OIL SPILL CONTINGENCY PLAN
South Ellwood Field

Ellwood Onshore Facility
Ellwood Marine Terminal
Ellwood Pier
Platform Holly
Beachfront Lease (PRC 421)
Ellwood Pipeline Inc. – Line 96 Pipeline

Prepared By:
Venoco, Inc.
6267 Carpinteria Avenue, Suite 100
Carpinteria, CA 93013
(805) 745-2100

CALIFORNIA CERTIFICATE OF FINANCIAL RESPONSIBILITY (CA COFR)

OWNER OR OPERATOR:
VENOCO, INC.
meets the financial responsibility requirements set forth in the Government Code Sections 8670.37.53 as it applies to the operation of

NAME:
PLATFORM HOLLY

LOCATION:

CERTIFICATE: 2-0799-00-005 **CONTROL #:** FB917

ISSUED DATE: July 01, 2014 **EXPIRATION DATE:** June 30, 2016

The holder of this document named above is subject to the provisions of California Code of Regulations, Title 14, Sections 791-797, implementing the financial responsibility requirements set forth in the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act (Act). This certificate holder has provided the necessary evidence of financial responsibility mandated by these requirements.

For the purpose of determining liability pursuant to the Act, this Certificate of Financial Responsibility is conclusive evidence that the person or entity holding the certificate is the party responsible for the specific Marine Facility.

No alterations of this certificate are permitted after issuance by the Administrator of OSPR. If there is a change in the name or ownership of the Marine Facility, the certificate holder must notify the Office of Spill Prevention and Response (OSPR) immediately. If the certificate expires, a new certificate will be required.

This certificate remains valid as long as the current method for demonstrating financial responsibility is maintained (eg. insurance). Any changes in this status must be reported to OSPR immediately.

It is the owner or operator's responsibility to ensure that this certificate number is also included in the owner or operator's marine oil spill contingency plan, which must be submitted to this office for approval, before operating in a location where a spill could impact California marine waters.

If you have any questions, please contact
Farina A. Khan
916-327-9937

Sincerely,
Farina A. Khan

Financial Analyst
Office of Spill Prevention and Response
cacofr-facilities@wildlife.ca.gov

CALIFORNIA CERTIFICATE OF FINANCIAL RESPONSIBILITY (CA COFR)

OWNER OR OPERATOR:
VENOCO, INC.
meets the financial responsibility requirements set forth in the Government Code Sections 8670.37.53 as it applies to the operation of

NAME:
PIPELINE BETWEEN SOUTH ELLWOOD ONSHORE FACILITY AND PLATFORM HOLLY

LOCATION:

CERTIFICATE: 2-0799-00-002 **CONTROL #:** FB915

ISSUED DATE: July 01, 2014 **EXPIRATION DATE:** June 30, 2016

The holder of this document named above is subject to the provisions of California Code of Regulations, Title 14, Sections 791-797, implementing the financial responsibility requirements set forth in the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act (Act). This certificate holder has provided the necessary evidence of financial responsibility mandated by these requirements.

For the purpose of determining liability pursuant to the Act, this Certificate of Financial Responsibility is conclusive evidence that the person or entity holding the certificate is the party responsible for the specific Marine Facility.

No alterations of this certificate are permitted after issuance by the Administrator of OSPR. If there is a change in the name or ownership of the Marine Facility, the certificate holder must notify the Office of Spill Prevention and Response (OSPR) immediately. If the certificate expires, a new certificate will be required.

This certificate remains valid as long as the current method for demonstrating financial responsibility is maintained (eg. insurance). Any changes in this status must be reported to OSPR immediately.

It is the owner or operator's responsibility to ensure that this certificate number is also included in the owner or operator's marine oil spill contingency plan, which must be submitted to this office for approval, before operating in a location where a spill could impact California marine waters.

If you have any questions, please contact
Farina A. Khan
916-327-9937

Sincerely,
Farina A. Khan

Financial Analyst
Office of Spill Prevention and Response
cacofr-facilities@wildlife.ca.gov

CALIFORNIA CERTIFICATE OF FINANCIAL RESPONSIBILITY (CA COFR)

OWNER OR OPERATOR:
VENOCO, INC.
meets the financial responsibility requirements set forth in the Government Code Sections 8670.37.53 as it applies to the operation of

NAME:
South Ellwood Onshore Facility Goleta, CA to Plains All American

LOCATION:
Pipline

CERTIFICATE: 2-0799-00-012 **CONTROL #:** FB923

ISSUED DATE: July 01, 2014 **EXPIRATION DATE:** June 30, 2016

The holder of this document named above is subject to the provisions of California Code of Regulations, Title 14, Sections 791-797, implementing the financial responsibility requirements set forth in the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act (Act). This certificate holder has provided the necessary evidence of financial responsibility mandated by these requirements.

For the purpose of determining liability pursuant to the Act, this Certificate of Financial Responsibility is conclusive evidence that the person or entity holding the certificate is the party responsible for the specific Marine Facility.

No alterations of this certificate are permitted after issuance by the Administrator of OSPR. If there is a change in the name or ownership of the Marine Facility, the certificate holder must notify the Office of Spill Prevention and Response (OSPR) immediately. If the certificate expires, a new certificate will be required.

This certificate remains valid as long as the current method for demonstrating financial responsibility is maintained (eg. insurance). Any changes in this status must be reported to OSPR immediately.

It is the owner or operator's responsibility to ensure that this certificate number is also included in the owner or operator's marine oil spill contingency plan, which must be submitted to this office for approval, before operating in a location where a spill could impact California marine waters.

If you have any questions, please contact
Farina A. Khan
916-327-9937

Sincerely,
Farina A. Khan

Financial Analyst
Office of Spill Prevention and Response
cacofr-facilities@wildlife.ca.gov

INTRODUCTION

This Plan has been prepared to meet the requirements of the:

- Oil Pollution Act of 1990 (OPA '90)
- California Senate Bill 2040

Applicable EPA regulations are 40 CFR Part 112 and Appendices A through F. Applicable DOT/PHMSA regulations are 49 CFR Part 194. Applicable USCG regulations are 33 CFR Part 154, Subpart F. The applicable State regulations are Title 14 CCR 817.02, 817.03 and 820.01.

The Plan is designed to assist Venoco personnel and its contractors in responding rapidly and effectively to emergency incidents.

Each plan holder is required to read the Plan and have a thorough understanding of the response procedures and resources (both internal and external) that can be mobilized for a response incident. Personnel named on the response team should review their roles and responsibilities as described in Appendix D of this Plan.

In addition to the Oil Spill Contingency Plan, the following documents include information that may be useful in a sustained response:

- Area Contingency Plan Los Angeles/Long Beach (Northern & Southern Sector).

PLAN FORMAT

The Plan includes the following components:

1. Basic factual information about the facilities, the product, and company contacts (Section 1).
2. Procedural information required in an emergency (Section 2).
3. Supporting information about the facility and tools to assist the response team in carrying out their activities (Appendices A through U).

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RESPONSE PROCEDURES AND RESPONSE TOOLS		
Topic	**Details**	**Plan Reference**
Facility Information	Facility information and information often required in reporting an incident	Section 1.1
	Map and facility diagrams	Appendix A
Response Team	Personnel assignments	Section 2.1
	Telephone numbers for Venoco personnel, contractors, facilities	Table 2-16
	Duty sheets for the Spill Response Operating Teams (IIRT and SIRT)	Appendix D
	Forms to used by the team	Appendix C
Telephone Directory	Telephone directory includes telephone numbers and addresses for: 1. Venoco personnel, facilities, and command post 2. Response contractors and cooperatives 3. Adjacent operators 4. Regulatory agencies 5. Emergency services 6. Waste management services 7. Outside services and resources	Tables 2-16 through 2-22
Emergency Notification and Reporting Procedures	Immediate notification procedures and reporting requirements	Section 2.2
	Telephone numbers of agencies and adjacent operators	Tables 2-18 and 2-19
Immediate Response Procedures and Strategies	Immediate response procedures and checklists for specific emergencies and response strategies for sensitive areas	Sections 2.3, 2.4, and 2.5
	Evacuation plan	Section 2.6
	Supporting information on sensitive resources	Appendix M
	Information on mechanical and non-mechanical response techniques	Appendices I, J and K
Response Resources	Response equipment	Appendix F
	Communications plan	Appendix L
Site Safety	Site safety and health plan	Appendix O
	Site safety plan and characterization forms	Appendix C
	Decontamination procedures	Appendix P
Waste Management and Disposal Plan	Waste regulations, minimization, storage, treatment, transportation, and disposal	Appendix N

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RESPONSE PROCEDURES AND RESPONSE TOOLS		
Topic	**Details**	**Plan Reference**
OSPR Supplement	Additional requirements	Appendix Q
DOT/PHMSA Supplement	Additional requirements	Appendix R
EPA Supplement	Additional requirements	Appendix S
USCG Supplement	Additional requirements	Appendix T
Santa Barbara County OEM Supplement	Additional requirements	Appendix U
Definitions and Acronyms	Definition of terms and common acronyms	Appendix V

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BOOK #	NAME	LOCATION
1	Health, Environment and Safety Manager	Corporate Office
2	Ellwood HES Coordinator	Corporate Office
3	Coastal Operations Manager	Corporate Office
4	Spare	Corporate Office
5	Central Files	Corporate Office
6	Ellwood Operations Supervisor	Office
7	Ellwood Control Room	Control Room
8	Platform Holly Control Room	Control Room
9	U.S. Coast Guard	Santa Barbara Marine Safety Detachment
10	Ca. OSPR	Los Alamitos Office
11	Ca. State Lands Commission	Long Beach Office
12	Santa Barbara County OEM	Santa Barbara Office
13	Santa Barbara County Planning & Development	Energy Division
14	Santa Barbara County Fire Department	Main Office
15	City of Goleta	Advance Planning Division
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17	Bureau of Safety and Environmental Enforcement	Camarillo Office
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REVISION	DATE	DESCRIPTION OF REVISION
1	1/2008	**Distribution List:** Added #11 and #12. **New Tab & Certificates:** Inserted COFR Certificates **Section 2:** Pages 3, 4, 43, 46, 48 **Appendices:** • C: Inserted "Spill Response Notification Form" and "Site Safety Plan" • G: Inserted new 2008 Clean Seas Certs
2	2/4/2008	**Cross Reference** **Section 2:** Multiple pages **Appendices**: • **A:** Multiple pages • **B:** Multiple pages • **H:** Page 2 • **I:** Pages 1, 3 ,6 ,12 • **J:** Multiple pages • **M:** Multiple pages • **N:** Page 10 • **Q:** Pages 4, 5,13 • **S:** Page 3
3	2/20/2008	**TOC:** Page 13 **Section 2:** Pages 8-12, 51 **Appendix F:** Added 2008 CS Inventory of Equip & Materials
4	5/2008	**Record of Revisions:** Reformatted **TOC:** Pages 1,4,7,9,10 **User's Guide** **Cross Reference:** Pages 1-4, 6-9 **Section 1:** Pages 1, 2, 14, 15 **Section 2:** Pages 4, 6, 8, 9, 15-17, 21, 22, 27-44, 49, 53, 55, 56, 60, 61 **Appendices**: • **B:** Pages 1, 4 • **C:** Added 2 new Spill Response Notification Forms (Onshore & Offshore), Updated USCG phone # on Agency Telephone Log • **H:** Pages 1, 4 • **I:** Page 14 • **J:** Pages 2, 4, 7 • **K:** Pages 5, 6, 8 • **L:** Pages 2, 3, 5 • **P:** Pages 2, 4 • **R:** Pages 1,3,7,8 • **T:** Page 1 • **U:** Pages 1-3
5	9/2009	Section 2: Pages 3 & 38

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REVISION	DATE	DESCRIPTION OF REVISION
6	1/2010	Section 2: Pages 4 & 38
7	08/10	COFR Certs – OSPR certs 2010 Dist List & Record of Revisions pgs i & iv; Cross Reference – footnote; General, all sections, update ACP to 2008; Section 1 – pg 1-4; Section 2 – pg 2-9 Table 2-3, 2-21 Platform Holly, 2-43 & 44 Table 2-19; Appendices: • A: various for Barge Olympic Spirit • B: Sect B.3.1 for Barge Olympic Spirit • E: revision for MSDSonline • F: pg F-1, CS Equipment List • L: Table L-1 & L-2 *BOEM biennial review and submittal
8	03-24-2011	Record of Revisions: Reformatted and Update
		TOC: Pages F-1, update page information F-7, added 33 CFR 154.1035 Surveillance and Aerial Tracking Equipment Clean Seas G-1, Clean Seas Certificates of Contractual Services 2011 G-1 Contractual Services MSA NRC Added NRC Equipment List Added NRC Personnel H-1, Updated page information H-3, Updated NRC Table Personnel Count I-1, Updated page information I-12 updated page information
		Users Guide:
		Cross Reference F-7, G-1
		Section 1 Cross Reference Appendices: • F page 1 • F page 7 • G page 1
9	12/2011	Edits for Line 96 Modifications
10	3/2012	Sections 1 & 2, updates, App F,
11	6/2013	Section 1 &2, COFRs, App A, App F
12	6/2014	App Q

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REVISION	DATE	DESCRIPTION OF REVISION

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Table CR-1. EPA Cross Index For 40 CFR Part 112, Appendix F.

Section	Description	Location/Title[1]	
		VENOCO OSCP	ACP
1.1	**Emergency Response Action Plan**	Section 2, Appendices A & C, and separate Santa Barbara Co. EAP	
1.2	**Facility Information**		
1.2.1	Name and location	1.1	
1.2.2	Latitude and longitude	1.1	
1.2.3	Wellhead protection area	1.1	
1.2.4	Owner/operator	1.1	
1.2.5	Qualified Individual	1.1	
1.2.6	Date of oil storage startup	1.1.	
1.2.7	Current operation	1.1	
1.2.8	Date and time of expansion	Not applicable	
1.3	**Emergency Response Information**		
1.3.1	Notification list and forms	2.1, 2.2, 2.5, Appendix C	
1.3.2	Response equipment list	Appendix F	
1.3.3	Response equipment testing and deployment	B.3.7	
1.3.4	Personnel	2.1, Appendix D, K.1, K.2	
1.3.5	Evacuation plans	2.6	
1.3.6	Qualified Individual's duties	2.1.3	
1.4	**Hazard Evaluation**		
1.4.1	Hazard identification	S.1.1	
1.4.2	Vulnerability analysis	S.1.2	
1.4.3	Analysis of potential for spill	S.1.3	
1.4.4	Facility reportable oil spill history	S.1.4	
1.5	**Discharge Scenarios**		
1.5.1	Small and medium discharge	S.3.1, S.3.2, S.4	
1.5.2	Worst case discharge	S.3.3, S.4	

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[1] Venoco OSCP: Venoco Oil Spill Contingency Plan South Ellwood Field; ACP: Area Contingency Plan Los Angeles/Long Beach (2008)

Table CR-1. EPA Cross Index For 40 CFR Part 112, Appendix F.

Section	Description	Location/Title[1]	
		VENOCO OSCP	ACP
1.6	**Discharge Detection Systems**		
1.6.1	Discharge detection by personnel	2.0, B.2, B.3, S.2	
1.6.2	Automated discharge detection	B.3	
1.7	**Plan Implementation**		
1.7.1	Response resources	2.2, 2.3, 2.4, 2.5, Appendix F, H.1, H.2, H.3, K.1, K.2, K.3, S.5	
1.7.2	Disposal plans	Appendix N	
1.7.3	Containment and drainage planning	B.3.1, B.3.3, B.3.5, B.3.6	
1.8	**Self-Inspection, Drills/Exercises, and Response Training**		
1.8.1	Facility self-inspection	B.2, Appendix C	
1.8.2	Facility drills/exercises	K.1, K.3, K.4.2, Appendix C	
1.8.3	Response training	K.1, K.2, K.4.1, Appendix C	
1.9	**Diagrams**	Appendix A	
1.10	**Security**	A.2.1, A.3.1, A.7.1	
2.0	**Response Plan Cover Sheet**		
2.1	General information	1.1	
2.2	Applicability of substantial harm	1.2	
2.3	Certification	1.2	
3.0	**Acronyms**	Appendix U	

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[1] Venoco OSCP: Venoco Oil Spill Contingency Plan South Ellwood Field; ACP: Area Contingency Plan Los Angeles/Long Beach (2008)

Table CR-2. OSPR Cross Index For Title 14 CCR 817.02.

Section 817.02	Description	Location/Title[1]	
		VENOCO OSCP	ACP
(a)	**Introductory Material**		
(1)(A)	Name and address of facility	1.1	
(1)(B)	Name, address and phone of owner/operator	1.1	
(1)(C)	Name, address and phone of correspondence contact	1.1	
(1)(D)	Certification statement	1.3	
(1)(E)	Copy of COFR	After title page (front of plan)	
(2)	Qualified individual	1.1, 2.1.3	
(3)	Agent for service of process	1.1	
(4)	Copy of OSRO contract	Appendix G	
(b)	**Facility Description**		
(1)(A)	Design and operations	1.1, A.2, A.3, A.4, A.5, A.6, A.7	
(1)(B)	MSDS	Appendix E	
(1)(C)	Oil transfer procedures	A.2, A.3, A.4, A.6, A.7	
(1)(D)	Facility hours of operation	1.1	
(1)(E)	Lease field description	1.1	
(2(A)	Map and site topography	Figures 1-1, A-1, A-2, A-3	
(2)(B)	Vicinity map	Figure A-1, A-2, A-4, A-15, R-1	
(2)(C)	Hydrographic and climatic conditions	A.9	
(2)(D)	Geographic features	Figure A-1, A-3, Table I-2, Attachment M-1	ACP: 9812.1, 9812.3, 9812.4
(2)(E)	Logistic resources	Table 2-3, Table 2-19, Table 2-22	ACP: 5000, 5200, 5300, 5400, 5900
(2)(F)	Shoreline access	Appendix M.2	ACP: 9812.5
(c)	**Prevention Measures**		
(1)(A)	History of significant spills	Q.3.1	
(1)(B)	Risk and hazard analysis	Q.3.2, Q.3.3	
(1)(C)	Hazard evaluation method	Q.3.2	

[1] Venoco OSCP: Venoco Oil Spill Contingency Plan South Ellwood Field; ACP: Area Contingency Plan Los Angeles/Long Beach (2008)

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Table CR-2. OSPR Cross Index For Title 14 CCR 817.02.

