12181
ELLWOOD	EMT-V-101B	VESSEL,PULSATION DAMPNER,WEST	VSSL	Y	12181
ELLWOOD	EMT-V-421	VESSEL,421	VSSL	N	
ELLWOOD	EOF-AC-1	AIR CONDITION,UPSTAIRS OFFICES	AC	Y	
ELLWOOD	EOF-AC-2	AIR CONDITION,PROD. OFFICE	AC	Y	
ELLWOOD	EOF-BL-100	BLOWER,FRESH AIR,LAB	BLW	Y	
ELLWOOD	EOF-BL-1801	BLOWER,HOFFMAN,OXIDIZER,LOCAT	BLW	Y	9761-11
ELLWOOD	EOF-BL-1802	BLOWER,HOFFMAN,OXIDIZER,LOCAT	BLW	Y	9761-11
ELLWOOD	EOF-BL-1803	BLOWER,NASH VACUUM,LOCAT	BLW	N	9761-4
ELLWOOD	EOF-BL-1804	BLOWER,NASH VACUUM,LOCAT	BLW	N	9761-4
ELLWOOD	EOF-BL-1806	BLOWER,BOOSTER,TK-1903,LOCAT	BLW	N	9761-6
ELLWOOD	EOF-BL-1808	BLOWER,OXIDIZER,LOCAT	BLW	Y	9761-5
ELLWOOD	EOF-BL-201A	BLOWER,HYBON	BLW	Y	9760-2
ELLWOOD	EOF-BL-201B	BLOWER,HYBON	BLW	Y	9760-2
ELLWOOD	EOF-BL-201C	BLOWER,HYBON	BLW	Y	9760-2
ELLWOOD	EOF-BL-205	BLOWER,BURNER,HIRT	BLW	Y	9761-16
ELLWOOD	EOF-BL-206	BLOWER,BURNER,HIRT	BLW	Y	9760-18
ELLWOOD	EOF-BL-300	BLOWER,PURGE AIR,SWGR ROOM	BLW	Y	E-E-917
ELLWOOD	EOF-BL-730	BLOWER,H-204	BLW	Y	9760-14
ELLWOOD	EOF-CR-201	BRIDGE CRANE,K-201	CRANE	Y	
ELLWOOD	EOF-CR-DOCK	CRANE,LOADING DOCK JIB	CRANE	Y	
ELLWOOD	EOF-CR-PIER	ELLPIER,HOIST/CRANE FACILITIES	CRANE	Y	
ELLWOOD	EOF-E-102	EXCHANGER,THERMINOL	EX	Y	9760-1A
ELLWOOD	EOF-E-1302	COOLER,AIR	EX	Y	9761-11
ELLWOOD	EOF-E-1701A	COOLING TOWER	EX	N	9761-9
ELLWOOD	EOF-E-1701B	COOLING TOWER	EX	N	9761-9
ELLWOOD	EOF-E-200	EXCHANGER,FIN FAN,GLYCOL FIN TUBE	EX	Y	9760-13
ELLWOOD	EOF-E-201A	EXCHANGER,CRUDE/CRUDE	EX	Y	9760-1A
ELLWOOD	EOF-E-201B	EXCHANGER,CRUDE/CRUDE	EX	Y	9760-1A
ELLWOOD	EOF-E-201C	EXCHANGER,CRUDE/CRUDE	EX	N	9760-1A
ELLWOOD	EOF-E-201D	EXCHANGER,CRUDE/CRUDE	EX	N	9760-1A
ELLWOOD	EOF-E-202	EXCHANGER,PUMP SEAL WATER COOLER,NASH	EX	N	9760-9
ELLWOOD	EOF-E-203	COOLER,AIR,FAN,A&B,1ST STG,K-201	EX	Y	9760-11B
ELLWOOD	EOF-E-204	COOLER,AIR,FAN,A&B,2ND STG,K-201	EX	Y	9760-11B
ELLWOOD	EOF-E-205	COOLER,AIR,3RD STG GAS,K-201	EX	Y	9760-11B
ELLWOOD	EOF-E-206	COOLER,G-FIN,K-202	EX	Y	9760-12
ELLWOOD	EOF-E-207	CHILLER,RICH GAS,K-202	EX	Y	9760-12
ELLWOOD	EOF-E-208	CHILLER,GLYCOL/WATER,BRINE,K-202	EX	N	9760-12

ELLWOOD EQUIPMENT LIST 2014					
Site	Equip.#	Description	EqType	InServ?	P&ID #
ELLWOOD	EOF-E-210A	EXCHANGER,FAN,REFRIGERATION UNIT EAST K-202	FF	Y	9760-12A
ELLWOOD	EOF-E-210B	EXCHANGER,FAN,REFRIGERATION UNIT EAST MIDDLE K-202	FF	Y	9760-12A
ELLWOOD	EOF-E-210C	EXCHANGER,FAN,REFRIGERATION UNIT WEST MIDDLE K-202	FF	Y	9760-12A
ELLWOOD	EOF-E-210D	EXCHANGER,FAN,REFRIGERATION WEST UNIT K-202	FF	Y	9760-12A
ELLWOOD	EOF-E-211	REBOILER,STABILIZER,V-214	EX	Y	9760-15
ELLWOOD	EOF-E-212	EXCHANGER,LPG,SWEET	EX	Y	9760-15
ELLWOOD	EOF-E-213	REBOILER,STABILIZER,V-214	EX	Y	9760-16
ELLWOOD	EOF-E-214	CONDENSER,DEBUTANIZER	EX	N	9760-16
ELLWOOD	EOF-E-215	COOLER,DEBUTANIZER BOTTOM	EX	N	9760-16
ELLWOOD	EOF-E-216	RADIATOR,COMPRESSOR,K-201	EX	Y	9760-11C
ELLWOOD	EOF-E-217A	FAN,EXCHANGER,JACKET WATER,K-202	FF	Y	9760-24
ELLWOOD	EOF-E-217B	FAN,EXCHANGER,JACKET WATER,K-202	FF	Y	9760-24
ELLWOOD	EOF-E-218A	EXCHANGER,1ST & 2ND STG DISCH COOLER,K-205,K-206	EX	N	9760-19
ELLWOOD	EOF-E-218B	EXCHANGER,1ST & 2ND STG DISCH COOLER,K-205,K-206	EX	Y	9760-19
ELLWOOD	EOF-E-218C	EXCHANGER,1ST & 2ND STG DISCH COOLER,K-205,K-206	EX	Y	9760-19
ELLWOOD	EOF-E-218D	EXCHANGER,1ST & 2ND STG DISCH COOLER,K-205,K-206	EX	Y	9760-19
ELLWOOD	EOF-E-219	COOLER,OIL,K-201	EX	Y	9760-11C
ELLWOOD	EOF-E-220A	JACKET WATER COOLER,	EX	N	9760-24
ELLWOOD	EOF-E-220B	VRU, 2ND STAGE DISCHARGE COOLER	EX	Y	9760-24
ELLWOOD	EOF-E-222	FILTER,K-VRU	EX	Y	9760-8
ELLWOOD	EOF-E-224A	EXCHANGER,GLYCOL/GLYCOL,NORTH	EX	Y	9760-13
ELLWOOD	EOF-E-224B	EXCHANGER,GLYCOL/GLYCOL,SOUTH	EX	Y	9760-13
ELLWOOD	EOF-E-225	EXCHANGER,3RD STG DISCHARGE	EX	Y	9760-19
ELLWOOD	EOF-E-226	EXCHANGER,JACKET WATER,FIN TUBE	EX	Y	9760-19
ELLWOOD	EOF-F-1801	FILTER,OXIDIZER BLOWER,BL-1801	FLTR	Y	9761-11
ELLWOOD	EOF-F-1802	FILTER,OXIDIZER BLOWER,BL-1802	FLTR	Y	9761-11
ELLWOOD	EOF-F-201	SEPARATOR,FILTER,K-201,K-205,K-206	FLTR	Y	9760-11B
ELLWOOD	EOF-F-205A	AIR DRYER	FLTR	Y	9760-29
ELLWOOD	EOF-F-205B	AIR DRYER	FLTR	Y	9760-29
ELLWOOD	EOF-F-205C	FILTER,PRE,TO AIR DRYERS,F-205A,F-205B	FLTR	Y	9760-29
ELLWOOD	EOF-F-205D	FILTER,AFT,TO RECEIVER,	FLTR	Y	9760-29
ELLWOOD	EOF-F-205E	FILTER,PRE,TO AIR DRYERS,F-205A,F-205B,VALVE ASSEMBLY	FLTR	Y	9760-29
ELLWOOD	EOF-F-205F	FILTER,PRE,TO AIR DRYERS,F-205A,F-205B,MOISTURE IND.	FLTR	Y	9760-29
ELLWOOD	EOF-F-206	FILTER,GLYCOL,VAPOR	FLTR	Y	9760-13
ELLWOOD	EOF-F-207	FILTER,GLYCOL CHARCOAL	FLTR	Y	9760-13
ELLWOOD	EOF-F-208	FILTER,GLYCOL SOCK	FLTR	Y	9760-13
ELLWOOD	EOF-F-209	FILTER,WATER	FLTR	N	9760-24
ELLWOOD	EOF-F-210	FILTER,GUARD BED DESSICANT	FLTR	Y	9760-30
ELLWOOD	EOF-F-211	FILTER,COALESCING	FLTR	Y	9760-30
ELLWOOD	EOF-F-214A	FILTER,FIN FAN,E-210A	FLTR	Y	9760-12A
ELLWOOD	EOF-F-214B	FILTER,FIN FAN,E-210B	FLTR	Y	9760-12A
ELLWOOD	EOF-F-214C	FILTER,FIN FAN,E-210C	FLTR	Y	9760-12A
ELLWOOD	EOF-F-214D	FILTER,FIN FAN,E-210D	FLTR	Y	9760-12A
ELLWOOD	EOF-F-215	FILTER,SEPARATER	FLTR	Y	9760-30A
ELLWOOD	EOF-F-216	FILTER,COALESCING	FLTR	Y	9760-30A
ELLWOOD	EOF-F-217	FILTER,GUARD BED	FLTR	Y	9760-30A