Section 817.02	Description	Location/Title[1]	
		VENOCO OSCP	ACP
(1)(D)	Results of risk and hazard analysis	Q.3.3	
(1)(E)	Supporting documentation	Q.3.4	
(2)(A)	Trajectory analysis	Q.4	
(2)(B)	Areas impacts, toxicity, persistence, seasonal sensitivity	Table I-2, Q.5	
(3)(A)	Maps of environmentally sensitive areas	Figure M-1	ACP: 9812.1, 9813.1, 9814.1
(3)(B)	Maps of economically and culturally sensitive resources	Appendix M.3	ACP: 9811.2, 9812.2, 9813.2, 9814.2
(4)(A)	Required prevention measures, inspection and maintenance	B.2	
(4)(B)	Spill prevention/reduction measures	B.3, B.4	
(4)(C)	Clear communications in transfer	B.3	
(4)(D)	Protection from flooding	Not applicable	
(5)	Other prevention measures	B.4	
(d)	**On-Water Containment and Recovery**		
(1)(B, E)	Reasonable worst case discharge	Q.6.1	
(2)	Persistence and emulsification factors, and response planning volume	Q.6.2, Q.6.3, Q.8	
(3)	Response capability standards	Q.6.4	
(4)	Non-cascadable equipment	Q.6.5	
(5)	On-water equipment and services	2.1, B.2, B.3, K.2.3, H.2, H.3, Appendix F, Appendix G	ACP: 3210, 3220
(6)	On-water response and recovery strategies	2.3, 2.4, 2.5, I.2, I.5, Appendix J	ACP: 3210, 3220
(e)	**Shoreline Protection and Cleanup**		

[1] Venoco OSCP: Venoco Oil Spill Contingency Plan South Ellwood Field; ACP: Area Contingency Plan Los Angeles/Long Beach (2008)

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Table CR-2. OSPR Cross Index For Title 14 CCR 817.02.

Section 817.02	Description	Location/Title[1]	
		VENOCO OSCP	ACP
(1)	Shoreline response planning volume	Q.7.1, Q.8	
(2)	Shoreline protection equipment and services	H.2, H.3, Appendix F, Appendix G	ACP: 3210, 3230
(3)	Reserved		
(4)	Shoreline protection and cleanup strategies	2.3.3.7, 2.3.3.8, I.3, I.4, Appendix M	ACP: 3210, 3230
(f)	**Response Procedures**		
(1)	Response organization (ICS)	2.1, Appendix D	
(2)	Establishment of command sites	2.3.3.3	
(3)	Cleanup stages chart	Figure I-1	
(4)	Provision of emergency services	2.4, Table 2-20	
(5)	Methods/equipment to minimize a spill	2.3.1, 2.3.2, 2.3.3	
(6)	Methods, equipment, and procedures for communication	2.3.3.3, Appendix L	
(7)	Post-spill review	1.7.2	
(8)	Access/contamination control	Appendix P	
(9)	Site safety plan	Appendix C, Appendix O	
(g)	**Notification Procedures**		
(1)	List of contacts	2.5	
(2)	Immediate notification	2.2	
(3)	Call-out procedure	2.2.1	
(4)	Checklist for reported information	Appendix C	
(5)	Reporting not delayed	2.2, Appendix C	
(6)	Updating report of spill	2.2.2, Appendix C	
(h)	**Temporary Storage and Waste Management**		
(1)	ID sufficient temporary storage	N.7, Appendix F	ACP: 3240.11, 3240.18.6

[1] Venoco OSCP: Venoco Oil Spill Contingency Plan South Ellwood Field; ACP: Area Contingency Plan Los Angeles/Long Beach (2008)

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Table CR-2. OSPR Cross Index For Title 14 CCR 817.02.

Section 817.02	Description	Location/Title[1]	
		VENOCO OSCP	ACP
(2)	ID party to maintain recovered oil/oily waste	N.7.2	
(3)	ID site criteria to select temporary storage sites	N.7.3	
(4)	ID permits required	N.4, N.7.1	
(5)	Methods to expedite permitting process	N.7.1	
(i)	**Oiled Wildlife Care Requirements**		
(1)	Utilize OWCN	2.3.3.10, M.4	
(2)	Or ID procedures	Not applicable	
(j)	**Training**		
(1)	Response training	K.1, K.2.2, K.2.4	
(2)	Operational risk reduction training	K.2.1	
(3)	Safety training	K.2.1, K.2.2	
(4)	Record Maintenance	K.4.1	
(k)	**Drills and Exercises**		
(1)	Drills and exercises program	K.3	
(2)	Training as creditable drills	K.3	
(3)	Equipment deployment drill requirement	K.3	
(4)	Design of drills	K.3	
(5)	Record maintenance	K.4.2	

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[1] Venoco OSCP: Venoco Oil Spill Contingency Plan South Ellwood Field; ACP: Area Contingency Plan Los Angeles/Long Beach (2008)

Table CR-3. DOT/PHMSA Cross Index For 49 CFR Part 194

Section	Description	VENOCO OSCP
194.103	Significant and substantial harm: operator's statement	1.4
194.105	Worst case discharge	R.2
194.107	General response plan requirements:	
	(a) Resource planning requirements	Entire Plan
	(b) Language requirements.	Entire Plan
	(c) Consistency with NCP and ACP(s)	1.6
	(d) Each response plan must include:	
	(1) Core Plan Contents	
	(i) An information summary as required in 194.113	1.1
	(ii) Immediate notification procedures	2.2
	(iii) Spill detection and mitigation procedures	2.3.2, Appendix B, R.1.4
	(iv) The name, address, and telephone number of the oil spill response organization, if appropriate.	2.5
	(v) Response activities and response resources	2.3, 2.4, Appendix F, I, and J
	(vi) Names and telephone number of federal, state, and local agencies which the operator expects to have pollution control responsibilities or support	Tables 2-3, and 2-19
	(vii) Training procedures	K.1, K.2, R.1.7
	(viii) Equipment testing	B.3.7, K.3
	(ix) Drill types, schedules, and procedures	K.3
	(x) Plan review and update procedures	1.7
	(2) An appendix for each response zone	Appendix R
194.109	Submission of state response plans	Entire Plan
194.113	Information summary	
	(a) Core plan information summary	
	(1) Name and address of operator	1.1, R.1.2.1
	(2) Description each response zone	R.1.2.3
	(b) Response zone appendix information summary	
	(1) Core plan information summary	1.1, R.1.2
	(2) Name, telephone of qualified individual available on 24-hour basis	1.1, R.1.2.2

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[1] Venoco OSCP: Venoco Oil Spill Contingency Plan South Ellwood Field; ACP: Area Contingency Plan Los Angeles/Long Beach (2008)

Table CR-3. DOT/PHMSA Cross Index For 49 CFR Part 194

Section	Description	VENOCO OSCP
	(3) Description of response zone	R.1.2.3
	(4) List of line sections for each pipeline	R.1.2.4
	(5) Significant and substantial harm determination	1.4, R.1.2.5
	(6) Type of oil and volume of WCD	R.1.2.6, R.2
194.115	Response resources	R.1.5, Appendix F, G and H
194.117	Training	Appendix K, R.1.7
194.121	Response plan review and update procedures	1.7
App. A	Guidelines for the preparation of response plans	
	Section 1 Information summary	1.1
	Section 2 Notification procedures	2.2, R.1.3
	Section 3 Spill detection and on-scene spill mitigation procedures	2.3, Appendix B, R.1.4
	Section 4 Response activities	2.3, 2.4 Appendix I, J, N, P, and R.1.5
	Section 5 List of contacts	2.5, R.1.6
	Section 6 Training procedures	K.1, K.2, K.4.1, R.1.7
	Section 7 Drill procedures	K.3, K.4.2, R.1.8
	Section 8 Response plan review and update procedures	1.7, R.1.9
	Section 9 Response zone appendices	See Entire Plan

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[1] Venoco OSCP: Venoco Oil Spill Contingency Plan South Ellwood Field; ACP: Area Contingency Plan Los Angeles/Long Beach (2008)

Table CR-4. USCG Cross Index For 33 CFR Part 154 Subpart F

Section	Description	VENOCO OSCP
154.1030 (a)	Plan written in English	Entire plan
154.1030 (b)	Required sections:	
	(1) Introduction And Plan Content	User's Guide, Table of Contents, 1.1
	(2) Emergency Response Action Plan	2.0, (also separate plan required by Santa Barbara County)
	(i) Notification Procedures	2.2, 2.5, Appendix C
	(ii) Facility Spill Mitigation Procedures	Appendix T, 2.3, 2.4
	(iii) Facility Response Activities	2.1, 2.3.1, 2.3.2, 2.3.3, Appendix D
	(iv) Fish And Wildlife Sensitive Environments	Appendix G, H, M
	(v) Disposal Plan	Appendix N
	(3) Training And Exercises	Appendix K
	(i) Training Procedures	K.2, K.4.1
	(ii) Exercise Procedures	K.3, K.4.2
	(4) Plan Review And Update Procedures	1.7
	(5) Appendices	
	(i) Facility-Specific Information	1.1, Appendix A
	(ii) List Of Contacts	1.1, 2.5
	(iii) Equipment List And Records	Appendix F
	(iv) Communications Plan	Appendix L
	(v) Site-Specific Safety And Health Plan	Appendix O
	(vi) List Of Acronyms And Definitions	Appendix U

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[1] Venoco OSCP: Venoco Oil Spill Contingency Plan South Ellwood Field; ACP: Area Contingency Plan Los Angeles/Long Beach (2008)

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[1] Venoco OSCP: Venoco Oil Spill Contingency Plan South Ellwood Field; ACP: Area Contingency Plan Los Angeles/Long Beach (2008)

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1.1 FACT SHEETS

1.1.1 South Ellwood Field

Name of Facility:	**South Ellwood Field** is comprised of: • Ellwood Marine Terminal • Ellwood Onshore Facility and its associated pipelines • Ellwood Pier • Platform Holly and its associated pipelines • Beachfront Lease (PRC 421) and its associated facilities • Ellwood Pipeline Inc. – Line 96 Pipeline
Name, Address and Telephone Number of Owner / Operator:	**Venoco, Inc.** 6267 Carpinteria Avenue, Suite 100 Carpinteria, CA 93013 (805) 745-2100 (805) 745-1406 (fax)
Mailing Address:	**Venoco, Inc.** 6267 Carpinteria Avenue, Suite 100 Carpinteria, CA 93013
Emergency Telephone Number:	**1-888-836-6261**
Name, Address, Telephone Number To Whom Correspondence Should Be Sent:	**Keith Wenal** 6267 Carpinteria Avenue, Suite 100 Carpinteria, CA 93013 (805) 745-2259 (work) (805) 682-1888 (home) (805) 705-9307 (cellular)
Name, Address, Telephone Number Of Agent For Service Of Process:	**Brian Donovan** 370 17th St. Suite 3900 Denver, CO 80202 (303) 600-2911 (work) be.donovan@venocoinc.com

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IIRT:

Name And Telephone Number Of Qualified Individual (QI):	**Jeff MacDonald** (805) 961-2301 (work) (805) 455-9666 (cell) (805) 736-1750 (home)
Name and Telephone Number Of Designated Alternate (Alternate QI):	**Person-In-Charge** (805) 961-2375 (work)

SIRT:

Name And Telephone Number Of Qualified Individual (QI):	**Larry Huskins** (805) 745-2199 (work) (805) 816-2790 (cell) (805) 755-4921 (home)
Name and Telephone Number Of Designated Alternate (Alternate QI):	**Ian Levitt** (805) 745-2196 (work) (805) 722-0772 (cell) (805) 845-9122 (home)

OSPR Reasonable Worst Case Discharge:	30,811 bbl
EPA Worst Case Discharge:	65 x 10^3 bbl (27.3 x 10^5 gal)
DOT/PHMSA Worst Case Discharge:	169 bbl
USCG Worst Case Discharge:	602.1 bbl

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1.1.3 Ellwood Onshore Facility

Name of Facility:	**Ellwood Onshore Facility**
Business Address:	7979 Hollister Avenue Goleta, CA 93117
Business Telephone:	(805) 961-2338
Fax Phone:	(805) 961-2349
Name and Address of Owner / Operator:	**Venoco, Inc.** 6267 Carpinteria Avenue, Suite 100 Carpinteria, CA 93013
24-Hour Owner / Operator Contact:	Ellwood Onshore Facility (805) 961-2375
Location of the Facility:	7979 Hollister Avenue. West of Goleta on the south side of the Union Pacific Railroad tracks and 1,600 feet southwest of the intersection of Highway 101 and Hollister Avenue. Sandpiper Golf Course is located to the east of the plant. Bacara Spa and Resort is located to the west of the property. The property is 900 feet inland from the shore. T 4 N, R 29 W.
Type of Facility:	Oil and gas processing facility.
Size of Facility:	Approximately 4.5 acres. Buildings, tanks, and equipment occupy approximately 3.7 acres.
Major Components:	**Crude Oil Processing System.** Emulsion is preheated in emulsion/process crude heat exchangers and an emulsion/waste water heat exchanger. From the exchangers, the emulsion is introduced into one of three heater treaters where it is chemically treated allowing water to settle. Dry crude from the heater treaters is stripped of H_2S with sweet gas in the stripper columns. Dry, stripped crude proceeds to a surge tank for settling and interim storage. Dry crude from the surge tank is pumped through heater exchangers to a LACT surge tank and sold through a LACT unit.

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Major Components (continued):

Gas Sweetening System. The system handles platform gas, LPG, and NGL sales gas, and seep gas. Natural gas from the platform is filtered for removal of entrained liquids and sulfur is removed via the Lo-Cat unit. The sweetened gas is compressed, processed to remove carbon dioxide, and metered into the sales gas pipeline. The gas processes produces NGLs, LPGs, and sulfur, which are stored and transported to market by pipeline and truck. Seep gas is processed, compressed, and metered into the sales gas pipeline. Seep gas is also processed through the iron sponge, compressed and metered into the sales gas pipeline.

Produced Water Disposal System. Water removed from the oil emulsion in heater treaters is transferred to a settling tank where additional oil may break out. From the settling tank, water is pumped down the onsite waste disposal well.

Vapor Recovery System. The system collects vapors from various systems throughout the facility, compresses them to about 50 psig, and adds them to the sour gas at the inlet of the Lo-Cat unit gas sweetening system. The vapor recovery system consists of 2 skid-mounted vapor recovery units operating in series.

Process Drain System. This system includes a hydrocarbon sump, crude oil sump (currently out-of-service), and 2 sump pumps.

Relief System. The relief system includes a fuel gas scrubber, 3 Hirt burners, and a flare scrubber. Relief gas from all pressure vessels are incinerated in the Hirt vent burner. Vapors derived from the gas sweetening and gas conditioning system are vented to the fuel gas scrubber.

Throughput:

Permitted capacity is 20,000 BPD of oil and 20 MMSCFD of sour gas. Current APCD permit limits throughput to 13,000 BPD of oil and 13 MMSCFD of sour gas.

Site Security:

Manned 24 hours per day, 7 days per week. A minimum of 4 persons on duty at all times. Surrounded by an 8-foot-high, chain link fence with 3 access gates.

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1.1.4 Ellwood Pipeline Inc. (EPI) – Line 96 Pipeline

Name of Facility:	**Line 96 Pipeline**
Business Address:	6267 Carpinteria Ave. Carpinteria, CA 93013
Business Telephone:	(805) 745-2100
Business Fax:	(805) 745-1816
Name and Address of Owner:	**Ellwood Pipeline, Inc.** 6267 Carpinteria Avenue, Suite 100 Carpinteria, CA 93013
24-Hour Owner Contact:	1-800-836-6261
Name and Address of Operator	**Venoco, Inc.** 6267 Carpinteria Avenue, Suite 100 Carpinteria, CA 93013
24-Hour Operator Contact:	Ellwood Onshore Facility (805) 961-2375
Location of Facility:	Line 96 begins immediately adjacent to the Ellwood Onshore Facility (EOF) at a valve box just outside the primary EOF entrance gate where the route travels north from EOF under Highway 101 and Calle Real Street and then turns west and continues along the north side of Highway 101, tying into the Plains Pipeline L.P. (PPLP) Pipeline – Coastal Segment. T 4 N, R 29 W.
Size of Facility:	8.5-mile-long, 6-inch-diameter oil pipeline.
Throughput:	271 bph of Group III crude oil in batch shipments not to exceed 13,000 bpd

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1.1.5 Ellwood Pier

Name of Facility:	**Ellwood Pier**
Business Address:	7979 Hollister Avenue Goleta, CA 93117
Business Telephone:	(805) 968-9341
Name and Address of Operator:	**Venoco, Inc.** 6267 Carpinteria Avenue, Suite 100 Carpinteria, CA 93013 **ExxonMobil** 7760 Via Jero Rd. Goleta, CA 93117
24-Hour Owner / Operator Contact:	Ellwood Onshore Facility (805) 961-2375
Location of Facility:	Latitude: 34°21'23" N Longitude: 119°54'19" W. T 4 N, R 29 W.
Facility Description:	Bulk chemical and fuel liquids are transferred regularly. Water is stored in a 250-bbl tank for fire protection. Crew boat is used to transport personnel, supplies, and equipment to/from platform.
Site Security:	Access restricted by an 8-foot-high, chain link fence. Gate is kept closed and locked unless access is required. A security guard is posted at the pier shelter. The guard communicates with persons at the front gate and on the pier via an intercom system. He controls access remotely onto the property via the electric gate and onto the pier via an arm-type gate.