ELLWOOD EQUIPMENT LIST 2014					
Site	Equip.#	Description	EqType	InServ?	P&ID #
ELLWOOD	EOF-F-218	FILTER,POLISHING	FLTR	Y	9760-30A
ELLWOOD	EOF-F-2201	SEPARATOR,GAS/FILTER,LOCAT	FLTR	Y	9761-1
ELLWOOD	EOF-F-2202	SEPARATOR,GAS/FILTER,LOCAT	FLTR	Y	9761-1
ELLWOOD	EOF-F-2203	SEPARATOR,GAS/FILTER,LOCAT	FLTR	Y	9761-1
ELLWOOD	EOF-F-225	FILTER/STRAINER,FOAM,V-225	FLTR	Y	9760-24
ELLWOOD	EOF-F-237	FILTER,AFT,TO RECEIVER,	FLTR	Y	9760-29
ELLWOOD	EOF-F-237A	FILTER,AFT,TO V-237 RECEIVER	FLTR	Y	9760-29
ELLWOOD	EOF-F-237B	FILTER,DRYER	FLTR	Y	9760-29
ELLWOOD	EOF-F-MEM-01	FILTER,MEMBRANE POLISHING 1 BOT-TOP,PIPE SEGMENT	FLTR	Y	9760-30B
ELLWOOD	EOF-F-MEM-02	FILTER,MEMBRANE POLISHING 2 BOT-TOP,PIPE SEGMENT	FLTR	Y	9760-30B
ELLWOOD	EOF-F-MEM-03	FILTER,MEMBRANE POLISHING 3 BOT-TOP,PIPE SEGMENT	FLTR	Y	9760-30B
ELLWOOD	EOF-F-MEM-04	FILTER,MEMBRANE POLISHING 4 BOT-TOP,PIPE SEGMENT	FLTR	Y	9760-30B
ELLWOOD	EOF-F-MEM-05	FILTER,MEMBRANE POLISHING 5 BOT-TOP,PIPE SEGMENT	FLTR	Y	9760-30B
ELLWOOD	EOF-F-MEM-06	FILTER,MEMBRANE POLISHING 6 BOT-TOP,PIPE SEGMENT	FLTR	Y	9760-30B
ELLWOOD	EOF-F-MEM-07	FILTER,MEMBRANE POLISHING 7 BOT-TOP,PIPE SEGMENT	FLTR	Y	9760-30B
ELLWOOD	EOF-F-MEM-08	FILTER,MEMBRANE POLISHING 8 BOT-TOP,PIPE SEGMENT	FLTR	Y	9760-30B
ELLWOOD	EOF-F-MEM-09	FILTER,MEMBRANE POLISHING 9 BOT-TOP,PIPE SEGMENT	FLTR	Y	9760-30B
ELLWOOD	EOF-F-MEM-10	FILTER,MEMBRANE POLISHING 10 BOT-TOP,PIPE SEGMENT	FLTR	Y	9760-30B
ELLWOOD	EOF-F-MEM-11	FILTER,MEMBRANE POLISHING 11 BOT-TOP,PIPE SEGMENT	FLTR	Y	9760-30B
ELLWOOD	EOF-F-MEM-12	FILTER,MEMBRANE POLISHING 12 BOT-TOP,PIPE SEGMENT	FLTR	Y	9760-30B
ELLWOOD	EOF-F-MEM-13	FILTER,MEMBRANE POLISHING 13 BOT-TOP,PIPE SEGMENT	FLTR	Y	9760-30A
ELLWOOD	EOF-F-MEM-14	FILTER,MEMBRANE POLISHING 14 BOT-TOP,PIPE SEGMENT	FLTR	Y	9760-30A
ELLWOOD	EOF-GEN-SB	GENERATOR,STAND BY	GEN	Y	
ELLWOOD	EOF-H-204	HEATER,PROCESS	HTR	Y	9760-14
ELLWOOD	EOF-H-205	HEATER,HIRT BURNER	HTR	Y	9761-16
ELLWOOD	EOF-H-206	HEATER,BURNER,HIRT	HTR	Y	9760-18A
ELLWOOD	EOF-H-207	HEATER,FLARE UNIT,HIRT BURNER	HTR	Y	9760-18A
ELLWOOD	EOF-H-208	HEATER,THERMINOL	HTR	Y	9760-14
ELLWOOD	EOF-HT-201	HEATER TREATER	HTR	Y	9760-22
ELLWOOD	EOF-HT-202	SLOP TANK	HTR	N	9760-22
ELLWOOD	EOF-HT-203	HEATER TREATER	HTR	Y	9760-23
ELLWOOD	EOF-J-1101	VENTURI EDUCTOR,LOCAT,V-1201	EDUC	Y	9761-2
ELLWOOD	EOF-J-1102	VENTURI EDUCTOR,LOCAT,V-1201	EDUC	Y	9761-2
ELLWOOD	EOF-J-1103	VENTURI EDUCTOR,LOCAT,V-1201	EDUC	Y	9761-2
ELLWOOD	EOF-J-1104	VENTURI EDUCTOR,LOCAT,V-1201	EDUC	Y	9761-2
ELLWOOD	EOF-J-1105	VENTURI EDUCTOR,LOCAT,V-1202	EDUC	Y	9761-2
ELLWOOD	EOF-J-1107	VENTURI EDUCTOR,LOCAT,V-1202	EDUC	Y	9761-2
ELLWOOD	EOF-J-1108	VENTURI EDUCTOR,LOCAT,V-1202	EDUC	Y	9761-2
ELLWOOD	EOF-K-201	COMPRESSOR,SALES GAS,DELAVAL	COMP	Y	9760-11A
ELLWOOD	EOF-K-202	COMPRESSOR,REFRIG,YORK	COMP	Y	9760-12A
ELLWOOD	EOF-K-204A	COMPRESSOR,AIR	COMPA	Y	9760-29
ELLWOOD	EOF-K-204B	COMPRESSOR,AIR	COMPA	Y	9760-29
ELLWOOD	EOF-K-204C	COMPRESSOR,AIR	COMPA	Y	9760-29
ELLWOOD	EOF-K-205	COMPRESSOR,SALES GAS,CFB	COMP	Y	9760-19A
ELLWOOD	EOF-K-206	COMPRESSOR,SALES GAS,IR TYPE HHE	COMP	Y	9760-19A
ELLWOOD	EOF-K-VRU-1	COMPRESSOR,1ST STG,K-VRU-1	COMP	Y	9760-4

ELLWOOD EQUIPMENT LIST 2014					
Site	Equip.#	Description	EqType	InServ?	P&ID #
ELLWOOD	EOF-K-VRU-2	COMPRESSOR,2ND STG,K-VRU-2	COMP	Y	9760-4
ELLWOOD	EOF-K-VRU-3	COMPRESSOR,1ST STG,K-VRU-3	COMP	Y	9760-4
ELLWOOD	EOF-K-VRU-4	COMPRESSOR,2ND STG,K-VRU-4	COMP	Y	9760-4
ELLWOOD	EOF-M-2401	MIXER,REACTION TANK,TK-1901,LOCAT	MIXR	N	9761-5
ELLWOOD	EOF-M-2402	MIXER,REACTION TANK,TK-1902,LOCAT	MIXR	Y	9761-6
ELLWOOD	EOF-M-2403	MIXER,TK-1903,LOCAT	MIXR	Y	9761-6
ELLWOOD	EOF-M-2404	AGITATOR,SLURRY,LOCAT	MIXR	Y	9761-8
ELLWOOD	EOF-M-2405	AGITATOR,SLURRY,LOCAT	MIXR	Y	9761-8
ELLWOOD	EOF-M-2406	MIXER,SOLUTION MAKE-UP TANK,LOCAT	MIXR	N	9761-9
ELLWOOD	EOF-M-2407	AGITATOR,SLURRY,LOCAT	MIXR	Y	9761-7
ELLWOOD	EOF-M-2408	AGITATOR,SLURRY,LOCAT	MIXR	Y	9761-7
ELLWOOD	EOF-P-101A	PUMP,CHEMICAL,METHANOL NORTH	PUMP	Y	9769
ELLWOOD	EOF-P-101B	PUMP,CHEMICAL,METHANOL SOUTH	PUMP	Y	9769
ELLWOOD	EOF-P-102A	PUMP,CHEMICAL INJECTION	PUMP	Y	9769
ELLWOOD	EOF-P-102B	PUMP,CHEMICAL INJECTION	PUMP	N	9769
ELLWOOD	EOF-P-103	PUMP,CHEMICAL TRANSFER FROM TK-101	PUMP	N	9760-28
ELLWOOD	EOF-P-103A	PUMP,CHEMICAL INJECTION	PUMP	N	9769
ELLWOOD	EOF-P-1505	PUMP,STRETFORD SOLUTION CIRC.,LOCAT	PUMP	Y	9761-9
ELLWOOD	EOF-P-1505A	PUMP,SEAL WATER INJECTION,AIR DRIVEN	PUMP	Y	9761-10
ELLWOOD	EOF-P-1505B	PUMP,SEAL WATER INJECTION,AIR DRIVEN	PUMP	Y	9761-10
ELLWOOD	EOF-P-1506	PUMP,STRETFORD SOLUTION CIRC.,LOCAT	PUMP	Y	9761-9
ELLWOOD	EOF-P-1506A	PUMP,WATER INJ,SEAL,LOCAT	PUMP	Y	9761-9
ELLWOOD	EOF-P-1507A	PUMP,SULFUR SLURRY,LOCAT	PUMP	Y	9761-8
ELLWOOD	EOF-P-1509	PUMP,SULFUR SLURRY,LOCAT,TK-3103	PUMP	Y	9761-7
ELLWOOD	EOF-P-1510	PUMP,VACUUM,LOCAT	PUMP	N	9761-3
ELLWOOD	EOF-P-1511	PUMP,VACUUM,LOCAT	PUMP	N	9761-3
ELLWOOD	EOF-P-1513	PUMP,SUMP,LOCAT,S-207	PUMP	Y	9761-10
ELLWOOD	EOF-P-1902	PUMP,SULFUR SLURRY,TRANSFER	PUMP	Y	9761-6
ELLWOOD	EOF-P-1907A	PUMP,IRON CHELATE ADD,BOOSTER,TK-3101	PUMP	Y	9761-10
ELLWOOD	EOF-P-1909	PUMP,DIESEL INJ,LOCAT	PUMP	Y	9761-10
ELLWOOD	EOF-P-201A	PUMP,WATER INJECTION	PUMP	Y	9760-2
ELLWOOD	EOF-P-201B	PUMP,WATER INJECTION	PUMP	Y	9760-2
ELLWOOD	EOF-P-201C	PUMP,WASTE WATER CHARGE	PUMP	N	9760-2
ELLWOOD	EOF-P-202	PUMP,WET OIL,TO HTs	PUMP	Y	9760-6
ELLWOOD	EOF-P-203	PUMP,OIL SHIPPING	PUMP	Y	9760-35
ELLWOOD	EOF-P-204A	PUMP,CHILLED WATER,E-208	PUMP	N	9760-12
ELLWOOD	EOF-P-205A	PUMP,WATER SUPPLY,TO TK-206	PUMP	Y	9760-24
ELLWOOD	EOF-P-205B	PUMP,WATER SUPPLY,TO TK-206	PUMP	Y	9760-24
ELLWOOD	EOF-P-206A	PUMP,FIRE WATER,MOTOR DRIVEN	PUMP	Y	9760-24
ELLWOOD	EOF-P-206B	PUMP,DIESEL ENGINE DRIVEN FIRE WATER	PUMP	Y	9760-24
ELLWOOD	EOF-P-207A	PUMP,GLYCOL	PUMP	Y	9760-13
ELLWOOD	EOF-P-207B	PUMP,GLYCOL	PUMP	Y	9760-13
ELLWOOD	EOF-P-207C	PUMP,GLYCOL	PUMP	Y	9760-13
ELLWOOD	EOF-P-208	PUMP,GLYCOL	PUMP	Y	9760-14
ELLWOOD	EOF-P-209A	PUMP,PROCESS FLUID,DISCH,V-213	PUMP	Y	9760-14
ELLWOOD	EOF-P-209B	PUMP,PROCESS FLUID,DISCH,V-213	PUMP	Y	9760-14