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1.1.6 Platform Holly

Name of Facility:	**Platform Holly**
Business Address:	7979 Hollister Avenue Goleta, CA 93117
Business Telephone:	(805) 961-2360
Name and Address of Owner / Operator:	**Venoco, Inc.** 6267 Carpinteria Avenue, Suite 100 Carpinteria, CA 93013
24-Hour Owner / Operator Contact:	Ellwood Onshore Facility (805) 961-2375
Location of Facility:	Located on State Offshore Lease PRC 3242, in the Santa Barbara Channel, approximately 10,000 feet southwest of Coal Oil Point, Santa Barbara County, California. Latitude: 34°23'23.2" N Longitude: 119°54'19.7" W. Water depth is approximately 211 feet.
Type of Facility:	Offshore oil and gas production and drilling facility. Facilitates production from the South Ellwood Field, located on PRC 3120 and 3242.
Size of the Facility:	Drilling, compressor, production, and lower decks occupy approximately 16,000 square feet.
Major Components:	Triple-decked drilling and production platform with 30 well slots. Production, drilling, compressor and lower decks. Production office on production deck. Boat landing on lower deck. Heliport on compressor deck. One, triple-mast, 142-foot-high, workover rig for well maintenance and workover operations. One 6.625-inch, outside diameter, pipeline transports oil/water emulsion to Ellwood Onshore Facility for processing. Normal operating pressure is less than 550 psig. One, 6.625-inch, outside diameter pipeline transports produced gas to Ellwood Onshore Facility for processing. Normal operating pressure is less than 250 psig. One power cable to Platform Holly.

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Throughput:	20,000 BPD of oil and water (permitted). 20 MMSCFD of gas (permitted).
Site Security:	Platform Holly is manned 24-hours per day, seven days per week. There is a minimum of two platform operators on duty at all times.

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1.1.7 Beachfront Lease

Name of Facility:	**Beachfront Lease (State Lease PRC 421)**
Business Address:	7979 Hollister Avenue Goleta, CA 93117
Business Telephone:	(805) 961-2338
Name and Address of Owner / Operator:	**Venoco, Inc.** 6267 Carpinteria Avenue, Suite 100 Carpinteria, CA 93013
24-Hour Owner / Operator Contact:	Ellwood Onshore Facility (805) 961-2375
Location of Facility:	Located on State Offshore Lease PRC 421, adjacent to the Sandpiper Golf Course, near Hollister Avenue and Highway 101. Latitude: 34°25'29" N Longitude: 119°54'17" W.
Size of the Facility:	Beachfront occupies approximately 10,000 feet of pier space.
Major Components:	One production well, one injection well, and well cellar with an 11-foot-diameter structure. Application pending to change pipeline to tie into Ellwood Onshore Facility and bring wells back on production. The facility is currently not producing.
Historical Components:	To be replaced when wells are brought back on production. One 60-bbl, free water, knockout drum. One 1,000-bbl crude oil storage tank with cone roof. One production pumping unit driven by a 77-hp, IC engine.
Historical Throughput:	200 BPD of oil. 1,000 BPD of water.
Site Security:	Surrounded by an 8-foot-high chain link fence. Gate is kept closed and locked unless access is required. Site checked twice daily by contracted security firm.

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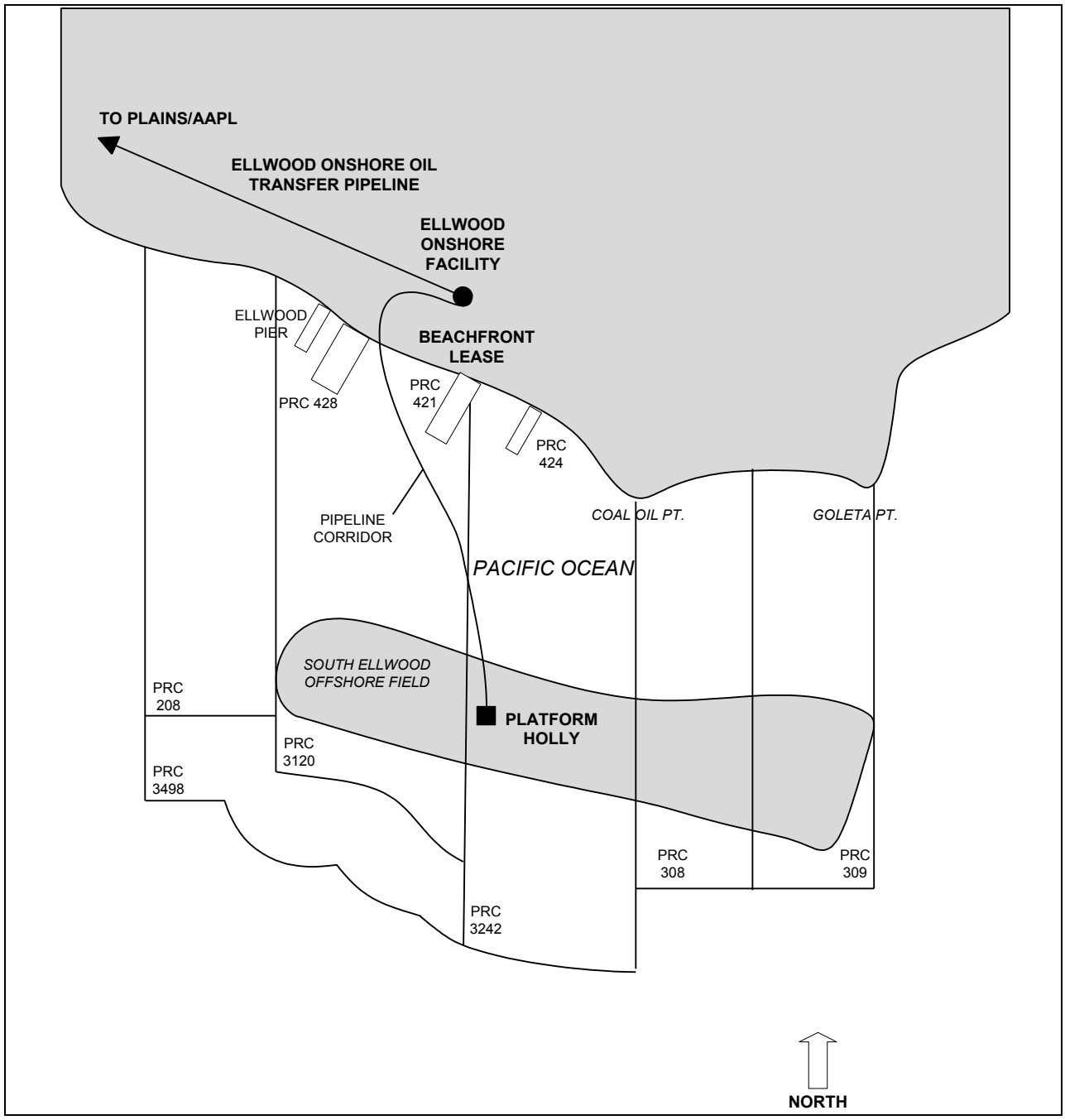

Figure 1-1. South Ellwood Field

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1.2 EPA CERTIFICATION

APPLICABILITY OF SUBSTANTIAL HARM
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 [X] No [ ] Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and, within any storage area, does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground storage tank plus sufficient freeboard to allow for precipitation? Yes [ ] No [X] Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? Yes [X] No [ ] Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance such that a discharge from the facility would shutdown a public drinking water intake? Yes [ ] No [X] Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in the amount greater than or equal to 10,000 gallons within the last 5 years? Yes [ ] No [X]
CERTIFICATION
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining information, I believe that the submitted information is true, accurate, and complete.
Signature:
Name: Keith Wenal
Title: Safety Manager
Date: 5/1/2008

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1.3 OSPR CERTIFICATION

CERTIFICATION
I certify to the best of my knowledge and belief under penalty of perjury and the laws of the State of California, that the information contained in this contingency plan is true and correct and that the plan is both feasible and executable.
Signature:
Name: Keith Wenal
Title: Safety Manager
Date: 5/1/2008

1.4 DOT/PHMSA CERTIFICATION

Statement of Potential for Significant and Substantial Harm from a Worst Case Discharge from Ellwood Onshore Oil Transfer Pipeline

A worst case release from the oil pipeline could potentially cause significant and substantial harm to the environment, as defined by the Oil Pollution Act of 1990 and 49 CFR 194.5. In addition, this plan is being submitted to DOT/PHMSA because the line falls within the category in 49 CFR 194.101(a). The line does not fall within the exemption in 49 CFR 194.101(b)(2)(ii) because in the potential event of a worst case discharge occurring, that discharge could impact navigable waters within 4 hours after the initiation of such a discharge.

Venoco Inc. has obtained the necessary private personnel and equipment, through contract or other means, to respond to a worst-case discharge or a substantial threat of a worst-case discharge to the maximum extent practicable.

Signature of the Qualified Individual:

Jeff MacDonald

5/1/2008

Date

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1.5 PURPOSE

The Oil Spill Contingency Plan (OSCP) for the South Ellwood Field provides spill prevention and response guidelines for use by Venoco, Inc. (herein referred to as Venoco) and its contractors in operations and in response to an emergency incident. These response guidelines are not intended to supplant the use of common sense or actions not specifically mentioned in this plan, but necessary to mitigate a problem. Depending on the incident, each response may require different or modified approaches or sequences of events to reach the primary objective of the company; that is, to ensure the safety of life, protection of the environment, and protection of property.

1.6 SCOPE OF THE PLAN

The OSCP for the South Ellwood Field has been prepared to meet the requirements of the Oil Pollution Act of 1990 (OPA 90). OPA 90 amended §311 of the Clean Water Act to augment federal response authority, increase penalties for unauthorized spills, expand the federal response framework, and provide greater emphasis on preparedness and response activities.

This OSCP addresses spill/emergency incidents at the South Ellwood Field. The Plan addresses the following regulations that pertain to oil spill/emergency preparedness and response:

- 33 CFR Part 154, Subpart F (USCG).
- 40 CFR Part 112.20 and 112.21 (EPA).
- 49 CFR Part 194 (DOT/PHMSA).
- Title 14, Division 1, Subdivision 4, Chapter 2, Subchapter 3, Section 815-817 (State of California, OSPR).
- Santa Barbara County Ordinance 2919

In addition, Santa Barbara County requires Venoco to have an emergency response plan for the South Ellwood Field. The "**Venoco, Inc./Ellwood Pipeline Inc. (EPI) Emergency Action Plan: South Ellwood Field and EPI Line 96 Pipeline**" is a separate volume that addresses all other emergencies, excluding oil spills. The Emergency Action Plan serves as the field response manual required by county, state and federal agencies.

At the front of The Plan are two tabbed sections: the **User's Guide** that summarizes the organization of the Plan and the **Cross-Reference** that provides a reference to applicable regulations.

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The OSCP for the South Ellwood Field:

- Is consistent with the current National Contingency Plan (40 CFR Part 300) and will be revised as necessary to be consistent with the 11th District USCG Los Angeles/Long Beach Area Contingency Plan (Northern/Southern Sector) and EPA Region IX Regional Contingency Plan.
- Identifies a Qualified Individual and Designated Alternate with full authority to implement removal actions and ability to communicate immediately with appropriate federal authorities and responders.
- Identifies and ensures availability of resources to remove, to the maximum extent practicable, a worst-case discharge.
- Describes training, announced and unannounced drills, and response actions for facility personnel.
- Is updated periodically.
- Is to be resubmitted for approval of each significant change.

1.7 PLAN REVIEW AND UPDATE PROCEDURE

1.7.1 Plan Maintenance

The **HES Coordinator** maintains the OSCP for the South Ellwood Field. Each recipient of the plan is encouraged to submit recommendations for corrections, additions, or revisions to the **HES Coordinator**.

For State compliance, the plan will be resubmitted for review to conform with the date set under OPA 90 (i.e., every five years). If no changes are required, Venoco will send responsible agencies a letter stating that the plan remains valid as submitted.

Revisions or amendments to the OSCP will be submitted to responsible agencies for information or approval under the following conditions:

- There is a change that significantly reduces response capabilities.
- There is a significant change in the worst case discharge scenario.
- There is a change in the type of oil handled, stored or transported.
- There is a change in the facility's configuration that significantly affects the information in the plan.
- There is a relocation or replacement of the pipeline that substantially affects the information included in the OSCP, such as results in a change to the worst case discharge volume.
- There is an extension of an existing or construction of a new pipeline.
- There is a change in the name(s) or capabilities of the oil spill removal organization named in the plan.
- There is a change in the Qualified Individual and/or Designate Alternate.
- There is a change in ownership

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- There is a change in personnel and/or telephone numbers.
- There is a change in spill/emergency response procedures.
- There is a significant change in the Area Contingency Plan.
- There is a change in the regulations.
- There is a change that significantly affects implementation of the plan.
- Five years have elapsed from the date of approval of responsible agencies.

The OSCP will be revised within 15 days of a change listed above. Plan holders will be provided revisions via an update notice. If no changes are required, Venoco will send responsible agencies a letter stating that the plan remains valid as submitted.

1.7.2 Post-Incident/Drill Critique and Update

In order to improve the response program to benefit from lessons learned during actual incidents and during drills, key members of the response organization will evaluate the effectiveness and efficiency of an incident or drill response. Revisions to the OSCP will be made, as necessary. In the case of an actual spill, Venoco management will submit the review to the OSPR Administrator within 90 days following completion of the response cleanup.

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2.1 RESPONSE ORGANIZATION

Venoco, Inc has organized an emergency response organization using the structure of the Incident Command System (ICS). The organization consists of two interrelated response teams, an Initial Incident Response Team (IIRT) and a Sustained Incident Response Team (SIRT). Diagrams of the response teams are shown in Figure 2-1 and 2-2. Duty Sheets for the response organization are included in Appendix D of the South Ellwood Field OSCP.

Venoco's response to an incident is organized around the Venoco Emergency Management System (VEMS) functions in a response to:

- Mobilize resources to control and contain an incident with rapid, responsible and effective actions.
- Minimize damage, injury and environmental effects from the incident.
- Manage information accurately for tactical and strategic decisions.
- Maintain a positive relationship with government agencies, the media and the public.

2.1.1 Initial Incident Response Team

The Venoco Person-In-Charge (PIC) at the scene heads the IIRT as the Incident Commander (IC). The minimum elements of the ICS are three positions: IC, Safety and Operations. The IIRT consists of all facility personnel on site at the time of detection of the incident. Clean Seas provides the primary response.

The IIRT is responsible for containment and cleanup if:

- The spill source has been controlled.
- The IIRT has adequate resources to handle the incident.

2.1.2 Sustained Incident Response Team

The Sustained Incident Response Team (SIRT) is organized into five functional sections: Command, Operations, Planning, Logistics, and Finance and is activated to the level necessary, if:

- The spill requires additional responses not available to the IIRT.
- The source remains uncontrolled.
- The spill threatens to go or goes offsite.
- The spill threatens the ocean.
- The exact nature of the incident is unclear.

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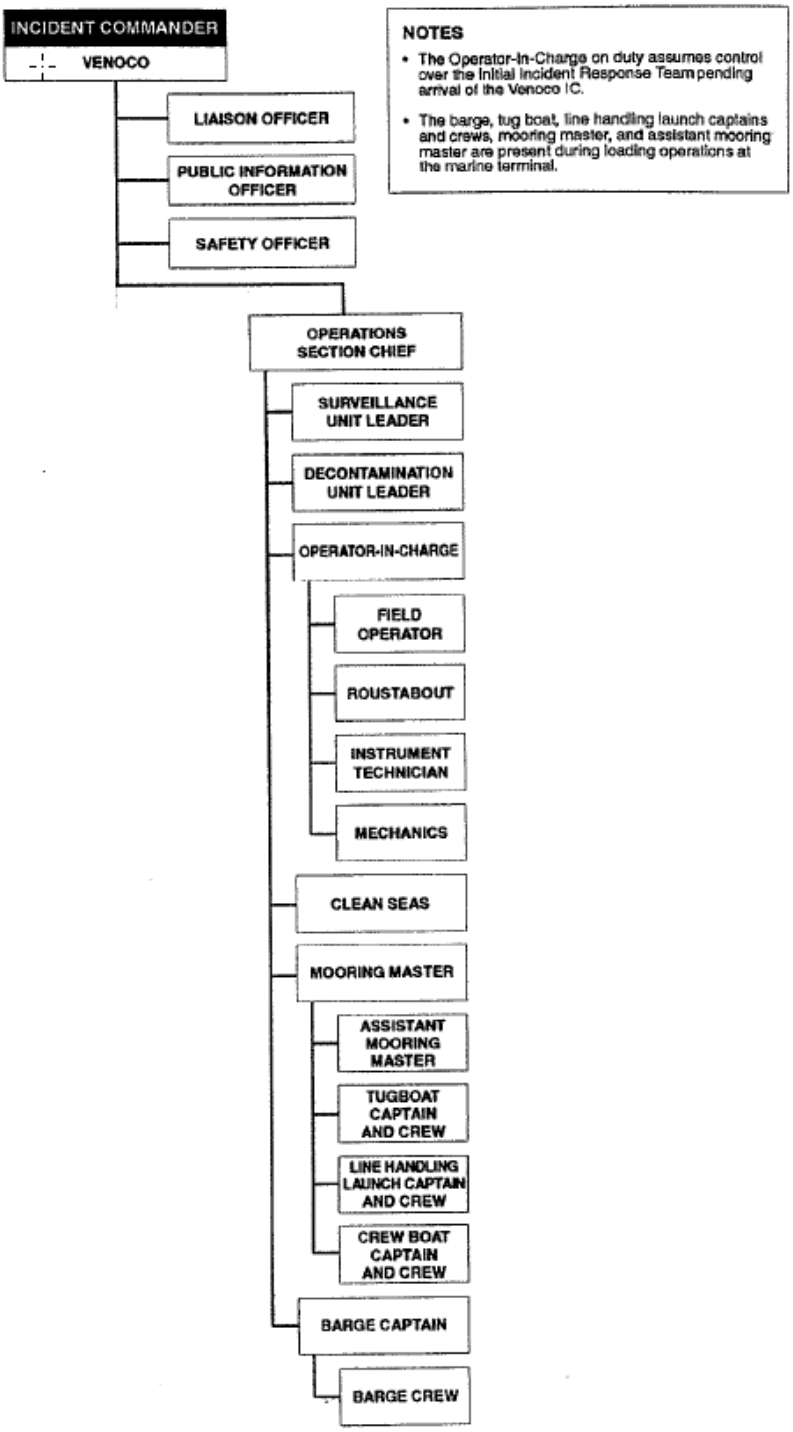

Figure 2-1. Organization of Initial Incident Response Team (IIRT)

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The IC of the IIRT serves initially as the Incident Commander until relieved by the IC of the SIRT. Each Section Chief calls up team members of his/her section as appropriate. The SIRT (see Figure 2-2) includes Clean Seas, which is responsible for on-water containment, recovery and cleanup and shoreline protection, and NRC Environmental Services (NRCES) provides on-shore spill response and shoreline cleanup. The primary and alternate IC IIRT and team members of the SIRT, including response times, are provided in Table 2-1.