ELLWOOD EQUIPMENT LIST 2014					
Site	Equip.#	Description	EqType	InServ?	P&ID #
ELLWOOD	EOF-P-212A	PUMP,LPG/NGL LOADING	PUMP	Y	9760-17
ELLWOOD	EOF-P-212B	PUMP,LPG/NGL LOADING	PUMP	Y	9760-17
ELLWOOD	EOF-P-214	PUMP,STORM WATER SUMP	PUMP	Y	9760-3
ELLWOOD	EOF-P-215	PUMP,HYDROCARBON PIT	PUMP	Y	9760-3
ELLWOOD	EOF-P-217A	PUMP,CRUDE/CRUDE EXCHANGER	PUMP	Y	9760-6
ELLWOOD	EOF-P-217B	PUMP,CRUDE/CRUDE EXCHANGER	PUMP	Y	9760-6
ELLWOOD	EOF-P-218	PUMP,LUBE OIL TANK,TO COMPS	PUMP	Y	9760-33
ELLWOOD	EOF-P-219	PUMP,COOLING WATER,K-201	PUMP	Y	9760-11C
ELLWOOD	EOF-P-220	PUMP,CHARGE,LACT 2,CHARGE	PUMP	Y	9760-7
ELLWOOD	EOF-P-220C	PUMP,CHARGE,LACT 2,CHARGE	PUMP	Y	9760-7
ELLWOOD	EOF-P-221	PUMP,SAMPLE,LACT UNIT 2	PUMP	Y	9760-7
ELLWOOD	EOF-P-222	PUMP,LACT 1,CHARGE	PUMP	Y	9760-7
ELLWOOD	EOF-P-225	PUMP,LUBE OIL,K-206 HHE	PUMP	Y	9760-19A
ELLWOOD	EOF-P-226	PUMP,JACKET WATER,K-205,K-206	PUMP	Y	9760-19
ELLWOOD	EOF-P-229	PUMP,JACKET WATER,K-205,K-206	PUMP	Y	9760-19
ELLWOOD	EOF-P-230	PUMP,STM WATER SUMP	PUMP	Y	9760-2
ELLWOOD	EOF-P-231	PUMP,LUBE OIL,K-206 HHE	PUMP	Y	9760-19A
ELLWOOD	EOF-P-232	PUMP,PRE-LUBE,K-205	PUMP	Y	
ELLWOOD	EOF-P-233	PUMP,SEPTIC,BUILDING	PUMP	Y	
ELLWOOD	EOF-P-234	PUMP,SEPTIC,FIELD	PUMP	Y	
ELLWOOD	EOF-P-236	PUMP,LUBE OIL,K-201	PUMP	Y	9760-11C
ELLWOOD	EOF-P-237	PUMP,IRRIGATION	PUMP	Y	9760-24
ELLWOOD	EOF-P-238	PUMP,OIL TRANSFER,RECYCLE,TK-202 THRU 204	PUMP	Y	9760-6
ELLWOOD	EOF-P-241A	PUMP,OIL SUMP,FROM TK-100	PUMP	Y	9760-33
ELLWOOD	EOF-P-241B	PUMP,LUBE OIL BOOSTER,K-VRU,FROM TK-100	PUMP	Y	9760-33
ELLWOOD	EOF-P-242	PUMP,DIESEL,TO TK-1909	PUMP	Y	9760-33
ELLWOOD	EOF-P-243	PUMP,FIRE WATER CHARGE,20HP	PUMP	Y	9760-24
ELLWOOD	EOF-P-244	PUMP,OIL SUMP	PUMP	Y	9760-3
ELLWOOD	EOF-P-245A	PUMP,NGL INJ	PUMP	Y	9760-17A
ELLWOOD	EOF-P-245B	PUMP,NGL INJ	PUMP	Y	9760-17A
ELLWOOD	EOF-P-248A	PUMP,JACKET WATER,YORK,K-202	PUMP	Y	9760-24
ELLWOOD	EOF-P-248B	PUMP,JACKET WATER,YORK,K-202	PUMP	Y	9760-24
ELLWOOD	EOF-P-249A	PUMP,JACKET WATER,K-VRU	PUMP	Y	9760-24
ELLWOOD	EOF-P-249B	PUMP,JACKET WATER,K-VRU	PUMP	Y	9760-24
ELLWOOD	EOF-P-250A	PUMP,REGENERATOR,DISCH,V-204	PUMP	N	9760-8
ELLWOOD	EOF-P-250B	PUMP,REGENERATOR,DISCH,V-204	PUMP	N	9760-8
ELLWOOD	EOF-P-251	PUMP,TRANSFER	PUMP	Y	9760-22
ELLWOOD	EOF-P-257	PUMP,TRABON LUBE,K-201	PUMP	Y	9760-11C
ELLWOOD	EOF-P-260	PUMP,DIAPHRAGM,VAPOR,K-205,K-206	PUMP	Y	9760-19B
ELLWOOD	EOF-P-ARO-1	PUMP,DIAPHRAGM,1 1/2",SS	PUMP	N	
ELLWOOD	EOF-P-ARO-2	PUMP,DIAPHRAGM,1/2",SS	PUMP	N	
ELLWOOD	EOF-P-M15-1	PUMP,DIAPHRAGM,3"	PUMP	N	
ELLWOOD	EOF-P-M15-2	PUMP,DIAPHRAGM,3",ALUM,TK-1903,SPARE	PUMP	Y	
ELLWOOD	EOF-P-M15-3	PUMP,DIAPHRAGM,3",ALUM,BACK UP,TK-1903,SPARE	PUMP	Y	
ELLWOOD	EOF-P-M4-1	PUMP,DIAPHRAGM,1 1/4"	PUMP	N	
ELLWOOD	EOF-P-P2R-1	PUMP,DIAPHRAGM,1",PLASTIC	PUMP	N	

ELLWOOD EQUIPMENT LIST 2014					
Site	Equip.#	Description	EqType	InServ?	P&ID #
ELLWOOD	EOF-P-SP5-1	PUMP,DIAPHRAGM,3",TYPE 5	PUMP	N	
ELLWOOD	EOF-P-SP7-1	PUMP,DIAPHRAGM,3",TYPE 5,TK-1908	PUMP	Y	9761-8
ELLWOOD	EOF-P-SPA-1	PUMP,DIAPHRAGM,2",TYPE A	PUMP	N	
ELLWOOD	EOF-S-201	SUMP,STORM WATER.	VSSL	Y	9760-3
ELLWOOD	EOF-S-202	SUMP,PROCESS HYDROCARBON	VSSL	Y	9760-3
ELLWOOD	EOF-S-203	SUMP,CRUDE OIL	VSSL	Y	9760-3
ELLWOOD	EOF-S-205	SUMP,SOUR GAS LIQUID,BURIED	VSSL	N	9760-9
ELLWOOD	EOF-S-206	SUMP,SOLVENT	VSSL	N	9760-28
ELLWOOD	EOF-S-207	SUMP,LOCAT	VSSL	Y	9761-10
ELLWOOD	EOF-S-230	SUMP,WATER RUN OFF	VSSL	Y	9760-2
ELLWOOD	EOF-ST-203	STRAINER FILTER	FLTR	Y	9760-35
ELLWOOD	EOF-ST-220	STRAINER FILTER	FLTR	Y	9760-7
ELLWOOD	EOF-T-101A	TANK,METHNOL STORAGE	TNK	Y	9769
ELLWOOD	EOF-T-101B	TANK,METHNOL STORAGE	TNK	Y	9769
ELLWOOD	EOF-T-101C	TANK,METHNOL STORAGE	TNK	Y	9769
ELLWOOD	EOF-T-101D	TANK,METHNOL STORAGE	TNK	Y	9769
ELLWOOD	EOF-T-102A	TANK,CHEMICAL STORAGE	TNK	Y	9769
ELLWOOD	EOF-T-102B	TANK,CHEMICAL STORAGE	TNK	Y	9769
ELLWOOD	EOF-T-103	TANK,CHEMICAL STORAGE	TNK	Y	9769
ELLWOOD	EOF-T-104	TANK,CHEMICAL STORAGE	TNK	N	9769
ELLWOOD	EOF-TK-100	TANK,LUBE OIL	TNK	Y	9760-33
ELLWOOD	EOF-TK-101	TANK,CHEMICAL STORAGE,FLUOR	TNK	Y	9760-28
ELLWOOD	EOF-TK-240A	TANK,CHEMICAL	TNK	Y	9760-19
ELLWOOD	EOF-TK-1901	TANK,REACTION,3000 BBL,LOCAT	TNK	Y	9761-5
ELLWOOD	EOF-TK-1902	TANK,OXIDIZER,3000 BBL,LOCAT	TNK	Y	9761-6
ELLWOOD	EOF-TK-1903	TANK,OXIDIZER,3000 BBL,LOCAT	TNK	Y	9761-6
ELLWOOD	EOF-TK-1904	TANK,MAKE UP,LOCAT	TNK	N	9761-9
ELLWOOD	EOF-TK-1905	TANK,CAUSTIC,LOCAT FIBERGLASS	TNK	Y	9761-10
ELLWOOD	EOF-TK-1906	TANK,CHEMICAL,CHELATE,LOCAT FIBERGLASS	TNK	Y	9761-10
ELLWOOD	EOF-TK-1907	TANK,CHEMICAL,LOCAT FIBERGLASS	TNK	Y	9761-10
ELLWOOD	EOF-TK-1908	TANK,SULFUR LOADING,LOCAT	TNK	Y	9761-8
ELLWOOD	EOF-TK-1909	TANK,DIESEL INJ	TNK	N	9761-10
ELLWOOD	EOF-TK-201	TANK,WASTE WATER,3000 BBL	TNK	Y	9760-2
ELLWOOD	EOF-TK-202	TANK,OIL SURGE,2000 BBL	TNK	Y	9760-6
ELLWOOD	EOF-TK-203	TANK,WET OIL,2000 BBL	TNK	Y	9760-6
ELLWOOD	EOF-TK-204	TANK,WET OIL,2000 BBL	TNK	Y	9760-6
ELLWOOD	EOF-TK-205	TANK,WATER,3000 BBL	TNK	Y	9760-24
ELLWOOD	EOF-TK-206	TANK,WATER,3000 BBL	TNK	Y	9760-24
ELLWOOD	EOF-TK-207	TANK,O2 CHEMICAL	TNK	N	9760-3
ELLWOOD	EOF-TK-218	TANK,COMP LUBE OIL	TNK	N	9760-33
ELLWOOD	EOF-TK-220	TANK,DIESEL,FIRE PUMP	TNK	Y	9760-33
ELLWOOD	EOF-TK-240	TANK,JACKET WATER SURGE	TNK	Y	9760-19
ELLWOOD	EOF-TK-3101	TANK,BALANCE	TNK	Y	9761-9
ELLWOOD	EOF-TK-3102	TANK,SLURRY PIT NORTH	TNK	Y	9761-8
ELLWOOD	EOF-TK-3103	TANK,SLURRY PIT SOUTH	TNK	Y	9761-7
ELLWOOD	EOF-TK-3104	TANK,DIESEL, FOR HOLLY CHEMICAL	TNK	Y	