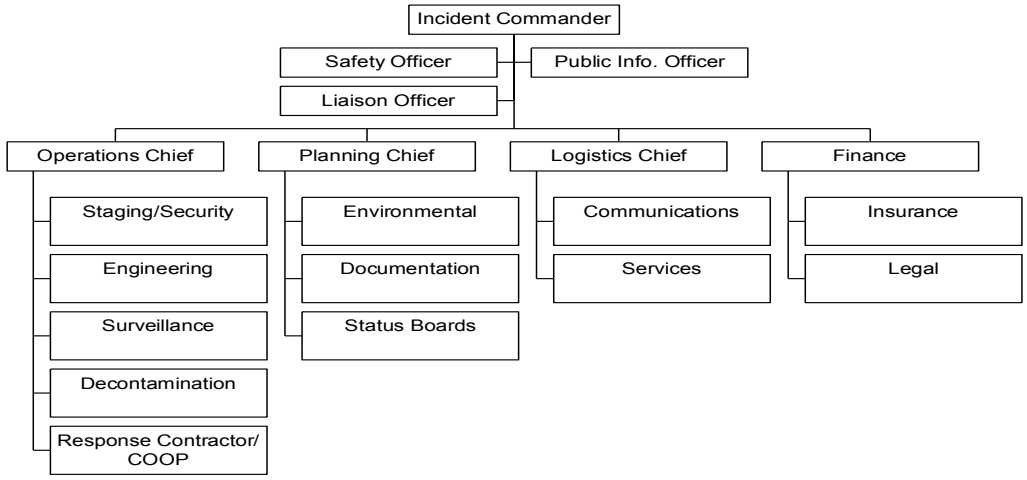

Figure 2-2. Organization of Sustained Incident Response Team (SIRT)

Table 2-1. IIRT Incident Commander And Sustained Incident Response Team

Position	Primary/Alternate	Location	Response Time
IIRT Incident Commander	(P) Jeff MacDonald (A) Person-In-Charge	Ellwood Onshore Facility Ellwood Onshore Facility	30 minutes 45 minutes
SIRT Incident Commander	(P) Larry Huskins (A) Ian Livett	Carpinteria Office	45 minutes 30 hours
Safety Officer	(P) Will Henderson (A)	Carpinteria Office Carpinteria Office	30 minutes 30 minutes
Liaison Officer	(P) Pat Corcoran (A) Bruce Carter	Carpinteria Office Carpinteria Office	30 minutes 30 minutes
Public Information Officer	(P) Lisa Rivas (A) Steve Greig	Carpinteria Office Carpinteria Office	30 minutes 30 minutes
Operations Section Chief	(P) Jeff MacDonald (A) Doug Taylor	Ellwood Onshore Facility Carpinteria Gas Plant	30 minutes 15 minutes
Staging / Security Unit Leader	(P) NRCES (A) NRCES	Ventura Ventura	45 minutes 45 minutes

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Table 2-1. IIRT Incident Commander And Sustained Incident Response Team

Position	Primary/Alternate	Location	Response Time
Engineering Unit Leader	(P) (A)	Carpinteria Office Carpinteria Office	60 minutes 30 minutes
Surveillance Unit Leader	(P) Clean Seas (A) Clean Seas	Carpinteria Carpinteria	30 minutes 30 minutes
Decontamination Unit Leader	(P) NRCES (A) NRCES	Ventura Ventura	45 minutes 45 minutes
Planning Section Chief	(P) Zack Schock (A) Chris Peltonen	Carpinteria Office Carpinteria Office	30 minutes 30 minutes
Environmental Unit Leader	(P) John Garnett (A) Eric Bridgford	Carpinteria Office	30 minutes
Documentation Unit Leader	(P) Martha Saavedra (A) Jose Rivera	Carpinteria Office Carpinteria Office	30 minutes 30 minutes
Situation Unit Leader	(P) Tony Soriano (A) Jon Schurke	Carpinteria Office Carpinteria Office	30 minutes 30 minutes
Logistics Section Chief	(P) George Ramsey (A) Bob Van Nostrand	Carpinteria Office Carpinteria Plant	45 minutes 45 minutes
Communications Unit Leader	(P) Help Desk IT Help Desk	Carpinteria Office	45 minutes
Services Unit Leader	(P) Tiffany Tapp (A) Nicole Barnnick	Carpinteria Office Ellwood Onshore Facility	45 minutes 45 minutes
Finance/Claims Section Chief	(P) Heather Hatfield (A) Paul Hilgenkamp	Denver Office Denver Office	24 hours 24 hours
Legal Advisor	(P) Nicole Muell	Denver Office	24 hours
	(P) (A)		
	(P)		

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2.1.3 Qualified Individual (QI) and Designated Alternate

The QI/Designated Alternate is responsible for the implementation of this plan. The QI will immediately notify the State IC of this transfer of responsibilities and authorities. Venoco's QI and Designated Alternate are English-speaking representatives, located in the U.S., available on a 24-hour basis, and capable of arriving at the facility in a reasonable period of time (no more than 12 hours). They are familiar with the plan and trained in the responsibilities and authorities of the QI/Designated Alternate. They are knowledgeable in:

- Applicable Federal and State OSHA standards in emergency response operations.
- How to implement the OSCP.
- Requirements of the National Contingency Plan and Area Contingency Plan as required by OPA 90.
- Spill prevention and response provisions and procedures of the plan.
- Resources committed or that could potentially be committed for an incident.
- Procedures for obtaining or obligating funds for response activities and persons to contact who could expedite such actions.
- Ability to assess the need for additional resources and to make call-outs and contractual agreements.
- Ability to act as liaison between the facility and the State IC and FOSC.

Responsibilities and authority of the QI/Designated Alternate include:

- Implement the OSCP for the South Ellwood Field.
- Ensure internal and external notifications are made.
- Assume role of IC of the response team.
- Initiate communication with the FOSC and State IC. Continue to act as liaison with federal, state, and local officials.
- Obligate either directly or through prearranged contracts any funds/monies required to carry out all necessary or directed response activities.
- Develop strategic objectives and direct overall response operations.
- Approve all response plans for the company and the ordering/release of resources.
- Assess the possible hazards to human health and environment due to the release.
- Assess and implement prompt removal actions to contain and remove the substance released.
- Coordinate rescue and response actions.
- Review and approve of press releases.

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2.2 NOTIFICATION AND REPORTING PROCEDURES

2.2.1 Notification Procedures

An important step in emergency response is the notification of others involved in the incident. Notification is essential to:

- Comply with local, state and federal regulations.
- Activate the response organization.
- Alert Company management.
- Inform third parties (adjacent operators, community) of an incident.
- Obtain assistance and cooperation of regulatory agencies.
- Mobilize response resources.

Venoco has in place a set of well-defined internal and external notification procedures (provided in Table 2-2E). These notification procedures establish a clear order of priority for notification and, in the event of an incident, must be followed to completion. **If the responsible person is unable to notify a person listed, then the responsible person must make the notifications (if any) for that person (see Table 2-2E).**

The form "Spill Response Notification Form" (Appendix C) will be used to provide accurate oil spill incident information for the initial and follow-up notifications to federal, state, and local agencies. Copies of this form will be kept in the offices of the IIRT and SIRT ICs and designated alternates and the Liaison Officer.

Initial notifications will not be delayed pending collection of all information on the form. All required government agency notifications will be made as soon as possible after the discovery of the spill or threatened discharge of oil. Follow-up notifications will be made by the Liaison Officer as directed and approved by the Incident Commander.

2.2.2 Agency Notification and Reporting Requirements

A summary of agency notification and reporting requirements is provided in Table 2-3.

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TABLE 2-2E: INITIAL EMERGENCY NOTIFICATION PROCEDURES

Responsible Person	Notification Made	Telephone Number
Incident Observer	1. Facility Supervisor or Person-In-Charge (PIC)	EOF, 961-2375 Holly, 961-2360
IIRT IC (Facility Supervisor or Person-In-Charge) Do not delay if calling Clean Seas and/or NRCES: Provide the following information if known: • Time of event • Location • Type of oil event • Release volume (est.) • Current isolate, contain, control measures	1. Activate IIRT and notify SIRT IC based on assessment of situation	Table 2-16
	2. (911) – Santa Barbara County Emergency Response	911 or (805) 683-2724 if using cell
	3. Adjacent Facility PIC	EOF, 961-2375 Holly, 961-2360
Adjacent Facility PIC	1. Clean Seas to assist or standby (if spill threatens ocean) 2. NRCES for terrestrial spill 3. **If oil threatens or enters navigable waters (including creeks, ocean)** **or** **If spill to land (>1 bbl) or offsite emergency call:** National Response Center CA Emergency Management Agency(Cal-EMA)	(805) 684-3838 If no answer: (805) 684-4719 (800) 337-7455 (24-hr) (800) 424-8802 (800) 852-7550
SIRT IC	1. Operations Section Chief	Table 2-16
	2. Planning Section Chief	Table 2-16
	3. Logistics Section Chief	Table 2-16
	4. Finance Section Chief	Table 2-16
	5. Liaison Officer	Table 2-16
	6. Safety Officer	Table 2-16
	7. Public Information Officer	Table 2-16
	8.	

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TABLE 2-2E: INITIAL EMERGENCY NOTIFICATION PROCEDURES

Responsible Person	Notification Made	Telephone Number
Operations Section Chief	Operations staff as needed	Table 2-16
Logistics Section Chief	Logistics staff as needed	Table 2-16
Finance Section Chief	Finance staff as needed	Table 2-16
Planning Section Chief	Planning staff as needed	Table 2-16

Note:

Personnel safety and response considerations always take precedence over notification procedures.

Notifications must be followed to completion. If the responsible person is unable to notify a person noted, then the IC must make the notification (if any) for that person.

Verbal notification of the public if affected may be necessary. VENOCO will rely on public law enforcement agencies for assistance.

Each notification of Company personnel should be logged in the Telephone Log with the following information (See Appendix C for an Agency Telephone Log):

1. Time of notification
2. Team member's name
3. Assigned duty location
4. Estimated arrival at the prescribed duty location

Other agency notifications may be required; IIRT IC must review Table 2-3 and assign notifications to Liaison Officer or other appropriate person. (For agency phone numbers see Table 2-19).

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Table 2-3. Agency Notification and Reporting Requirements

(Note: For agency telephone numbers, see Directory, Table 2-19)

Agency	Particulars	Verbal Report	Written Report
National Response Center	Notify for any discharge into or threatening navigable waters, including surface water and drainages, and shorelines.	Immediately	None required.
California Emergency Management Agency (Cal-EMA)	Notify immediately of any release of 1 bbl (42 gallons) or more to land or any amount to State waters.	Immediately	
	Notify of any significant release of hazardous materials with offsite impacts	Immediately	Written report, using form found in Title 19 CCR, Section 2705 for releases of extremely hazardous or CERLA-listed substances over the RQ within 30 days.
United States Coast Guard – Long Beach and Santa Barbara	Notify for any discharge that occurs on or may impact marine waters Long Beach office jurisdiction is from Point Conception to the north, to the San Diego/Orange County lines to the south. USCG requests to be notified.	Immediately if determined necessary	None required.
United States EPA – Region IX	Notify for any spill that has impacted surface waters of the U.S., or any spill on land that threatens surface waters of the U.S.	Immediately, if determined necessary (NRC should notify).	For a facility with an SPCC Plan, provide a written report within 30 days of the spill for any spill >1,000 gallons or when 2 spills, meeting the verbal reporting requirements, occur within a 12-month period.
PHMSA/Dept of Transportation	Notify NRC if the failure of a DOT-pipeline system results in the release of oil ***and*** any of the following occurs: (1) fire or explosion not intentionally set by the operator; (2) loss of 5 gal or more hazardous liquid or CO_2 ; (3) a fatality; (4) bodily harm to any person, such as loss of consciousness, necessity to carry person from scene, necessity for medical treatment, or disability which prohibits normal activities beyond the day of the accident; (5) estimated property damage, including cost of cleanup, value of lost product, and all property damage exceeding $50,000; (6) pollution to body of water or shoreline	Call NRC to satisfy	File Accident Report (DOT Form 7000-1) no later than 30 days after discovery of accident
Bureau of Safety and Environmental Enforcement	Notify District Manager if over 1 bbl and if involves pipeline notify Office of Facilities, Safety & Enforcement	Immediately if <1 bbl	Written report to BSEE within 15 days

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Table 2-3. Agency Notification and Reporting Requirements
(Note: For agency telephone numbers, see Directory, Table 2-19)

Agency	Particulars	Verbal Report	Written Report
NOAA/National Marine Fisheries	Call for a release >100 bbl or significant impacts to marine wildlife	Immediately	If requested.
CA Dept. of Fish and Game (OSPR)	Call for releases 1 bbl (42 gallons) or more that impact or threaten inland waters, protected habitats and/or marine waters extending 3 miles from shore.	Immediately NRC and Cal-EMA will notify	No specific report required. Report submitted to CAL-EMA is used. CAL-EMA will submit report to DFG/OSPR.
CA Dept. of Transportation "CalTrans"	Call – CalTrans has the responsibility to contain, identify, and clean up hazardous substance spills that occur on highways.	CHP should notify.	None required.
CA Division of Oil, Gas, and Geothermal Resources (DOGGR)	Oil spill; Oil spill, fire, serious injury, significant gas or water release associated with production or drilling operations.	Promptly to Cal-EMA; Promptly to District office	None required. DOGGR utilizes CAL-EMA report and may make inquiries of their own, if further information is required.
CA State Lands Commission	All spills or leakage of oil or liquids pollutants to State waters from production or drilling operations.	Immediately to USCG & Cal-EMA Promptly to CSLC 24hr	Submit written report to CSLC.
CA Highway Patrol	Notify of any spill to a CA highway.	Immediately 911	None required.
CA Occupational Safety and Health Administration (Cal-OSHA)	Call Cal-OSHA in the event of any fatalities or serious injuries resulting in overnight hospitalization or unconsciousness.	As soon as practicable, but no longer than 8 hours after knowledge of the incident.	None required.
California Regional Water Quality Control Board	Notify for produced water spill >10 bbl (420 gallons) or as required by CAL-EMA. RWQCB oversees cleanup and remediation activities.	Upon request of CAL-EMA	The RWQCB utilizes the CAL-EMA report. Provide RWQCB with the CAL-EMA case number.
State Fire Marshal Pipeline Safety Division	Notify of every pipeline leak, explosion or fire regardless of magnitude of incident. Excluded from this requirement are breaks resulting in <5 bbl (210 gallons) spilled from crude oil pipeline in rural areas or in-plant pipeline breaks.	Immediately CAL-EMA should notify	None required.
Santa Barbara	Notify of any incident or release, whether	Immediately to	Spill Response

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Table 2-3. Agency Notification and Reporting Requirements

(Note: For agency telephone numbers, see Directory, Table 2-19)

Agency	Particulars	Verbal Report	Written Report
County Energy & Minerals Division	considered an emergency or not.	Deputy Director	Notification Form (Information on Discharge).
Santa Barbara County Fire Department / Sheriff / 911	Notify for any emergency posing a threat to life, environment, or property	Immediately 911	SBC CAER Form if not an emergency within 1 business day.
Santa Barbara County APCD	Notify of any failure or malfunction of air pollution control or related equipment resulting from an emergency incident.	Within 4 hours of next business day.	Written report within 7 days.
City of Goleta	Notify of any incident or release, whether considered an emergency or not.	Immediately to city manager; Neighborhood Services and Public Safety Director	Spill Response Notification Form (Information on Discharge)

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2.3 RESPONSE PROCEDURES

2.3.1 Objectives

Venoco's operational goal for South Ellwood Field is zero spillage of oil. To achieve this goal, Venoco is committed to utilizing equipment and systems that comply with government rules and regulations and/or meet industry standards, and to adhering to sound operational and maintenance procedures. To ensure response preparedness, all employees associated with operations at its facilities are required to be familiar with this plan and must participate in specified training and oil spill simulation exercises.

The primary objectives in responding to any spill are to:

- Save lives and prevent injuries to personnel.
- Minimize environmental impacts.

Although response actions vary depending on the incident, general priorities have been assigned to response actions for satisfying these objectives. A summary of these priorities is provided in Table 2-4.

2.3.2 Initial Detection Procedures

Early detection of spilled oil and as immediate a response, after the discovery are critical in ensuring the health and safety of personnel and in minimizing the effects on the environment.

An Initial Detection and Response Action Checklist for any facility employee detecting a spill is provided in Table 2-5. Notifying the Ellwood Supervisor (or alternate) will result in the activation of the IIRT and subsequent activation of the SIRT for a sustained response.

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Table 2-4. General Priorities For Spill Response Actions.

PRIORITY	Action
1	**Assess the situation.** If safe: • Identify source of release and its potential toxic or combustible nature. • Sound alarm,warn people, and evacuate if required.
2	**Save lives and prevent injuries.** • Dial 911 to report a serious injury or fire, and obtain assistance as needed. • Don required PPE if necessary. • Assist in evacuation of person(s). • Provide first aid.
3	**Initiate response actions when deemed safe.** • Take immediate actions to try to stop the flow of oil, and contain it if it can be done safely and quickly. • Report the event to the Ellwood Supervisor (or Person-In-Charge) • Notify Clean Seas and/or NRCES to assist or stand by. • Activate the IIRT. • Control the effects of the incident. • Set up (a) command post(s). • Initiate activation of SIRT for a sustained response if needed.
4	**Assess situation and make required notifications.** • Report circumstances to Ellwood Supervisor (or Person-In-Charge) as soon as possible: - Direction of spill flow. - General extent of release. - Status of shutdown. - Status of ignition sources, potential of fire. • Notify the required agencies, as appropriate. Notify adjacent operators as necessary.
5	**Minimize damage to the environment.** • Identify and protect sensitive resources and habitats. Deploy equipment and personnel as needed. • Over-respond and stand down if necessary. • Mobilize and deploy additional manpower and equipment from private contractors and public agencies.
6	**Clean up the affected area.** • Prepare and submit cleanup and restoration plans for government approval. • Implement plans effectively and efficiently.
7	**Submit report forms.** • Prepare and submit all spill report forms, as required by the Company and/or agencies, in a timely manner, and consistent with state and federal regulations.

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Table 2-5. Initial Detection Action Checklist for Any Facility Employee Detecting a Spill.

Check Off (Y)	Initial Actions
Minor Spill Strategy	
	1. Assess the situation. • Identify source of release and its potential toxic or combustible nature. • Sound alarm and/or warn people to stay clear of release site. • Evacuate site, facility, or field if necessary.
	1. Call 911 if necessary, to report a serious injury or fire, and obtain assistance as needed.
	2. Try to stop the flow of oil and contain it, if it can be accomplished safely. Don PPE as required.
	3. Notify one of the following persons in the order listed: • IIRT IC {Ellwood Supervisor or Person-In-Charge} or Designated Alternate IIRT IC; **or** • SIRT IC or Designated Alternate SIRT IC; And report the following information, if known: • Personnel safety. • Type of spill, potentially toxic or combustible gas. • Location and extent of spill. • Estimated quantity of spilled material. • Direction of spill flow. • Status of response actions.
	5. Notify appropriate Venoco personnel and government agencies.
	6. Over respond. Stand down as necessary.
Spill Less Than 5 Barrels (210 Gallons)	
	Items #1 through 6 above.
	7. Should spill threaten or reach waters, notify Clean Seas and/or NRCES for onshore spill if necessary.
	8. Focus response on control.
	9. Assist Clean Seas with Site Characterization and Site Safety Plan.
	10. Assist in deploying containment boom and/or absorbent boom and equipment.
	11. Continue cleanup operations until no visible sheen is apparent.
Spill 5-to-10 Barrels (210-to-420 Gallons)	
	Items #1 through 11 above.
	12. Call out necessary cooperative and contractor equipment.
	13. Continue to assess environmental conditions that influence spill path.
	14. Continue cleanup with mobilized equipment.
	15. Use absorbent boom and pads to remove traces of oil sheen.

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Table 2-5. Initial Detection Action Checklist for Any Facility Employee Detecting a Spill.

Check Off (Y)	Initial Actions
Major Spill	
	1. Ensure personnel safety
	2. Take appropriate actions to prevent explosion and fire.
	3. Stop the flow of oil, if possible.
	4. Assess the size, type, direction, and speed of spill.
	5. Notify as necessary (**Refer to Tables 2-2E and 2-3**): • Venoco personnel (activation of SIRT) • Clean Seas and NRCES • Government agencies
	6. Assist Clean Seas with Site Characterization and Site Safety Plan.
	7. Assist in equipment deployment and cleanup operations.
	8. Alert onshore operations to maintain stand-by status. If warranted, advise SIRT IC to request authorization to use chemical dispersant.
	9. Assist on-site containment efforts upon arrival of shore-based, backup equipment.

2.3.3 Initial Spill Response Procedures

2.3.3.1 Responding To The Spill

In the event of an oil spill, the initial response will be to:

- Stop all operations and work activities in the area.
- Activate the Initial Incident Response Team.
- Dispatch oil spill containment equipment from Platform Holly aboard the crewboat and launch Boston Whaler from the platform to assist, as appropriate.
- Call Clean Seas.
- Activate the Sustained Incident Response Team, if necessary.

The initial response will be managed by the Ellwood Supervisor or the Person-In-Charge on site, until relieved by the Ellwood Supervisor. An Action Checklist is provided for the initial responses of the Person-In-Charge (Table 2-6).

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Table 2-6. Oil Spill Response Action Checklist For Use By The Person-In-Charge.

Actions To Be Taken	Complete (Time/Initial)
Warn personnel to avoid breathing oil fumes and to avoid igniting oil. Direct the use of protective breathing apparatus and clothing as necessary.	
Ensure personnel safety. Call 9-11 (or 805 683-2724 if using a cellular phone). Provide first aid if needed.	
Try to stop the flow of oil from the source and prevent oil from reaching the shoreline, if the oil is from an onshore source.	
Shut down the flow of oil to the affected facility.	
Call adjacent Operator-In-Charge to notify Clean Seas for assistance or to stand by.	
Assess the situation, using the Spill Response Notification form (Appendix C) and notify Venoco management who will, if outside assistance is needed: • Activate the Sustained Incident Response Team. • Obtain assistance as necessary from outside contractors, other cooperatives, and/or government agencies.	
If the Ellwood Supervisor cannot be reached immediately, notify the following required government agencies: • National Response Center. • U.S. Coast Guard 11th District - Santa Barbara - Long Beach • California Emergency Management Agency (Cal-EMA)	
Collect information related to the spill event. Document actions and telephone calls/conversations, using forms provided in Appendix C.	

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2.3.3.2 Onsite Containment Techniques

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Table 2-9. Boom Deployment Procedures From Platform Holly.

Actions To Be Taken From Platform	Responsible Person	Complete (Time/Initial)
Instruct crew boat to proceed directly to the Platform Holly to assist in deploying 1,500 feet of Expandi 4300 boom.	Operator	
Secure the portable radio and proceed with all available personnel to the platform's bottom deck.	Operator	
Position the reel controls for the desired boom deployment mode. • **If time permits and ample personnel on board**, activate the hydraulic unit and operate the reel controls (per instructions posted on the reel control panel) to prevent "free spinning" of the boom reel. • **If time is short or only a skeletal crew is on board**, position the controls to allow the reel to simply "free spin" as the boat pulls out the boom.	Operator	
Guide the boom end through the rollers and tie the boom end to the bow of the crew boat.	Operator	
Instruct the boat to slowly back out, rolling the boom off of the reel. Ensure that each boom valve is in the inflatable mode (i.e., the valve cap should be screwed down to the right).	Operator	
If a full crew is on board, deploy the onsite Boston Whaler to assist with boom deployment. The Boston Whaler is also responsible for positioning the trail end of the boom once fully deployed. If ample personnel are not available to operate the Boston Whaler, have the crew boat use a sea anchor to maintain proper position of the boom's trail end.	Operator	
Instruct the crew boat to deploy the boom in a straight line ahead of, and angled across in front of, the advancing oil slick. This deployment technique allows the boom to drift naturally into a catenary or "U" configuration in front of the slick. Do not completely encircle the slick. Attach an inflatable buoy to each end of the boom and in the central section of the boom to mark the boom's location on the ocean surface.	Operator	
Maintain this boom position until the oil spill has been contained and cleaned up.	Operator	

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Platform Holly

Onsite response techniques are built upon the equipment and manpower resources available on Platform Holly and its attendant crew boat. Spill response equipment at the platform is listed in Appendix B. Venoco will respond with the crew boat, boom and personnel on the platform within 15 minutes. Clean Seas will respond in approximately one hour with the FRSB Clean Sweep and OSRV Mr. Clean.

Spill containment actions are designed to limit the spread of oil by surrounding all or a portion of the slick so that the oil can be recovered by mechanical means. In the event of a spill from Platform Holly, prompt deployment of the Venoco and Clean Seas containment booms as close to the source as possible is important to slow the spread of the oil while awaiting arrival of additional response resources. If the spill is slow moving and remains at or near the platform site, boom can be deployed near the platform to contain the spill. However, if the oil contains high levels of volatile or toxic substances (e.g., H_2S gas), then the slick should be allowed to drift away from the platform before attempting containment. Additional boom may be deployed, if needed, downwind/down current of the oil. The boom may be positioned in a "U" or catenary configuration to capture oil flowing around or under the Expandi (i.e., primary) boom. Recovery activities would be initiated.

Beachfront Lease / Ellwood Onshore Facility

Venoco's onsite response techniques are built upon the equipment and manpower resources available at Ellwood Onshore Facility, Platform Holly and from Clean Seas. These actions are designed to limit the spread of oil by surrounding all or a portion of the slick so that the oil can be recovered by mechanical means. In the event of a spill, prompt deployment of containment boom (i.e., a response time of 30 minutes) as close to the source as possible is important to slow the spread of the oil while awaiting arrival of additional response resources. If the oil contains high levels of volatile or toxic substances, then the slick should be allowed to drift away from the facility before attempting containment. The Expandi boom may be positioned in a "U" or catenary configuration to capture oil flowing around or under the primary boom. Additional boom may be deployed, if needed, downwind/down current of the oil.

Ellwood Pier & EPI – Line 96

In the event of a spill, absorbent pads and boom would be used to absorb the spill. Absorbent boom would be used to protect sensitive resources if threatened. Response equipment is stored in two trailers at Ellwood Onshore Facility.

2.3.3.3 Establishing A Command/Communications Post And Staging Area

Venoco would establish its Central Command/Communications Post in the building at the Clean Seas Yard. The layout and telephone numbers for the Command Post are provided in Tables

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2-16 and 2-16a. A major spill may require larger or additional facilities or staging areas. In such a case, the exact location for establishing command and communications posts and staging areas may not be definable until the area of impact is known.

The Command Post at Clean Seas would be established to serve as the primary location for the SIRT staff activities and the various meetings and briefings held throughout response operations. This location offers the following features and/or can accommodate the following:

- Proximity to both onshore and offshore facilities.
- Sufficient size to allow response personnel to operate effectively and comfortably.
- Adequate room for conferences, Unified Command meeting, and media briefings.
- Situation Room to post maps/charts to track the spilled oil, response equipment, sensitive resource areas, personnel, phone numbers, etc.
- Secure phone and fax lines.
- Security.
- Office support systems (e.g. facsimile machine, copier, telephone lines, VHF/UHF radio, base communication station, etc.).
- Communications systems (e.g., landline phone system, radios and base station, pagers, cellular phones).

Field Command Post

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

Staging Areas

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

- Direct access to impacted areas.
- Road access.
- Proximity to populated areas or environmentally sensitive areas.
- Adequate lighting.
- Security.

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2.3.3.4 Determining The Properties Of The Spill

Once the spill source is identified, the properties of the spilled product should be determined. Pertinent data are contained in Safety Data Sheets and laboratory analyses performed for Venoco. Critical properties, which may need to be considered in determining response strategies, include:

- API Gravity
- Flash Point
- Lower Flammability Limit (Lower Explosion Limit)
- Pour Point
- Solubility
- Specific Gravity
- Viscosity
- Wax Content

2.3.3.5 Assessing Environmental Conditions

Determining the environmental factors that could affect a spill is important in the planning and implementation of an effective response strategy. Critical information includes:

- Oceanographic Conditions
- Meteorological Conditions
- Biological Setting
- Economic and Cultural Resources (see Appendix M)
- Sensitive Natural Resources (see Appendix M)

2.3.3.6 Monitoring And Predicting Spill Size And Movement

Estimating Spill Volume On Water

In the event of sizeable spill, a rough estimate of the spill's total volume provides the Incident Commander with preliminary data to plan and initiate the cleanup response. Generating this estimate early in the response aids in determining:

- The equipment and personnel needed.
- The amount of oil that may reach shorelines and/or sensitive areas.
- The requirements for temporary storage and disposal of recovered materials.

A rough estimate of spill volume can be generated from observations of the oil slick's size and thickness. Definitions of the appearance of oil on water are provided below.

Appearance	Description
Sheen	The oil is visible on water as a silvery sheen or with tints of color (rainbow colors). This is the thinnest thickness of oil.
Dark Colors	The oil is visible with dark colors; it will still have traces of rainbow colors but is not black or dark brown.
Black/Dark Brown	Fresh oil after the initial spreading will have a black or very brown

	color. This is the greatest thickness of non-emulsified oil.
Mousse	This is a water-in-oil emulsion that is often orange to rust colored. It is very thick and viscous and may contain 30% oil.

Spill factors may be used to estimate the volume of oil contained in a spill. Whenever possible, these factors should be compared to volumes estimated from the source of the spill (e.g. piping volume, tank capacity). Exact calculations of the volume of a spill are not possible by visual observations of the spill on the surface of the water. For this reason, the spill volumes should be rounded off to avoid the appearance of a very accurate determination.

The spill factors and an example of the estimating procedures are provided on the following page.

Estimating Spill Size Using Spill Factors			
Appearance Of Oil On Water	**Assumed Thickness**	**Factor**	
		Gal/Sq. Yd.	**Bbl/Sq. Nmi**
Sheen	0.0003	0.000066	6.3
Dark Colors	0.002	0.00044	42.0
Black/Dark Brown	0.1	0.022	2100.0
Mousse	1.0	0.066	6300.0
Estimating Procedures: 1. Estimate dimensions (length and width) of each part of the spill in yards or nautical miles (1 nmi = 2,000 yd) for each of the colors. 2. Multiply each of the areas calculated in Step 1 by the appropriate spill factor (above). Add the individual parts together. The answer is the estimated volume of the spill in gallons or barrels. Spills that are calculated to be less than 1 gallon should be reported to be less than 1 gallon rather than a decimal amount. For larger spills, round up.			
Example: A spill has created a sheen with rainbow colors that is estimated to be 1 nmi long (2,000 yd) by an average of 30 yd wide. There is a second area of black oil that is 200 yd long by 60 yd wide. **Calculation**: Area One = 2000 yd x 30 yd x 0.000066 gal/sq. yd = 3.96 gal = 4 gal Area Two = 200 yd x 60 yd x 0.022 gal/sq. yd = 264 gal Total Volume = Area One + Area Two = 4 + 264 = 268 gal Volume in Barrels = 268/42 = 6.38 = 6.4 bbl			

Monitoring And Predicting Spill Movement

The movement of spilled oil on water would depend primarily on the effects of wind and the surface currents present near the spill site. Surface currents will dominate slick movement unless the winds are strong. Strong winds will cause the slick to move approximately 3% of the wind speed in the same general direction. When currents and strong winds are absent, slick spreading

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will dictate slick movement. However, even if only weak winds or surface currents are present, they will dominate slick movement.

Utilize the following resources for monitoring and predicting oil spill movement:

Small Spills*:*

- Use visual observations by personnel from the facility, vessels, and/or vehicles, depending on discharge location and access. Use handheld radios/cellular phones to communicate. Use tracker buoys or stationary vessels in the slick to track oil spills in poor visibility or at night.
- Utilize the Vector Method to predict spill movement (see below) to predict slick movement.

Vector Method To Predict Slick Movement
On-scene personnel can generate field estimates of oil spill movement using the vector addition method. Slick movement can be predicted by adding the vectors of the two main motive forces influencing open water slick movement, surface currents and winds. To predict slick movement, follow these steps: 1. Estimate the direction and speed of the wind and current. 2. Calculate the "wind component", using 3% of the wind speed. 3. Starting from the center of the slick location (A), draw a line representing the speed and direction of the current (B). 4. Starting from the center of the slick location (A), draw a line representing the wind (C). 5. Starting from (B), draw a line parallel to the wind vector (C), to (D), which is the same length and angle as the wind vector (the distance from A to C). 6. Draw a line from (A) to (D), which gives the direction and speed of the slick movement ("resultant vector").

Larger Spills

- Observe the spill from aircraft.
- Use aircraft equipped with mounted sensor systems and/or contact NOAA for satellite imagery to track the spill.
- Notify and coordinate with the NOAA Scientific Support Coordinator and Trajectory Analysis (see Directory, Table 2-19 for telephone number) to predict spill movement with assistance from NOAA's Oil Spill Simulation Model (OSSM) and / or GNOME (General NOAA Oil Modeling Environment) Model.

Since most oils are lighter than water, most spilled oils will float on the water's surface in the form of a slick. Depending on surface currents, winds, and physical boundaries, a slick can spread into several shapes. In the absence of physical boundaries, a slick may appear circular, elliptical or triangular in shape. A circular slick is formed when there are no significant surface currents or winds; whereas an elliptical slick is formed by moderate surface currents and winds. High winds

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and strong currents will create a more triangular-shaped slick. Each type of slick will widen and spread as it moves away from its source. Wave action, usually caused by winds, can increasingly distort these shapes and eventually divide the slick into smaller streamers or windrows of oil separated by sheen.

NOAA's OSSM relies on four input components; namely, tides of the region, meteorological forecast data from the National Weather Service, a Monte Carlo simulation equation, and weathering and evaporation data from the slick. Information, supplemented by on-scene observations, including approximate locations of the oil slick during various time intervals, makes it possible to project spill movement onto a digitized map of the area. Different simulations are possible as real time conditions change. Maps can be obtained via fax or through direct access to NOAA trajectory analysis.

NOAA's GNOME is a trajectory model that can:

1. Estimate the trajectory of spills by processing information that is provided about wind and weather conditions, circulation patterns, and the oil spill one wishes to simulate.
2. Predict the trajectories that can result when there is uncertainty in current and wind observations and forecasts.
3. Use weathering algorithms to make simple predictions about the changes the oil will undergo while it is exposed to the environment.
4. Be updated quickly and re-run with new data.
5. Provide trajectory output (including uncertainty estimates) in a geo-referenced format that can be used as input to GIS (geographic information system) programs.