ELLWOOD EQUIPMENT LIST 2014					
Site	Equip.#	Description	EqType	InServ?	P&ID #
ELLWOOD	EOF-TK-EAGLE	TANK,WATER,PIER FEED FROM EAGLE CYN	TNK	Y	
ELLWOOD	EOF-TRAN-1	TRANSFORMER 1,12470V TO 4160V,K-201	TX	Y	
ELLWOOD	EOF-TRAN-2	TRANSFORMER 2,12470V TO 4160V	TX	Y	
ELLWOOD	EOF-TRAN-3	TRANSFORMER 3,12470V TO 480V	TX	Y	
ELLWOOD	EOF-TRAN-4	TRANSFORMER 4,12470V TO 4160V	TX	Y	
ELLWOOD	EOF-TRAN-5	TRANSFORMER 5,12470V TO 480V	TX	Y	
ELLWOOD	EOF-TRAN-6	TRANSFORMER 6,12470V TO 16500V	TX	Y	
ELLWOOD	EOF-V-114	IRON SPONGE A	VSSL	Y	9760-21
ELLWOOD	EOF-V-115	IRON SPONGE B	VSSL	Y	9760-21
ELLWOOD	EOF-V-116	IRON SPONGE C	VSSL	Y	9760-21
ELLWOOD	EOF-V-118	SEPARATOR,NGL DISCHARGE	VSSL	Y	9760-8
ELLWOOD	EOF-V-119	SEPARATOR,NGL INLET	VSSL	Y	9760-8
ELLWOOD	EOF-V-1201	CONTACTOR,LOCAT	VSSL	Y	9761-2
ELLWOOD	EOF-V-1202	SEPARATOR DRUM,LOCAT	VSSL	Y	9761-2
ELLWOOD	EOF-V-1203	WASH,DRUM LOCAT	VSSL	Y	9761-3
ELLWOOD	EOF-V-1206	FLASH DRUM,LOCAT	VSSL	Y	9761-3
ELLWOOD	EOF-V-1207	KNOCK OUT DRUM,LOCAT	VSSL	Y	9761-3
ELLWOOD	EOF-V-1210	TANK,WATER STORAGE	VSSL	Y	9761-10
ELLWOOD	EOF-V-201	STRIPPER,H2S,FLUOR	VSSL	Y	9760-5
ELLWOOD	EOF-V-202	STRIPPER,H2S,FLUOR	VSSL	Y	9760-5
ELLWOOD	EOF-V-203	SCRUBBER,INLET GAS,FROM HOLLY	VSSL	Y	9760-8
ELLWOOD	EOF-V-204	SCRUBBER,INLET 2ND STG	VSSL	N	9760-8
ELLWOOD	EOF-V-205	SCRUBBER,1ST STG SUCTION,K-201	VSSL	Y	9760-10
ELLWOOD	EOF-V-206	SCRUBBER,2ND STG SUCTION,K-201	VSSL	Y	9760-10
ELLWOOD	EOF-V-207	SCRUBBER,2ND STG DISCHARGE,K-201	VSSL	Y	9760-10
ELLWOOD	EOF-V-208	SCRUBBER,3RD STG SUCTION,K-201	VSSL	Y	9760-10
ELLWOOD	EOF-V-209	SEPARATOR,GLYCOL	VSSL	Y	9760-13
ELLWOOD	EOF-V-210	REGENERATOR,GLYCOL	VSSL	Y	9760-13
ELLWOOD	EOF-V-210A	TANK,GLYCOL DRIP	VSSL	Y	9760-13
ELLWOOD	EOF-V-211	VESSEL,GLYCOL FLASH	VSSL	Y	9760-13
ELLWOOD	EOF-V-212	TANK,GLYCOL STORAGE	VSSL	Y	9760-14
ELLWOOD	EOF-V-213	TANK,SURGE,PROCESS FLUID	VSSL	Y	9760-14
ELLWOOD	EOF-V-214	SCRUBBER,LPG/NGL,FLUOR	VSSL	Y	9760-15
ELLWOOD	EOF-V-215	VESSEL,DEBUTANIZER LOWER	VSSL	N	9760-16
ELLWOOD	EOF-V-216	VESSEL,DEBUTANIZER UPPER	VSSL	N	9760-16
ELLWOOD	EOF-V-217	ACUMULATOR,REFLUX	VSSL	N	9760-17
ELLWOOD	EOF-V-218	TANK,LPG STORAGE	VSSL	Y	9760-17
ELLWOOD	EOF-V-219	TANK,LPG STORAGE	VSSL	N	9760-17
ELLWOOD	EOF-V-220	SCRUBBER,VAPOR RETURN	VSSL	N	9760-17
ELLWOOD	EOF-V-220A	DEAERATOR	VSSL	Y	9760-7
ELLWOOD	EOF-V-220B	DEAERATOR	VSSL	N	9760-7
ELLWOOD	EOF-V-220C	TANK,SAMPLE 1	VSSL	Y	9760-7
ELLWOOD	EOF-V-220D	TANK,SAMPLE 2	VSSL	N	9760-7
ELLWOOD	EOF-V-220E	TANK,NGL SAMPLE 3	VSSL	N	9760-7
ELLWOOD	EOF-V-221	SCRUBBER,RELIEF	VSSL	Y	9760-18
ELLWOOD	EOF-V-224	SCRUBBER,HYBON	VSSL	Y	9760-2



**APPENDIX D**

**SPECIAL INSTRUCTIONS**

## **SPECIAL INSTRUCTION 1**

### **FACTORS TO CONSIDER IN DETERMINING WHETHER THERE IS A THREAT OF FIRE OF EXPLOSION**

In the initial evaluation of an oil spill incident, the Senior Operations Supervisor or operator in charge would assess the threat of fire and explosion.

Because hydrocarbons are combustible, there always is the threat that a fire or explosion may occur during control and/or response operations. Volatile components in the spilled oil will evaporate giving rise to a hydrocarbon/air mixture. Because these hydrocarbon vapors are denser than air, they will accumulate, particularly in confined or poorly ventilated areas. The risk of fire and explosion is greatest just after the release when the evaporation rate is at a maximum, and will normally diminish rapidly with time.

Ignition may be caused not only by the more obvious sources, such as a fire, but also by an electrical system, the hot exhaust of an internal combustion engine, by sparks from electrical equipment, mechanical or friction sources, hot flying particles from burning embers, welding and cutting equipment, and the discharge of static electricity. Great care must be taken to eliminate all possible sources of ignition.

Although heavier petroleum products become more and more difficult to ignite with time, especially when the layers are thin, oil impregnated floating debris may act as a wick increasing the ignitability of heavy products. Care must be taken, therefore, to ensure that the spilled oil is not ignited in the liquid phase by burning debris.