GNOME can create and display a "spill movie", showing how the oil is predicted to move and spread across the water. The Diagnostic Mode is the most advanced mode of the model. A Location File (Santa Barbara Channel) can be used to help set up the model. Conditions other than those included in GNOME can be specified. For training contact:

- GNOMEWizard@hazmat.noaa.gov

2.3.3.7 Identifying Response Priorities

Three response priorities that must be addressed during the planning process include: the protection of life and health, the protection of the environment, and the protection of property. Anyone observing a spill should take action or contact the necessary qualified person to take emergency action to stop the flow at the source if it can be done safely and quickly.

Fire and explosion are potential dangers during petroleum product spills. Although flammability varies dramatically with the spilled product and the circumstances, it is essential that all reasonable steps be taken, as soon as possible to minimize the chance of accidental ignition of

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the spilled products (e.g., extinguish open flames, cease all operations which vent oxygen/enriched oxygen mixtures, arc welders, grinders, etc., shut off electric circuits that might create a fire hazard).

Resources in this plan that may be used to define **initial** response priorities include:

Resource	South Ellwood Field OSCP Reference
General priorities of spill response	Table 2-4
Response checklists	Section 2.4
Oil spill response flow chart	Figure I-1
Response resources for worst case discharge over time	Table H-1

In the event of a spill resulting from fire/explosion, the response priorities would be to ensure personnel safety, to activate all fire suppression systems, and to make the necessary notifications. If spilled oil is burning, response contractors would be forced to let it burn, in the interest of safety. Spilled oil (not burning) could only be contained and recovered when responders were not in danger from fire/explosion.

Neighboring resources that require protection or specific response strategies may include:

- Nearby population center.
- Properties at risk (e.g., beaches, harbors, parks).
- Potentially affected industrial activities (e.g., water intakes).
- Economic and cultural resources.
- Biological resources (e.g., sensitive habitats, commercial and recreational fish/shellfish stocks, wildlife, plant life).
- Other marine-dependent uses (e.g., mariculture, navigation).

Resources in this plan and the ACP that may be used to identify and prioritize sensitive resources that may be threatened or impacted by the spill and to identify protection strategies include:

Resource	South Ellwood Field OSCP Reference / ACP
Trajectory analysis showing possible affected coastal resources. The analysis only provides a possible indication of affected resources. NOAA can run a trajectory analysis with real time data providing greater predictive value.	Appendix H.4
ACP maps and site summary sheets provide protection strategies and sensitive areas are mapped and prioritized according to an environmental sensitivity ranking.	ACP 2006: Section 4612
NOAA ESI maps ranking various shoreline types in order of increasing potential for long-term oil persistence and biological	Appendix M.5

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damage. Maps provide seasonal information on sensitive biological resources and identify human use resources.	
Review of sensitive environmental, economic, and cultural resources in the surrounding area.	Appendix M

2.3.3.8 Selecting Response Options

Every spill is different. In addition, oil properties and ambient conditions that influence the effectiveness of any response option change continuously throughout an incident. No response option (i.e., mechanical or non-mechanical) should be ruled out in advance. Alternative technologies, such as dispersants and *in-situ* burning, need to be evaluated very early in the response effort if they are to be feasible options. Information on response techniques may be found in the South Ellwood Field OSCP appendices I & J.

Response Technique	Reference
Mechanical Methods Of Response	
Open-Water and Cleanup Strategies	South Ellwood Field OSCP: Appendix I.2
Shoreline Response and Cleanup Strategies	South Ellwood Field OSCP: Appendix I.3
On-Land Response and Cleanup Strategies	South Ellwood Field OSCP: Appendix 1.4
On-Land Cleanup Techniques	South Ellwood Field OSCP: Appendix 1.4.3
Creek Response and Cleanup Strategies	South Ellwood Field OSCP: Appendix 1.5
Non-Mechanical Methods Of Response	
Dispersants	South Ellwood Field OSCP: Appendix J.2
In-Situ Burning	South Ellwood Field OSCP: Appendix J.3
Bioremediation	South Ellwood Field OSCP: Appendix J.4
Shoreline Cleaning Agents	South Ellwood Field OSCP: Appendix J.5

The use of alternative response methods will be considered when the preferred recovery methods and cleanup techniques are considered inadequate and the environmental benefit of an alternative technique outweighs any adverse effects. For an instantaneous release, a very narrow window-of-opportunity exists for dispersants/*in-situ burning*. For an ongoing release, the window may be somewhat larger. Therefore, consideration and approval by the RRT would be sought almost immediately from the onset of the incident if mechanical methods were considered inadequate. Information forms would be completed by Planning and provided to the UC for subsequent review by the RRT. A decision guide and information forms required to be completed for dispersant use and for *in-situ* are found in the Area Contingency Plan. Response contractors would be alerted that approval is being sought and to standby.

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Once response options have been identified, it is imperative that the type, size, and amount of specific response equipment and supplies, as well as the numbers and types of personnel necessary to support the operation, be identified and mobilized.

Do not delay. Plan ahead. Over-respond and stand down if necessary. Do not get behind on the curve.

2.3.3.9 Developing A Waste Management Plan

Venoco's waste management practices include:

- Proper classification of wastes to ensure regulatory compliance with respect to handling, treatment, temporary storage, transport, and disposal of wastes.
- Waste minimization to the extent technically and economically feasible.
- Reuse and recycling of wastes whenever appropriate and practicable.
- Evaluation of all legally appropriate and available waste handling and disposal methods prior to disposing wastes to land, the least preferred method.

Waste Management Issue	South Ellwood Field OSCP Reference
Waste minimization 1. Debris avoidance 2. Selection of PPE 3. Recovered oil/oily waste 4. Sorbents recycle/reuse 5. Petroleum-contaminated soil recycle/reuse	Appendix N.2 and N.3
Regulatory definition of wastes	Appendix N.4
Waste classification	Appendix N.5
Temporary storage 1. Methods 2. Siting and pre-identified sites 3. Contractor capacities to accommodate worst case discharge	Appendix N.7 Table N-1 Appendix N.7.3 Appendix F
Quantifying recovered hydrocarbons according to State regulations	Appendix N.8
Initial treatment of temporarily stored materials	Appendix N.9
Transportation requirements	Appendix N.10
Disposal options 1. Crude oil 2. Decanting water separated from recovered oil at sea 3. Contaminated debris 4. Oiled animal carcasses	Appendix N.11
Documentation	Appendix N.12

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2.3.3.10 Developing A Wildlife Rehabilitation Plan

Venoco will use the California Oiled Wildlife Care Network (OWCN) to meet wildlife care requirements. The phone number to notify the OWCN to respond or standby is included on the Directory of this plan. Additional information on wildlife care and rehabilitation is found in Appendix M.4 of the Venoco South Ellwood Field OSCP.

2.4 RESPONSE CHECKLISTS AND STRATEGIES

2.4.1 Response Checklists

Prioritized emergency response procedures in checklist format are provided for the following incidents:

- Table 2-10: Ellwood Marine Terminal Tank Overfill / Failure Response Checklist.
- Table 2-11 Ellwood Onshore Facility Tank Overfill / Failure Response Checklist.
- Table 2-12 Failure of Ellwood Marine Terminal Transfer Equipment Response Checklist.
- Table 2-13: Piping Rupture/Leak Response Checklist.
- Table 2-14 Explosion and/or Fire Response Checklist.
- Table 2-15 Other Equipment Failure Response Checklist.

2.4.2 Response Strategies For Sensitive Areas (ACP 2008: Sec 9812)

A number of sensitive and unique marine and coastal habitats occur along Southern California, including the Channel Islands in the Santa Barbara Channel (see Figure M-1). The ACP provides maps, resource information, and site-specific response strategies for sensitive areas. OSPR and NOAA have also prepared an Environmental Sensitivity Maps Index (ESI) Atlas for California. These maps include information on:

- Shoreline Habitat Types.
- Human Use Features (e.g., access, water intake).
- Sensitive Biological Resources (including seasonal data).

Copies of the ESI maps applicable to the facilities and pipelines (based on the trajectory analysis) are made available during spill response. Additional information on sensitive natural, cultural and economic resources is also found in Appendix M.

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2.4.3 Line 96 Creek Strategies

CREEK NAME: BELL CREEK

Crossing Information

Classification: Creek

District: Santa Barbara County

Response Area: Goleta

Coordinates of Creek Crossing: N 34° 25'56.3 / W 119°54'45.7

Directions from Primary and Secondary Base: Primary: The primary response base is Venoco Ellwood facility which is located 250' East of Bell Creek.
Secondary: The secondary response base is NRCES Ventura office 3284 Ventura Ave, Ventura, CA 93001. Head North on Ventura Ave to Shell road, turn left on to Shell road, take CA-33 S about 2.7miles to US-101 N, travel on US-101 N for 38.7miles and take exit 110 Winchester Canyon Road. Merge on to Calle Real to the left, travel .5 miles to Cathedral Oaks rd. Turn left on Cathedral Oaks and follow to the Stop sign, turn right on to Hollister and travel .32 miles to Venoco Ellwood Facility on the left.

Rendezvous Point – RVP: Venoco Ellwood Facility 7979 Hollister Ave Goleta, CA

Location of Pipeline Crossing: N 34° 26'00.6 / W 119°54'44.4. Under the 101 freeway via HDD.

Access to the Pipeline Crossing: Via Calle Real through culvert under the 101 freeway.

Estimated Spill Volume: 40.9 bbls

List of Containment Sites

Name	Distance downstream (FT)
Containment Site 1	280'
Containment Site 2	1180'
Containment Site 3	1495'

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Crossing and Containment Sites Map

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Site Access Diagram

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Access and Response Times

Vehicles Access Details	Containment Site 1: Vehicle access is non existent. Enter by foot only. Vehicles will have to be staged at Venoco Ellwood Facility. Containment Site 2 and 3: Vehicles can utilize the beach access road 850' just west of Venoco Ellwood facility. Turn East at the beach and travel 1000' to Bell Creek mouth.
Travel time from Primary Base to CS (hrs)	10 min
Travel time from Secondary Base to CS	1 hr 10 min

Watercourse Data

Creek Bed Type	**Mixture of gravel, sand, and rocks.**
Creek Characteristics	**Average Flow: < .5 FT/SEC.** **Width: 6' – 105'** **Depth: 3" – 2.5'**
Creek banks condition	**Gradient: 5° - 60°** **Banks Height: 2' – 15'**

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Deployment / Equipment Information

Containment Strategy /Containment and Recovery Equipment Options	Containment Site 1: - 100 each sandbags - 2 each 4" x 6' PVC pipes - 2 each 2"- 3" diaphragm pump - Hand tools Containment Site 2: - 150' swamp boom - 6 each bales of absorbent boom - 8 each drive-in anchors - 1 each 2"-3" diaphragm pump - 1 each shallow draft skimmer Containment Site 3: - 150' swamp boom - 6 each bales of absorbent boom - 8 each drive-in anchors - 1 each 2"-3" diaphragm pump - 1 each shallow draft skimmer - 1 each backhoe	See Ellwood OSCP Appendix F for other additional equipment available.
Storage Type/Number/ Unit Volume (bbls/yds3)	- 3 each 20yd waste bin - 2 each 20k baker tank - 3 each 120bbl Vac Tankers	
Total Volume (bbls/yds3)	- 20k bbls - 60 cubic yards	
Personnel Requirements	Containment Site 1: - 1 Supervisor - 6 Technicians Containment Site 2: - 1 Supervisor - 6 Technicians Containment Site 3: - 1 Supervisor - 6 Technicians - 1 Backhoe operator	
Laydown Area/Staging Area (FT^2)	15,400	

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Equipment Deployment Diagrams

Containment Site 1

Containment Site 2

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Containment Site 3

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Environmental / Sensitive Area Information

Environmental Description	Bell canyon creek is a moderate sized creek with a well developed lagoon just west of sandpiper golf course; the sand berm which develops during summer is usually relatively low and the lagoon is subject to wash over especially during high tides. The creek flow during winter is usually enough to breach the berm. The beaches to the east and west are of fine to medium grained sand, and often have very high volumes of debris (mostly wood and kelp) especially after rains. The Venoco oil facility lies 1/4 mile inland. Other references: California ACP 4: Section 4-630-C Ellwood OSCP: Appendix F
Downstream Receptor	Pacific Ocean
Cultural Description	Cultural, Historical, and Archaeological sites are known to exist in the area, however, the exact locations of these sites must be ascertained by contacting the Native American Heritage Commission at (916) 653-4082 and State Office of Historical Preservation (916) 653-6624, and/or the Central Coast Archaeological Information Center (805) 893-2474. The Sandpiper golf course is directly to the East, and the Bacara Resort and Spa is 1800' to the West. Haskell's beach is also adjacent to containment site 3. The beach is utilized by the local population. Other references: California ACP 4: Section 4-630-C Ellwood OSCP: Appendix M
Agricultural Land use	None in the direct vicinity.
Industrial Land use	Venoco Ellwood Facility is directly adjacent to the containment sites.

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CREEK NAME: TECOLOTE CREEK

Crossing Information

Classification: Creek

District: Santa Barbara County

Response Area: Goleta

Coordinates of Creek Crossing: N 34° 26'00.52" / W 119°55'00.23"

Directions from Primary and Secondary Base: Primary: The primary response base is Venoco Ellwood facility which is located 1480' East of Tecolote Creek.
Secondary: The secondary response base is NRCES Ventura office 3284 Ventura Ave, Ventura, CA 93001. Head North on Ventura Ave to Shell road, turn left on to Shell road, take CA-33 S about 2.7miles to US-101 N, travel on US-101 N for 38.7miles and take exit 110 Winchester Canyon Road. Merge on to Calle Real to the left, travel .5 miles to Cathedral Oaks rd. Turn left on Cathedral Oaks rd and follow to the Stop sign, turn right at the Stop sign on to Hollister ave and travel .32 miles to Venoco Ellwood Facility on the left.

Rendezvous Point – RVP: Venoco Ellwood Facility 7979 Hollister Ave Goleta, CA

Location of Pipeline Crossing: N 34° 26'05.4" / W 119°54'57.1" adjacent to Calle Real to the North.

Access to the Pipeline Crossing: Via Calle Real north of the 101 freeway.

Estimated Spill Volume: 85.2 bbls

List of Containment Sites

Name	Distance downstream (FT)
Containment Site 1	543'
Containment Site 2	842'
Containment Site 3	1147'

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Crossing and Containment Sites Map

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Site Access Diagram

Access and Response Times

Vehicles Access Details	Containment Site 1: Vehicle access is non existent. Enter to creek by foot only. Vehicles will have to be staged on the bridge, or at Venoco Ellwood Facility. Containment Site 2: Access through Bacara Resort maintenance parking lot by vehicle, then by foot via golf cart trail to walk bridge. Containment Site 3: Vehicles can utilize the beach access road 850' just west of Venoco Ellwood facility. Turn West at the beach and travel 685' to Tecelote Creek mouth.
Travel time from Primary Base to CS (hrs)	10 min
Travel time from Secondary Base to CS	1 hr 10 min

Watercourse Data

Creek Bed Type	**Mixture of gravel, sand, and rocks.**
Creek characteristics	**Average Flow: < .5 FT/SEC.** **Width: 6' – 38'** **Depth: 3" – 2.5'**
Creek banks condition	**Gradient: 5° - 60°** **Banks Height: 0.5' – 11'**

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Deployment / Equipment Information

Containment Strategy /Containment and Recovery Equipment Options	Containment Site 1: - 100 each sandbags - 2 each 4" x 6' PVC pipes - 2 each 2"- 3" diaphragm pump - Hand tools Containment Site 2: - 100 each sandbags - 2 each 4" x 6' PVC pipes - 2 each 2"- 3" diaphragm pump - Hand tools Containment Site 3: - 100' swamp boom - 6 each bales of absorbent boom - 8 each drive-in anchors - 1 each 2"-3" diaphragm pump - 1 each shallow draft skimmer - 1 each backhoe	See Ellwood OSCP Appendix F for other additional equipment available.
Storage Type/Number/ Unit Volume (bbls/yds3)	- 3 each 20yd waste bin - 2 each 20k baker tank - 3 each 120bbl Vac Tankers	
Total Volume (bbls/yds3)	- 20k bbls - 60 cubic yards	
Personnel Requirements	Containment Site 1: - 1 Supervisor - 4 Technicians Containment Site 2: - 1 Supervisor - 4 Technicians Containment Site 3: - 1 Supervisor - 6 Technicians - 1 Backhoe operator	
Laydown Area/Staging Area (FT^2)	15,400 – 28,000'	

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Equipment Deployment Diagrams

Containment Site 1

Containment Site 2

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Containment Site 3

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Environmental / Sensitive Area Information

Environmental Description	Tecolote canyon creek and appx 1/4 acre open water lagoon. Tecolote canyon creek lagoon is fringed by vegetation. To the NW and SE are fine-grained sand beaches. A small sand berm develops during dry season, however the creek mouth is generally close to the high tide line. Other references: California ACP 4: Section 4-635-A Ellwood OSCP: Appendix F
Downstream Receptor	Pacific Ocean
Cultural Description	Cultural, Historical, and Archaeological sites are known to exist in the area, however, the exact locations of these sites must be ascertained by contacting the Native American Heritage Commission at (916) 653-4082 and State Office of Historical Preservation (916) 653-6624, and/or the Central Coast Archaeological Information Center (805) 893-2474. The Bacara Resort is on either side of Tecolote Creek. Haskell's beach is also adjacent to containment site 3. The beach is utilized by the local population. Other references: California ACP 4: Section 4-635-A Ellwood OSCP: Appendix M
Agricultural Land use	None in the direct vicinity.
Industrial Land use	Venoco Ellwood Facility is 1500' to the West of the containment sites.

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CREEK NAME: EAGLE CREEK

Crossing Information

Classification: Creek

District: Santa Barbara County

Response Area: Goleta

Coordinates of Creek Crossing: N 34° 26'22.0" / W 119°55'43.4"

Directions from Primary and Secondary Base: Primary: Turn right out of Venoco Ellwood facility on to Hollister ave. Follow Hollister to the first Stop sign, turn left on to Cathedral Oaks rd and cross over US 101 fwy to Calle Real. Turn left on Calle Real and follow for 1.27 miles. Eagle Creek Crossing will be on the right side of Calle Real. Secondary: The secondary response base is NRCES Ventura office 3284 Ventura Ave, Ventura, CA 93001. Head North on Ventura Ave to Shell road, turn left on to Shell road, take CA-33 S about 2.7miles to US-101 N, travel on US-101 N for 38.7miles and take exit 110 Winchester Canyon Road. Merge on to Calle Real to the left, travel 1.77 miles on Calle Real. Eagle Creek Crossing will be on the right side of Calle Real.