Equipment used in an ignitable atmosphere must be explosion proof. If explosion proof equipment is not available, work should be allowed to proceed only when tests with a combustible gas indicator (e.g., explosimeter) show that the area is safe. Once again, the danger is highest in confined and poorly ventilated areas.

Accumulations of hydrocarbon vapors can have an adverse effect on personnel at quite low concentrations. Vapors can dull the sense of smell and symptoms of diminished responsibility and dizziness similar to drunkenness can occur along with headaches and irritation of the eyes. Vapor concentrations around the lower explosion limit (LEL) can quickly cause suffocation, paralysis, and death. For this reason, personnel should not be allowed to work for any period of time without breathing apparatus when concentrations exceed about 2 percent of the LEL or about 250 ppm. If entry to areas of high vapor concentrations is necessary, breathing apparatus must be worn. Venoco work permit air testing guidelines shall be strictly enforced.

## **SPECIAL INSTRUCTION 2**

### **INFORMATION ON THE PHYSIOLOGICAL EFFECTS OF H<sub>2</sub>S GAS**

#### **A. SPECIAL PROPERTIES**

Hydrogen sulfide gas is **heavier** than air, so it will sink in the atmosphere. Once released to the atmosphere, it is likely to accumulate and hang in confined and/or poorly ventilated areas.

Changes in atmospheric pressure, wind, and other ventilation factors can suddenly turn an otherwise harmless level of gas into a deadly concentration. This is particularly true around poorly ventilated areas. For this reason, standard fire safety precautions, which call for personnel to kneel or lie close to the floor to avoid smoke inhalation, should **not** be followed in the presence of hydrogen sulfide. Instead, **personnel will find the air safer away from the floor.**

Hydrogen sulfide gas also is **colorless**. The gas has a distinctive odor (i.e., like rotten eggs) when it is present in low concentrations. However, at higher concentrations, the gas will deaden olfactory senses, masking the disagreeable odor, and increasing the danger to personnel. Even in lower concentrations, exposure over a short period of time may so accustom personnel to the odor that they will not notice it. It can also be effectively masked at times by the general odor of crude oil. At higher concentrations, the presence of the gas may also be detected by the unpleasant physical symptoms it produces (See Part B of this SPECIAL INSTRUCTION).

Hydrogen sulfide also is reactive, and can react with the iron in a storage container to form ferrous sulfide, which is pyrophoric and may spontaneously ignite when exposed to air.

Finally, hydrogen sulfide gas is **flammable**. In concentrations exceeding 43,000 ppm it is capable of exploding when mixed in a two-to-three or greater ratio with oxygen and ignited. To guard against an explosion, Venoco's Hot Work Policy shall be strictly enforced.

#### **B. PHYSIOLOGICAL EFFECTS**

Hydrogen sulfide gas may be **deadly**.

In low concentrations (i.e., less than 500 ppm), hydrogen sulfide gas produces coughing and burning sensations in the eyes, throat, and other mucous membranes. Other symptoms may include headache, dizziness, nausea, blurred vision, and inflamed eyes.

Exposure to moderately high concentrations (i.e., between 500-1,000 ppm) of this gas may cause unconsciousness, but should not cause paralysis of the lungs or respiratory system. In these cases, it is essential that the victim be moved to a fresh air area. Normal breathing should resume without artificial respiration.

In heavy concentrations (i.e., greater than 1,000 ppm), hydrogen sulfide gas can **kill** a person by paralyzing the nerve endings around the lungs so that the body cannot inhale or exhale. Death occurs from asphyxiation unless the victim receives artificial respiration before heart action has ceased.

Figure 1 is a chart outlining the physical symptoms likely to occur in an individual exposed to various concentrations of hydrogen sulfide gas.

<b>FIGURE 1</b>	<b>INFORMATION ON THE PHYSIOLOGICAL EFFECTS OF H<sub>2</sub>S GAS</b>		
<b>CONCENTRATION</b>	<b>EXPOSURE TIME</b>		
<b>P.P.M.</b>	<b>0 TO 2 MINUTES</b>	<b>15 TO 30 MINUTES</b>	<b>30 MINUTES TO 1 HR.</b>
1-15	Detectable by "rotten egg" smell.	Detectable.	Detectable. Maximum allowable concentration for 8-hour exposure without protective mask.
50-150	Coughing. Slight irritation of eyes. Loss of sense of smell.	Disturbed respiration. Pain in the eyes. Sleepiness.	Throat and eye irritation.
150-250	Loss of sense of smell.	Throat and eye irritation.	Throat and eye irritation.
250-350	Irritation of eyes. Loss of sense of smell.	Irritation of eyes and respiratory tract.	Painful secretion of tears, weariness. May cause death in longer exposure.
350-450	Irritation of eyes. Loss of sense of smell.	Difficult respiration. Irritation of eyes.	Increased irritation of eyes and nasal tract. Dull headache. Serious respiratory disturbance. May cause death.
450-900	Coughing. Unconsciousness. Serious respiratory disturbance.	Respiratory disturbance. Eye irritation. Unconsciousness.	Serious eye irritation. Slow pulse, rapid shallow breathing. Respiratory paralysis, convulsions, asphyxia and death.
1000	Unconsciousness.	Death.	Death.

At lower concentrations the gas is detectable by smell and most claim it to be a distinct rotten egg odor. At elevated concentrations (100-150 ppm) the sense of smell is quickly lost.

**APPENDIX E**

**SPILL NOTIFICATION AND REPORTING FORM –  
CA ONSHORE**



# SPILL REPORT AND INCIDENT NOTIFICATION FORM – CA ONSHORE

*\* Do not delay reporting pending additional information \**

## REPORTING PARTY

Reporter's Name:				
Position:				
Phone Numbers:	Day:		Evening:	
Company:				
Address:				

Were Materials Discharged?	Y		N		Confidential?	Y		N	
Calling for Responsible Party?	Y		N						

## RESPONSIBLE PARTY

Company:	Venoco, Inc.
Contact:	Larry Huskins (Operations Manager)
Address:	6267 Carpinteria Ave
	Carpinteria, CA 93013
Phone:	(805) 745-2100

## RELEASE DESCRIPTION

Source of Release:			
Date of Release:		Time of Release:	
Incident Location (address, Lat/Long, GPS):			
Nearest City:		Distance to City:	

## MATERIAL

Type of Material:								
Est. Discharge Quantity:		Bbl, Gal, or Lbs:						
Discharged to Water?	Y		N		Quantity:		Bbl, Gal, or Lbs:	
If oil, Description of Slick:								
Est. Size of Slick:								
Direction of Movement:								

## RESPONSE ACTION

Actions taken to isolate, contain and control release:			

## IMPACTS

Number of Injuries:		Number of Deaths:				
Were there any evacuations?	Y		N		Number evacuated:	
Was there any damage?	Y		N			
Medium Affected:	Water	Land	Air			
Description of Medium Affected:						

## WEATHER AND WATER CONDITIONS

Temperature:	Air	°		Water	°
Wind:	mph from the				
Current:	knots to the			Wave Height:	

**APPENDIX F**

**INSPECTION CHECKLIST**

**FACILITY INSPECTION CHECKLIST—Ellwood Onshore Facility**

Instructions: This inspection record will be completed every six months. Place an X in the appropriate box for each item. If any response requires elaboration, do so in the Descriptions and Comments space provided. Further descriptions or comments should be attached on a separate sheet of paper if necessary.

	<u>Yes</u>	<u>No</u>	<u>DESCRIPTIONS AND COMMENTS</u>
Tank surfaces show signs of leakage			
Tanks are damaged, rusted, or deteriorated			
Bolts, rivets, or seams are damaged			
Tank supports are deteriorated or bulked			
Tank foundations have eroded or settled			
Level gauges or alarms are inoperative			
Vents are obstructed			
Valve seals or gaskets are leaking			
Pipelines or supports are damaged or deteriorated			
Buried pipelines are exposed			
Loading/unloading area is damaged or deteriorated			
Connections are not capped or blank-flanged			
Secondary containment is damaged or stained			
Dike drainage valves are open			
Oil/water separator is functioning properly			
Oil/water separator effluent has a sheen			
Fencing, gates, or lighting is non-functional			
Secondary containment devices are intact and functional			

Remarks:

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Title: \_\_\_\_\_

**APPENDIX G**

**GOVERNMENT AGENCY CONTACTS**

## **GOVERNMENT AGENCY CONTACTS**

The list of government agency contact people follows:

### **FEDERAL AGENCIES**

#### **NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)**

Jordan Stout, NOAA Scientific Support Coordinator  
Coast Guard Island, Bldg. 50-7  
Alameda, CA 94501  
(510) 437-5344 (office) / (206) 321-3320 (cell)  
(206) 526-4911 (Duty Officer if SCC cannot be reached or for 24/7 emergency support)

National Weather Service (Recorded Data – Los Angeles, Ventura, Santa Barbara areas)  
(805) 988-6610

#### **NATIONAL RESPONSE CENTER**

c/o United States Coast Guard (CG-3RPF-2) – Room 2111-B  
2100 2<sup>nd</sup> Street, SW  
Washington, DC 20593-0001  
(800) 424-8802

#### **U.S. ARMY CORPS OF ENGINEERS**

Emergency Management Branch  
P. O. Box 532711  
Los Angeles, CA 90053-2325  
(213) 452-3440 (Emergency Operations Center – EOC)  
(213) 452-3441 (Emergency Response)

#### **U.S. ENVIRONMENTAL PROTECTION AGENCY**

75 Hawthorne Street  
San Francisco, CA 94105  
(415) 947-8000 (general)  
(800) 300-2193 (24-hour environmental emergencies)

#### **U.S. FISH AND WILDLIFE**

Pacific Southwest Region - Ecological Services  
Ventura Fish and Wildlife Office  
2493 Portola Road, Suite B  
Ventura, CA 93003  
(805) 644-1766

**STATE AGENCIES**

**CALIFORNIA EMERGENCY MANAGEMENT AGENCY (FORMERLY CA OES)**

3650 Schriever Avenue  
Mather, CA 95655  
(800) 852-7550 (emergency)  
(916) 845-8510 (main number)

**DEPARTMENT OF FISH AND GAME**

Office of Spill Prevention and Response (OSPR)  
1700 K Street, Suite 250  
Sacramento, CA 95811  
(916) 445-9338  
(916) 445-0045 (24 hour dispatch)  
(858) 467-4201 (South Coast Regional Office)

**DIVISION OF OIL, GAS, and GEOTHERMAL RESOURCES**

District No. 3  
5075 S. Bradley Road, Suite 221  
Santa Maria, CA 93455  
(805) 937-7246

**REGIONAL WATER QUALITY CONTROL BOARD**

Central Coast Region  
895 Aerovista Place, Suite 101  
San Luis Obispo, CA 93401  
(805) 549-3147

**SANTA BARBARA COUNTY AIR POLLUTION CONTROL DISTRICT**

260 N. San Antonio Road, Suite A  
Santa Barbara, CA 93110-1315  
(805) 961-8800

**SANTA BARBARA COUNTY ENVIRONMENTAL HEALTH SERVICES /  
HAZARDOUS MATERIALS UNIT**

225 Camino del Remedio,  
Santa Barbara, CA 93110  
(805)-681-4900

**STATE AGENCIES (cont.)**

**SANTA BARBARA COUNTY OFFICE OF EMERGENCY SERVICES**

105 East Anapamu Street, Suite 3  
Santa Barbara, CA 93101  
(805) 560-1081

**SANTA BARBARA COUNTY PETROLEUM DEPARTMENT**

624 West Foster Road Suite C  
Santa Maria, CA 93455  
(805) 934-6128

**STATE LANDS COMMISSION**

200 Oceangate, 12<sup>th</sup> Floor  
Long Beach, CA 90802  
(562) 590-5201

**APPENDIX H**

**SUBSTANTIAL HARM CRITERIA CALCULATION**

## SUBSTANTIAL HARM CRITERIA CALCULATION

### Ellwood Onshore Facility

Site	Tank Description	Tank Volume bbl	Tank Volume Gallons
Processing Area	TK-100 Lube Oil Storage Tote Tank	8.3	350.0
	TK-201 Wastewater Tank	3000.0	126000.0
	TK-202 Oil Surge Tank	2000.0	84000.0
	TK-203 Oil Surge Tank	2000.0	84000.0
	TK-204 Wet Oil Tank	2000.0	84000.0
	TK-218 Lube Oil Storage Tank	8.3	350.0
	TK-220 Portable Diesel Fuel Tank	6.0	250.0
	TK-3104 Underground Diesel	238.1	10000.0
	V-213 Therminol Surge Tank	73.8	3100.0
	GEN-SB Standby Generator	1.9	78.0
	E-102 Therminol to Oil Exchanger	44.0	1850.0
	E-201A Hot Oil to Cold Oil Exchanger	190.5	8000.0
	E-201B Hot Oil to Cold Oil Exchanger	190.5	8000.0
	E-201C Hot Oil to Cold Oil Exchanger	190.5	8000.0
	E-201D Hot Oil to Cold Oil Exchanger	190.5	8000.0
	HT-201 Heater Treater	600.0	25200.0
	HT-203 Heater Treater	600.0	25200.0
	H-204 Therminol Heater	11.9	500.0
	Methanol	13.1	550.0
	Transformer	26.9	1130.0
	Transformer	21.2	890.0
	Transformer	19.3	809.0
	Transformer	14.4	604.0
	Transformer	14.4	604.0
Transformer	11.9	500.0	
<b>Subtotal</b>	<b>11514.6</b>	<b>483615.0</b>	
Chemical Storage	55 gallon Lube/Hydraulic Oil Drum (30 typical)	39.3	1650.0
	345 gallon Diesel Tote (11 typical)	90.4	3795.0
	420 gallon pig drip pan	10.0	420.0
	59 gallon pig drip pan (2)	3.0	120.0
	<b>Subtotal</b>	<b>129.6</b>	<b>5445.0</b>
<b>Total</b>	<b>11644.3</b>	<b>489060.0</b>	

**APPENDIX I**

**DIKE DRAINAGE**

***Ellwood Onshore Facility SPCC Plan***

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Storm water accumulated at the EOF is diverted to an underground sump before it is discharged to the Pacific Ocean or hauled offsite. Inspection of stormwater for signs of oil contamination (i.e. surface sheen) before discharge and other prevention measures are conducted per the IGP and SWPPP permits approved for the EOF. Discharge logs can be found onsite at the EOF.

**APPENDIX J**

**OIL SPILL CONTINGENCY PLAN CHECKLIST**

**OIL SPILL CONTINGENCY PLAN & CHECKLIST**

An oil spill contingency plan and written commitment of resources is required for:

- Flowlines and intra-facility gathering lines at oil production facilities and
- Qualified oil-filled operational equipment which has no secondary containment.

An oil spill contingency plan meeting the provisions of 40 CFR part 109, as described below, and a written commitment of manpower, equipment and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful is attached to this Plan.	<input checked="" type="checkbox"/> <b>Please see below</b>
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Complete the checklist below to verify that the necessary operations outlined in 40 CFR part 109 - Criteria for State, Local and Regional Oil Removal Contingency Plans - have been included.