Rendezvous Point – RVP: Venoco Ellwood Facility 7979 Hollister Ave Goleta, CA

Location of Pipeline Crossing: N 34° 26'22.0" / W 119°55'43.4" Under Eagle Creek via HDD.

Access to the Pipeline Crossing: Via Calle Real north of the 101 freeway.

Estimated Spill Volume: 116.4 bbls

List of Containment Sites

Name	Distance downstream (FT)
Containment Site 1	25' (Upstream)
Containment Site 2	35'
Containment Site 3	1345'

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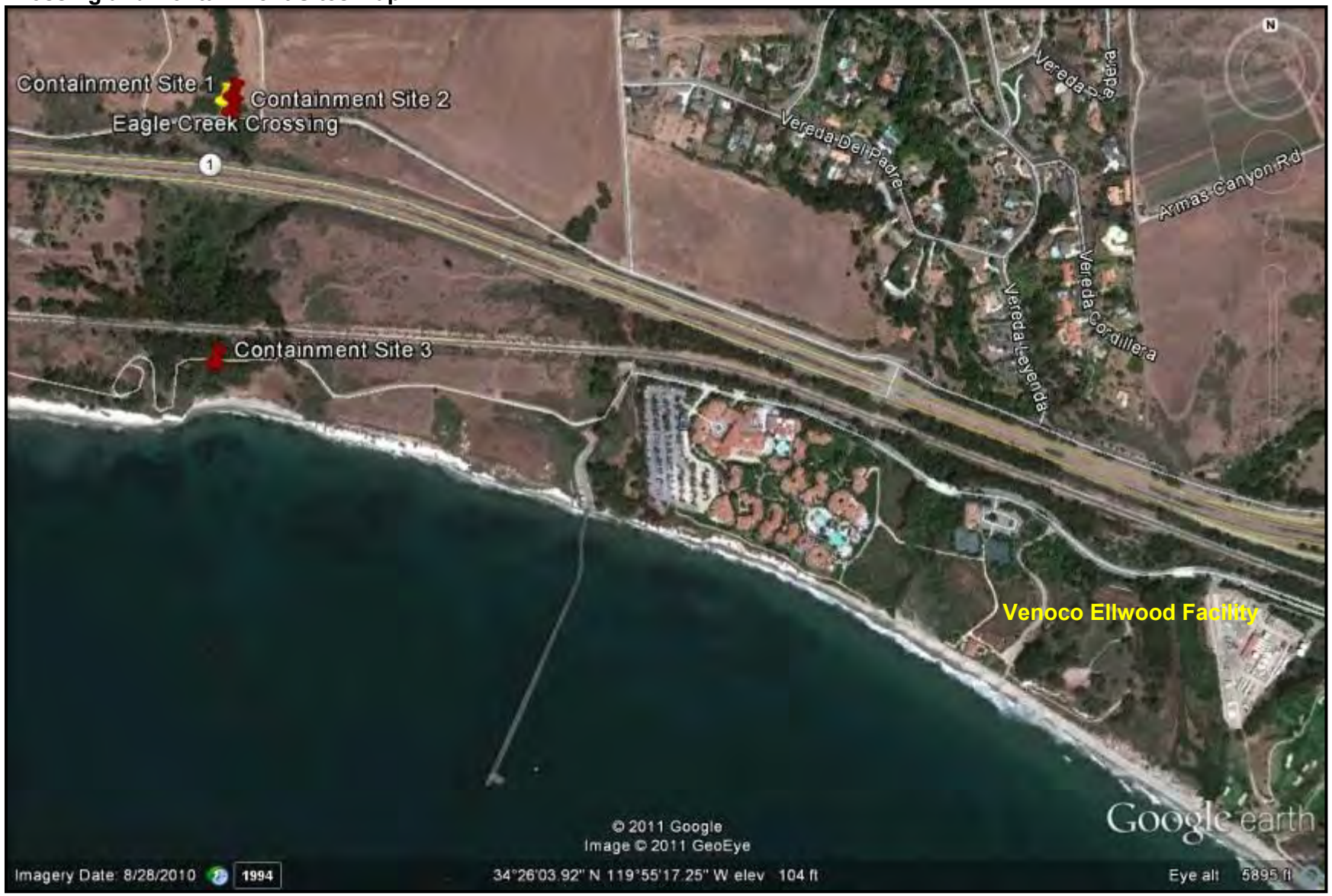
Crossing and Containment Sites Map



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Site Access Diagram

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Access and Response Times

Vehicle Access Details	Containment Site 1: Vehicle access is non existent. Enter to creek by foot only. Vehicles will have to be staged on the bridge, or on Calle Real. Containment Site 2: Vehicle access is non existent. Enter to creek by foot only. Vehicles will have to be staged on the bridge, or on Calle Real. Containment Site 3: Vehicles can utilize the Ellwood pier access road just west of the Bacara Resort. Turn West at the first right behind the resort and travel .33 miles to Eagle Creek.
Travel time from Primary Base to CS (hrs)	15 min
Travel time from Secondary Base to CS	1 hr 15 min

Watercourse Data

Creek Bed Type	**Mixture of gravel, sand, and rocks.**
Creek characteristics	**Average Flow: < .5 FT/SEC.** **Width: 6' – 8'** **Depth: 3" – 1'**
Creek banks condition	**Gradient: 5° - 80°** **Banks Height: 3' – 19'**

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Deployment / Equipment Information

Containment Strategy /Containment and Recovery Equipment Options	Containment Site 1: - 150 each sandbags - 2 each 4" x 6' PVC pipes - 2 each 2"- 3" diaphragm pump - Hand tools Containment Site 2: - 100 each sandbags - 2 each 4" x 6' PVC pipes - 2 each 2"- 3" diaphragm pump - Hand tools - Chain Saw Containment Site 3: - 2 each 2"- 3" diaphragm pump - Hand tools - 1 each backhoe	See Ellwood OSCP Appendix F for other additional equipment available.
Storage Type/Number/ Unit Volume (bbls/yds3)	- 3 each 20yd waste bin - 2 each 20k baker tank - 3 each 120bbl Vac Tankers	
Total Volume (bbls/yds3)	- 20k bbls - 60 cubic yards	
Personnel Requirements	Containment Site 1: - 1 Supervisor - 4 Technicians Containment Site 2: - 1 Supervisor - 4 Technicians Containment Site 3: - 1 Supervisor - 4 Technicians - 1 Backhoe operator	
Lay down Area/Staging Area (FT^2)	15,400 – 28,000'	

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Equipment Deployment Diagrams

Containment Site 1 (Upstream of Calle Real)

Containment Site 2 (Downstream of Calle Real)

Containment Site 3

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Environmental / Sensitive Area Information

Environmental Description	This is a small, intermittent creek which empties out onto a small fine-grained sand beach backed by a cobble-boulder storm berm. Tidal wash over occurs into a seasonal lagoon at creek beach. Mouth is probably open to ocean during winter rains only. Whenever creek mouth is open (normally only during rainy season) - wetland biota is at risk. Other references: California ACP 4: Section 4-640-A Ellwood OSCP: Appendix M
Downstream Receptor	Pacific Ocean
Cultural Description	Cultural, Historical, and Archaeological sites are known to exist in the area, however, the exact locations of these sites must be ascertained by contacting the Native American Heritage Commission at (916) 653-4082 and State Office of Historical Preservation (916) 653-6624, and/or the Central Coast Archaeological Information Center (805) 893-2474. Ellwood Pier is located 1900' to the East of Eagle Creek, and the Bacara Resort is located 2400' to the East of Eagle Creek. Other references: California ACP 4: Section 4-640-A Ellwood OSCP: Appendix M
Agricultural Land use	None in the direct vicinity.
Industrial Land use	Venoco Ellwood Facility is 1.02 miles to the East of the containment sites.

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CREEK NAME: DOS PUEBLOS

Crossing Information

Classification: Creek

District: Santa Barbara County

Response Area: Goleta

Coordinates of Creek Crossing: N 34° 26'53.0" / W 119°57'33.1"

Directions from Primary and Secondary Base: Primary: Turn right out of Venoco Ellwood facility on to Hollister ave. Follow Hollister to the first Stop sign, turn left on to Cathedral Oaks rd and cross over US 101 fwy and turn left on to the US 101 entrance ramp. Travel 2.58 miles on US 101 North to Exit 113 (Dos Pueblos Canyon Road) and exit US 101 on to Naples Access Rd. Travel Naples Access Rd .27 miles, turn left, follow to Stop sign, turn right onto Dos Pueblos Cyn Rd, travel .11miles to the first right, travel .16 miles, crossing is on the right just past the US 101 overpass. Secondary: The secondary response base is NRCES Ventura office 3284 Ventura Ave, Ventura, CA 93001. Head North on Ventura Ave to Shell road, turn left on to Shell road, take CA-33 S about 2.7miles to US-101 N, travel on US-101 N 42.1 miles to Exit 113 (Dos Pueblos Canyon Road) and exit US 101 on to Naples Access Rd. Travel Naples Access Rd .27 miles, turn left, follow to Stop sign, turn right onto Dos Pueblos Cyn Rd, travel .11miles to the first right, travel .16 miles, crossing is on the right just past the US 101 overpass..

Rendezvous Point – RVP: Venoco Ellwood Facility 7979 Hollister Ave Goleta, CA

Location of Pipeline Crossing: N 34° 26'53.0" / W 119°57'33.1" Under Dos Pueblos Creel via HDD.

Access to the Pipeline Crossing: Via US 101, Naples Access Rd, and Dos Pueblos Cyn Rd..

Estimated Spill Volume: 110.9 bbls

List of Containment Sites

Name	Distance downstream (FT)
Containment Site 1	530'
Containment Site 2	2751'
Containment Site 3	3060'

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Site Access Diagram

Crossing and Containment Sites Map

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Access and Response Times

Vehicles Access Details	Containment Site 1: Vehicle access is possible via the access road. However, the road is narrow and no room for staging many vehicles. Access down to the creek by foot only. Containment Site 2: Vehicle access is possible via the access road. However, the road is narrow and no room for staging many vehicles. Access down to the creek by foot only. Containment Site 3: Vehicles can access the creek without any physical restrictions. Parking lot to the South of the pond can be used as a staging area for all three sites.
Travel time from Primary Base to CS (hrs)	20 min
Travel time from Secondary Base to CS	1 hr 20 min

Watercourse Data

Creek Bed Type	**Mixture of gravel, sand, and rocks.**
Creek characteristics	**Average Flow: < .5 FT/SEC.** **Width: 6' – 17'** **Depth: 3" – 1'**
Creek banks condition	**Gradient: 5° - 80°** **Banks Height: .5' – 8'**

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Deployment / Equipment Information

Containment Strategy /Containment and Recovery Equipment Options	Containment Site 1: - 250 each sandbags - 2 each 4" x 6' PVC pipes - 2 each 2"- 3" diaphragm pump - Suction Skimmer - Hand tools Containment Site 2: - 150 each sandbags - 2 each 4" x 6' PVC pipes - 250' Swamp Boom - 250' Absorbent Boom - 2 each Drive-in anchors - 2 each 2"- 3" diaphragm pump - Hand tools - Chain Saw Containment Site 3: - 250 each sandbags - 2 each 4" x 6' PVC pipes - 2 each 2"- 3" diaphragm pump - Suction Skimmer - Hand tools - Back Hoe	See Ellwood OSCP Appendix F for other additional equipment available.
Storage Type/Number/ Unit Volume (bbls/yds3)	- 3 each 20yd waste bin - 2 each 20k baker tank - 3 each 120bbl Vac Tankers	
Total Volume (bbls/yds3)	- 20k bbls - 60 cubic yards	
Personnel Requirements	Containment Site 1: - 1 Supervisor - 5 Technicians Containment Site 2: - 1 Supervisor - 5 Technicians Containment Site 3: - 1 Supervisor - 5 Technicians - 1 Backhoe operator	
Laydown Area/Staging Area (FT^2)	8,320'	

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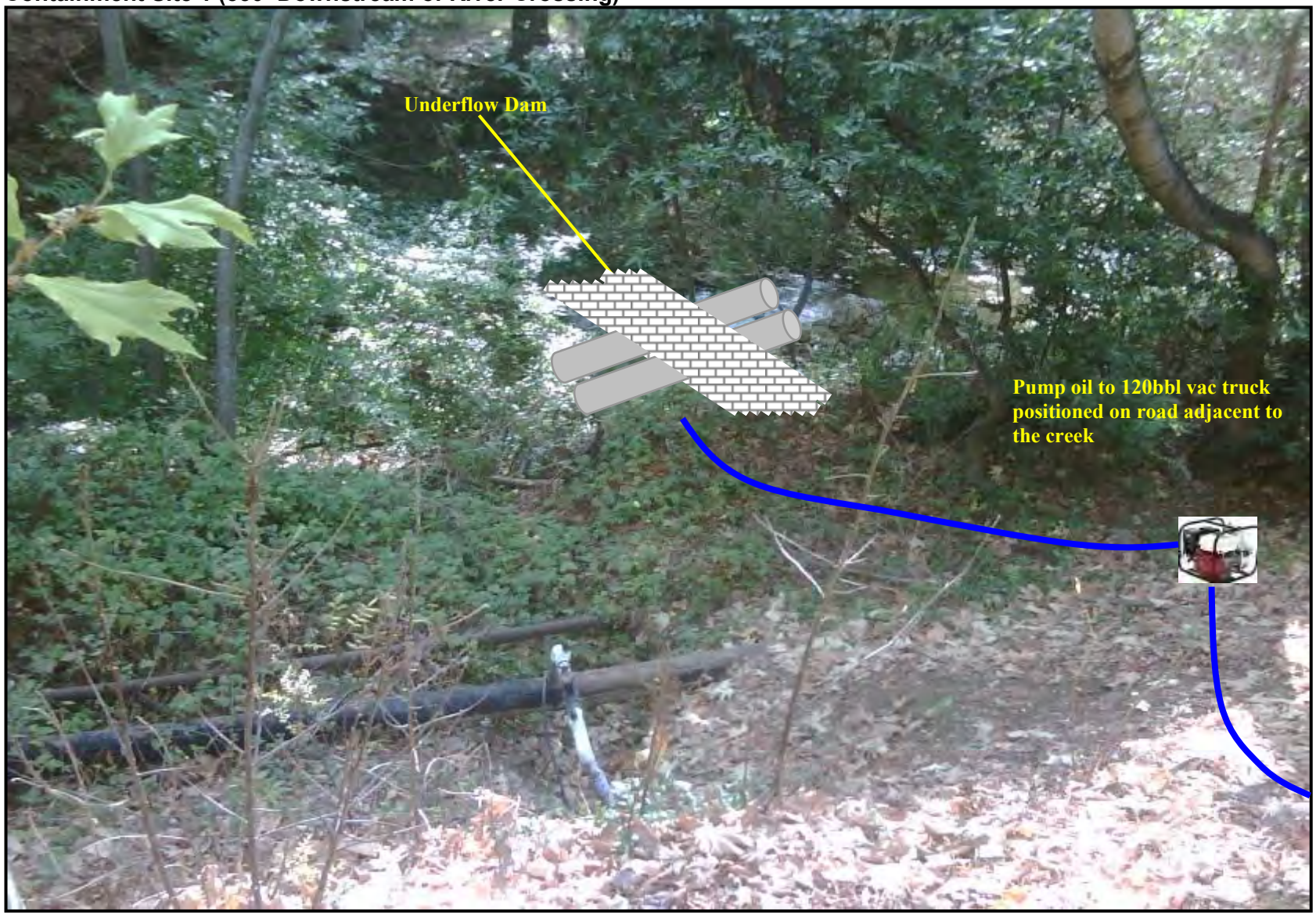
Equipment Deployment Diagrams

Containment Site 1 (530' Downstream of River Crossing)



Containment Site 2

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Containment Site 3

Environmental / Sensitive Area Information

Environmental Description	This is a small, intermittent creek which empties out onto a small fine-grained sand beach backed by a cobble-boulder storm berm. Mouth is open to ocean via culvert. The shoreline is primarily wave-cut rock platforms with some fine-grained sand and mixed sand and gravel beaches backed by coastal bluffs to the East and West. Offshore is Naples reef a popular fishing, diving and marine research area. Shoreline: From January through June harbor seals can be found pupping and breeding in the area. High concentrations of harbor seals all year. Grunion spawning on sand beaches Spring and summer high tides. California ACP 4: Section 4-625-B Ellwood OSCP: Appendix F
Downstream Receptor	Pacific Ocean
Cultural Description	Cultural, Historical, and Archaeological sites are known to exist in the area, however, the exact locations of these sites must be ascertained by contacting the Native American Heritage Commission at (916) 653-4082 and State Office of Historical Preservation (916) 653-6624, and/or the Central Coast Archaeological Information Center (805) 893-2474. California ACP 4: Section 4-625-B Ellwood OSCP: Appendix M
Agricultural Land use	Yes, along entire length of the creek from the crossing to the Pacific.
Industrial Land use	None.

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CREEK NAME: GATO CANYON

Crossing Information

Classification: Creek (Dry)

District: Santa Barbara County

Response Area: Goleta

Coordinates of Creek Crossing: N 34° 27'32.03" / W 119°59'13.56"

Directions from Primary and Secondary Base: Primary: Turn right out of Venoco Ellwood facility on to Hollister ave. Follow Hollister to the first Stop sign, turn left on to Cathedral Oaks rd and cross over US 101 fwy and turn left on to the US 101 entrance ramp. Travel 5.54 miles on US 101 North to Exit 116 (El Capitan Ranch Road) and exit US 101. Stay to the right and follow around on to unnamed road. Follow unnamed road back toward the East for .89 miles and Stop. Crossing is on the left.
Secondary: The secondary response base is NRCES Ventura office 3284 Ventura Ave, Ventura, CA 93001. Head North on Ventura Ave to Shell road, turn left on to Shell road, take CA-33 S about 2.7miles to US-101 N, travel on US-101 N 45.06 miles to the Avenida Del Capitan exit and exit US 101. Stay to the right and follow around on to unnamed road. Follow unnamed road back toward the East for .89 miles and Stop. Crossing is on the left.