<b>Table G-15 Checklist of Development and Implementation Criteria for State, Local and Regional Oil Removal Contingency Plans (§109.5)<sup>a</sup></b>	
(a) Definition of the authorities, responsibilities and duties of all persons, organizations or agencies which are to be involved in planning or directing oil removal operations.	<b>Page 12-15</b>
(b) Establishment of notification procedures for the purpose of early detection and timely notification of an oil discharge including: <ol style="list-style-type: none"> <li>(1) The identification of critical water use areas to facilitate the reporting of and response to oil discharges.</li> <li>(2) A current list of names, telephone numbers and addresses of the responsible persons (with alternates) and organizations to be notified when an oil discharge is discovered.</li> <li>(3) Provisions for access to a reliable communications system for timely notification of an oil discharge, and the capability of interconnection with the communications systems established under related oil removal contingency plans, particularly State and National plans (e.g., NCP).</li> <li>(4) An established, prearranged procedure for requesting assistance during a major disaster or when the situation exceeds the response capability of the State, local or regional authority.</li> </ol>	<p><b>Page 9</b></p> <p><b>Pages 12-15, Appendix G</b></p> <p><b>Page 12-15, Appendix G</b></p> <p><b>Page 12-15, Appendix G</b></p>
(c) Provisions to assure that full resource capability is known and can be committed during an oil discharge situation including: <ol style="list-style-type: none"> <li>(1) The identification and inventory of applicable equipment, materials and supplies which are available locally and regionally.</li> <li>(2) An estimate of the equipment, materials and supplies which would be required to remove the maximum oil discharge to be anticipated.</li> <li>(3) Development of agreements and arrangements in advance of an oil discharge for the acquisition of equipment, materials and supplies to be used in responding to such a discharge.</li> </ol>	<p><b>Page 16</b></p> <p><b>Page 16</b></p> <p><b>Page 5</b></p>
(d) Provisions for well defined and specific actions to be taken after discovery and notification of an oil discharge including: <ol style="list-style-type: none"> <li>(1) Specification of an oil discharge response operating team consisting of trained, prepared and available operating personnel.</li> <li>(2) Predesignation of a properly qualified oil discharge response coordinator who is charged with the responsibility and delegated commensurate authority for directing and coordinating response operations and who knows how to request assistance from Federal authorities operating under existing national and regional contingency plans.</li> <li>(3) A preplanned location for an oil discharge response operations center and a reliable communications system for directing the coordinated overall response operations.</li> <li>(4) Provisions for varying degrees of response effort depending on the severity of the oil discharge.</li> <li>(5) Specification of the order of priority in which the various water uses are to be protected where more than one water use may be adversely affected as a result of an oil discharge and where response operations may not be adequate to protect all uses.</li> <li>(6) Specific and well defined procedures to facilitate recovery of damages and enforcement measures as provided for by State and local statutes and ordinances.</li> </ol>	<p><b>Page 12</b></p> <p><b>Page 12</b></p> <p><b>Page 12</b></p> <p><b>Page 13</b></p> <p><b>N/A</b></p> <p><b>Page 4</b></p>

<sup>a</sup> The contingency plan must be consistent with all applicable state and local plans, Area Contingency Plans, and the National Contingency Plan (NCP)

**APPENDIX K**

**PRODUCTION FACILITY SPILL CONTINGENCY PLAN  
(AB 1960 COMPLIANCE MATRIX)**

**14 CCR 1722.9 COMPLIANCE MATRIX**

<b>Requirement</b>	<b>Applicable Section</b>	<b>Document Location</b>
A list of the operator's 24-hour emergency contact telephone numbers.	1722.9(a)	Page 14
A list of available personal safety equipment, including location and maintenance frequency.	1722.9(b)	Page 17
A one page quick-action checklist for use during initial stages of a spill response.	1722.9(c)	Appendix L
A list of required local, state and federal agency notifications with telephone numbers, including, but not limited to, the phone number for the appropriate Division district office and the phone number for reporting spills to the California Emergency Management Agency.	1722.9(d)	Appendix G
A list of control and/or cleanup equipment available onsite or locally, with contact procedures.	1722.9(e)	Page 17
A map of the production facilities covered by the plan	1722.9(f)	Appendix C
A list of all chemicals for which a Material Safety Data Sheet is required, and the location of the Material Safety Data Sheets for those chemicals.	1722.9(g)	Appendix M
Procedures for making regular facility inspections, and maintenance of related inspection records.	1722.9(h)	Page 21 and Appendix F
Maximum and typical produced fluid processing rates.	1722.9(i)	Page 8 & 9
Typical volumes of liquids stored at the facility.	1722.9(j)	Appendix C – Table 1.
A list of additional containment features for production facilities in drainages with direct access to waterways or urban areas as determined necessary by the Supervisor.	1722.9(k)	Page 17-19
A list of corrosion prevention or corrosion monitoring techniques utilized.	1722.9(l)	Page 21
A description of all installed sensor and alarm systems.	1722.9(m)	Page 9
A description of the training provided to implement the plan.	1722.9(n)	Page 25

**APPENDIX L**  
**QUICK ACTION CHECKLIST**

**QUICK ACTION CHECKLIST**

<b>FIRST PERSON TO OBSERVE THE SPILL</b>	
Take appropriate personal protective measures.	<input type="checkbox"/>
Call for medical assistance if an injury has occurred.	<input type="checkbox"/>
Restrict access to the spill site and adjacent area as the situation demands. Take any other steps necessary to minimize any threat to health and safety.	<input type="checkbox"/>
Verify the type of product and quantity released.	<input type="checkbox"/>
Activate response personnel and notify management.	<input type="checkbox"/>
Notify appropriate government agencies in accordance with Appendix G	<input type="checkbox"/>
Advise personnel in the area of any potential threat and/or initiate evacuation procedures.	<input type="checkbox"/>
Identify and isolate the source of the discharge and minimize the loss of product.	<input type="checkbox"/>
Take necessary fire response actions.	<input type="checkbox"/>
Eliminate possible sources of ignition in the vicinity of the spill.	<input type="checkbox"/>
Record the following information: <ul style="list-style-type: none"><li>• Time of incident</li><li>• Location of incident</li><li>• Injury to personnel</li><li>• Type of fluid/material spilled</li><li>• Amount of fluid/material spilled</li><li>• Status of source</li><li>• Weather conditions</li></ul>	<input type="checkbox"/>
<b>PERSON IN CHARGE – UPON RECEIVING NOTIFICATION FROM FIRST PERSON TO OBSERVE SPILL</b>	
Account for all personnel	<input type="checkbox"/>
Assess the magnitude of oil spill incident, the status of control and response operations and the location and direction of movement. Confirm source of discharge.	<input type="checkbox"/>
Estimate spill volume	<input type="checkbox"/>
1) Spill Notification and Reporting Form and 2) CAER Hazardous Materials Minor Spill and Release Incident Report Form (Appendix E of "SPCC Plan –EOF" document)	<input type="checkbox"/>
Discuss the response strategy	<input type="checkbox"/>
Coordinate equipment deployment operations	<input type="checkbox"/>
Coordinate containment and recovery operations	<input type="checkbox"/>
Maintain personal notes of relevant actions and decisions.	<input type="checkbox"/>

**APPENDIX M**

**CHEMICAL INVENTORY**

**CHEMICAL INVENTORY**

<b>Chemical Name</b>	<b>MSDS Location</b>
ANTIFREEZE	MSDSonline®
BIOSTAT	MSDSonline®
CHELATE CONCENTRATE	MSDSonline®
Corrosion Inhibitor - PAO3857Z	MSDSonline®
CORROSION INHIBITOR-CGO118	MSDSonline®
CORROSION INHIBITOR-CRW9070	MSDSonline®
CRUDE OIL	MSDSonline®
DIESEL FUEL	MSDSonline®
FERRIC NITRATE SOLUTION 10.5%	MSDSonline®
FIRE FIGHTING FOAM	MSDSonline®
GASOLINE	MSDSonline®
H2S	MSDSonline®
HELIUM	MSDSonline®
HYDRAULIC OIL	MSDSonline®
HYDROGEN	MSDSonline®
LUBRICATING OIL	MSDSonline®
METHANOL	MSDSonline®
MINERAL SPIRITS	MSDSonline®
NATURAL GAS	MSDSonline®
NITROGEN	MSDSonline®
OIL FIELD DEBRIS	MSDSonline®
OTHER ORGANICS	MSDSonline®
PROPANE	MSDSonline®
PROPANE-REFRIGERANT (LPG)	MSDSonline®
SCALE INHIBITOR-SCW4056	MSDSonline®
SODIUM HYDROXIDE	MSDSonline®
SULFUR	MSDSonline®
SULFUR SLURRY	MSDSonline®
TANK BOTTOM WASTE	MSDSonline®
WATER CLARIFIER-RBW777	MSDSonline®