Rendezvous Point – RVP: Venoco Ellwood Facility 7979 Hollister Ave Goleta, CA

Location of Pipeline Crossing: N 34° 27'32.03" / W 119°59'13.56"

Access to the Pipeline Crossing: Via US 101, Avenida Del Capitan, and unnamed road.

Estimated Spill Volume: 44.3 bbls

List of Containment Sites

Name	Distance downstream (FT)
Containment Site 1	0' (At the source)
Containment Site 2	1366'
Containment Site 3	3585'

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Crossing and Containment Sites Map

Site Access Diagram

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Access and Response Times

Vehicles Access Details	Containment Site 1: Vehicle access is possible via the access road. However, the road is narrow and no room for staging many vehicles. Access down to the creek by foot only. Containment Site 2: Vehicle access is possible via the access road. Large vehicles may have access problems passing through the hwy underpass as clearance will need to be checked depending on the vehicle. Containment Site 3: Vehicle access is possible via access roads. Large vehicles may have access problems passing through the hwy underpass. Clearance will need to be checked depending on the vehicle. Vehicles will be required to drive over the railway tracks to access this site, ground clearance will need to be taking into consideration.
Travel time from Primary Base to CS (hrs)	25 min
Travel time from Secondary Base to CS	1 hr 25 min

Watercourse Data

Creek Bed Type	**Mixture of gravel, sand, and rocks.**
Creek characteristics	**Average Flow: Dry** **Width: 6'** **Depth: Variable**
Creek banks condition	**Gradient: 5° - 80°** **Banks Height: 2.5' – 23' +**

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Deployment / Equipment Information

Containment Strategy /Containment and Recovery Equipment Options	Containment Site 1: - 250 each sandbags - Hand tools - Back Hoe Containment Site 2: - 250 each sandbags - Hand tools - Back Hoe Containment Site 3: - 250 each sandbags - Hand tools - Back Hoe	See Ellwood OSCP Appendix F for other additional equipment available
Storage Type/Number/ Unit Volume (bbls/yds3)	- 4-6 each 20yd waste bin - 2 each 120bbl Vac Tankers	
Total Volume (bbls/yds3)	- 240 bbls - 80-120 cubic yards	
Personnel Requirements	Containment Site 1: - 1 Supervisor - 5 Technicians Containment Site 2: - 1 Supervisor - 5 Technicians Containment Site 3: - 1 Supervisor - 5 Technicians - 1 Backhoe operator	
Laydown Area/Staging Area (FT^2)	Private property, will have to clear with land owner for appropriate space.	

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Equipment Deployment Diagrams

Containment Site 1 (At/Near the Source)

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Containment Site 2

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Containment Site 3

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Environmental / Sensitive Area Information

Environmental Description	This is a small, usually dry creek which empties out onto a small fine-grained sand beach. Mouth of the creek is directly open to the ocean. The shoreline is primarily fine-grained sand and mixed sand and gravel backed by coastal bluffs to the East and West. Other references: Ellwood OSCP: Appendix F
Downstream Receptor	Pacific Ocean
Cultural Description	Cultural, Historical, and Archaeological sites are known to exist in the area, however, the exact locations of these sites must be ascertained by contacting the Native American Heritage Commission at (916) 653-4082 and State Office of Historical Preservation (916) 653-6624, and/or the Central Coast Archaeological Information Center (805) 893-2474. One residence is located in the vicinity of the creek 580' to the East. N 34° 27'11.44" / W 119°59'06.93" Other references: Ellwood OSCP: Appendix M
Agricultural Land use	Yes, 450' West of the creek, just North of the railway.
Industrial Land use	None.

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CREEK NAME: LAS LLAGAS CREEK

Crossing Information

Classification: Creek

District: Santa Barbara County

Response Area: Goleta

Coordinates of Creek Crossing: N 34° 27'39.7" / W 119°59'59.4"

Directions from Primary and Secondary Base: Primary: Turn right out of Venoco Ellwood facility on to Hollister ave. Follow Hollister to the first Stop sign, turn left on to Cathedral Oaks rd and cross over US 101 fwy and turn left on to the US 101 entrance ramp. Travel 5.54 miles on US 101 North to Exit 116 (El Capitan Ranch Road) and exit US 101. Stay to the right and follow around onto El Capitan Ranch Road. Follow El Capitan Ranch Road back toward the East for .13 miles and Stop. Crossing is on the right.
Secondary: The secondary response base is NRCES Ventura office 3284 Ventura Ave, Ventura, CA 93001. Head North on Ventura Ave to Shell road, turn left on to Shell road, take CA-33 S about 2.7miles to US-101 N, travel on US-101 N 45.06 miles to Exit 116 (El Capitan Ranch Road) and exit US 101. Stay to the right and follow around onto El Capitan Ranch Road. Follow El Capitan Ranch Road back toward the East for .13 miles and Stop. Crossing is on the right.

Rendezvous Point – RVP: Venoco Ellwood Facility 7979 Hollister Ave Goleta, CA

Location of Pipeline Crossing: N 34° 27'39.7" / W 119°59'59.4"

Access to the Pipeline Crossing: Via US 101, Avenida Del Capitan, and unnamed road.

Estimated Spill Volume: 77.5 bbls

List of Containment Sites

Name	Distance downstream (FT)
Containment Site 1	0' (At the source)
Containment Site 2	1286'

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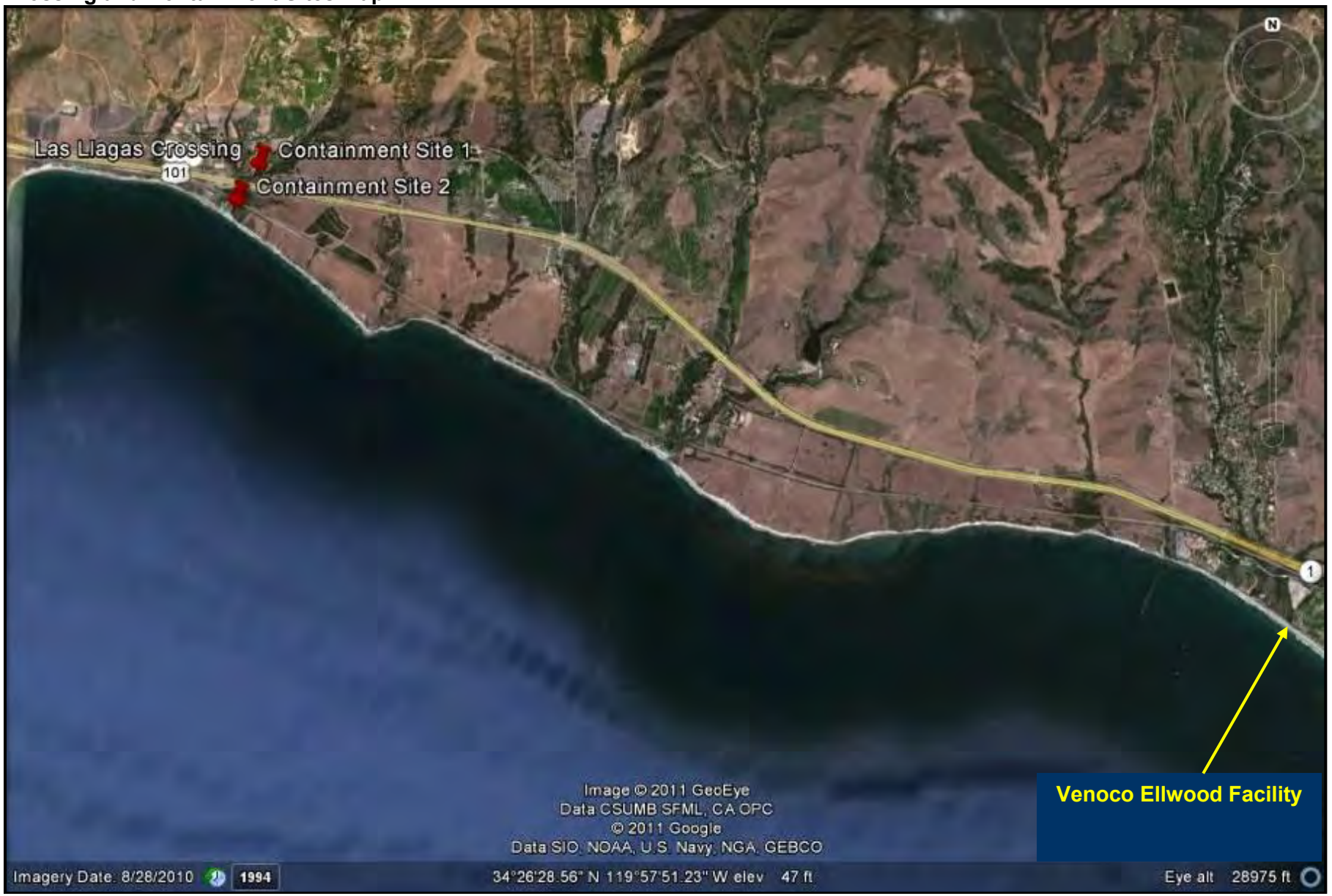
Crossing and Containment Sites Map



Site Access Diagram

Access and Response Times

Vehicles Access Details	Containment Site 1: Vehicle access is possible via the access road. However, the road is narrow and no room for staging many vehicles. Access down to the creek by foot only. Containment Site 2: Vehicle access is possible via access roads. Large vehicles may have access problems passing through the hwy underpass. Clearance will need to be checked depending on the vehicle. Vehicles will be required to drive over the railway tracks to access this site, ground clearance will need to be taking into consideration.
Travel time from Primary Base to CS (hrs)	25 min
Travel time from Secondary Base to CS	1 hr 25 min

Watercourse Data

Creek Bed Type	**Mixture of gravel, sand, and rocks.**
Creek characteristics	**Average Flow: < .5 FT/SEC.** **Width: 6' – 8'** **Depth: 3" – 1'**
Creek banks condition	**Gradient: 5° - 80°** **Banks Height: .5' – 12'**

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Deployment / Equipment Information

Containment Strategy /Containment and Recovery Equipment Options	Containment Site 1: - 60 each sandbags - 2 each 4" x 6" PVC Pipes - 1 each 3" self priming pump - 1 each Suction weir skimmer - Hand tools - Chain Saw Containment Site 2: - 150 each sandbags - 2 each 4" x 6" PVC Pipes - 1 each 3" self priming pump - 1 each Suction weir skimmer - Hand tools - Back Hoe	See Ellwood OSCP Appendix F for other additional equipment available.
Storage Type/Number/ Unit Volume (bbls/yds3)	- 4-6 each 20yd waste bin - 2 each 120bbl Vac Tankers	
Total Volume (bbls/yds3)	- 240 bbls - 80-120 cubic yards	
Personnel Requirements	Containment Site 1: - 1 Supervisor - 5 Technicians Containment Site 2: - 1 Supervisor - 5 Technicians - 1 Backhoe operator	
Laydown Area/Staging Area (FT^2)	Private property, will have to clear with land owner for appropriate space.	

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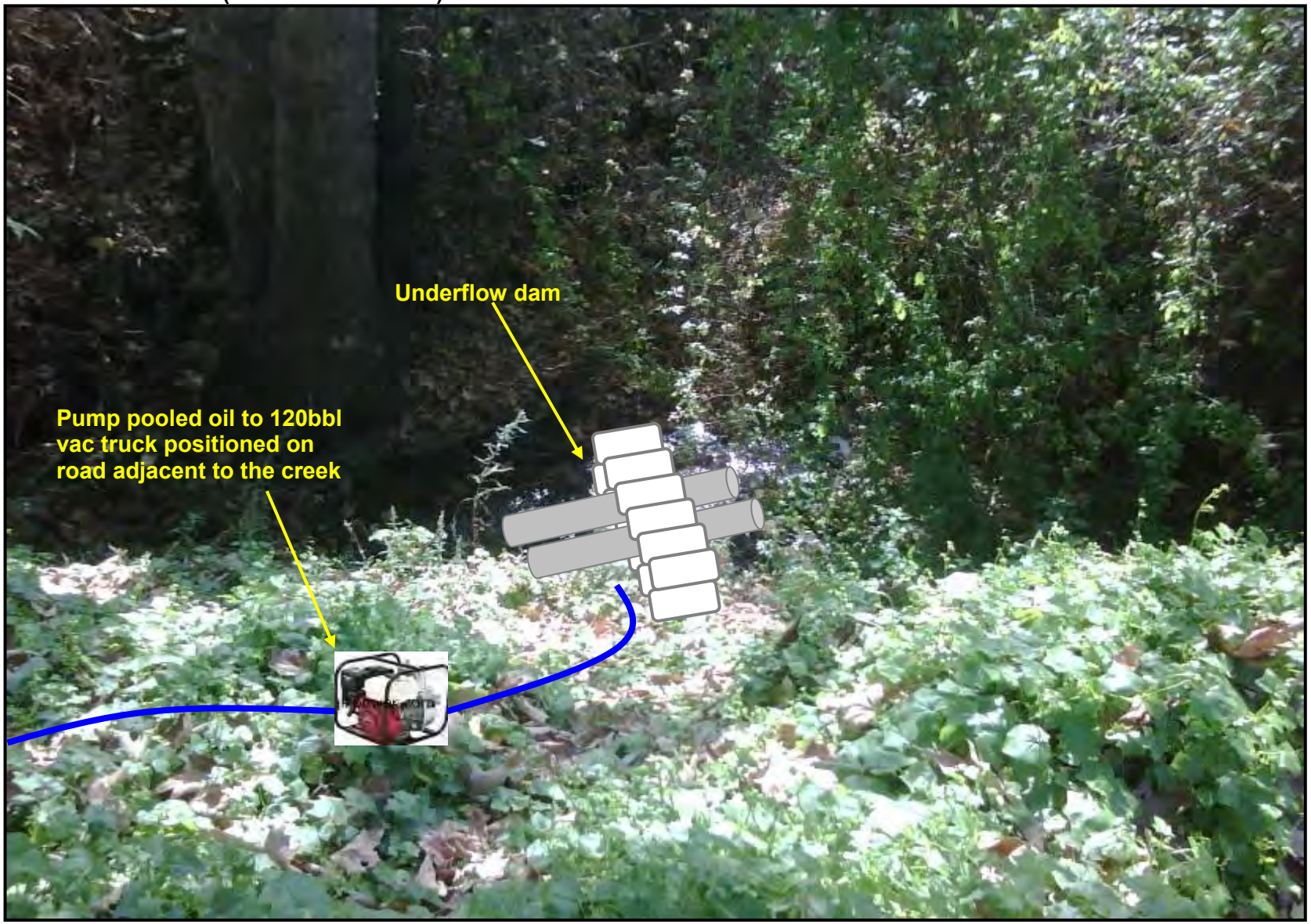
Equipment Deployment Diagrams

Containment Site 1 (At/Near the Source)



Containment Site 2

Environmental / Sensitive Area Information

Environmental Description	This inlet is located within a small private gated beach community. The Las Llagas Creek is characterized as intermittent flow with a small seasonal lagoon at the mouth. The creek mouth is bounded on the west by a graded access road and to the east and by a steep hill with no access. The stream empties onto a sand covered beach which may erode to cobbles in the winter months. The northern end of the lagoon has willow habitat. The creek flows through a large culvert which passes under US 101 and the railway. Other references: California ACP 4: Section 4-620-A Ellwood OSCP: Appendix F .
Downstream Receptor	Pacific Ocean
Cultural Description	Cultural, Historical, and Archaeological sites are known to exist in the area, however, the exact locations of these sites must be ascertained by contacting the Native American Heritage Commission at (916) 653-4082 and State Office of Historical Preservation (916) 653-6624, and/or the Central Coast Archaeological Information Center (805) 893-2474. Rancho Arroyo Alamar is located just Northwest of the pipeline crossing. Gated residential community is located in the vicinity of the creek 210' to the West. Other references: California ACP 4: Section 4-620-A Ellwood OSCP: Appendix M
Agricultural Land use	Yes, there is an established grove just Southeast of the pipeline/river crossing.
Industrial Land use	None.

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CREEK NAME: EL CAPITAN CREEK

Crossing Information

Classification: Creek

District: Santa Barbara County

Response Area: Goleta

Coordinates of Creek Crossing: N 34° 27'49.7" / W 120°01'20.2"

Directions from Primary and Secondary Base: Primary: Turn right out of Venoco Ellwood facility on to Hollister ave. Follow Hollister to the first Stop sign, turn left on to Cathedral Oaks rd and cross over US 101 fwy and turn left on to the US 101 entrance ramp. Travel 6.36 miles on US 101 North to Exit 117 (El Capitan State Beach) and exit US 101. Follow the exit ramp on to Calle Real and stop at .4 miles, or after the second road on the right.
Secondary: The secondary response base is NRCES Ventura office 3284 Ventura Ave, Ventura, CA 93001. Head North on Ventura Ave to Shell road, turn left on to Shell road, take CA-33 S about 2.7miles to US-101 N, travel on US-101 N 45.88 miles to Exit 117 (El Capitan State Beach) and exit US 101. Follow the exit ramp on to Calle Real and stop at .4 miles, or after the second road on the right.

Rendezvous Point – RVP: Venoco Ellwood Facility 7979 Hollister Ave Goleta, CA

Location of Pipeline Crossing: N 34° 27'49.7" / W 120°01'20.2"

Access to the Pipeline Crossing: Via US 101, Calle Real, El Capitan State Beach Road.

Estimated Spill Volume: 93.4 bbls

List of Containment Sites

Name	Distance downstream (FT)
Containment Site 1	20' (Downstream of the source)
Containment Site 2	1145'
Containment Site 3	2119'

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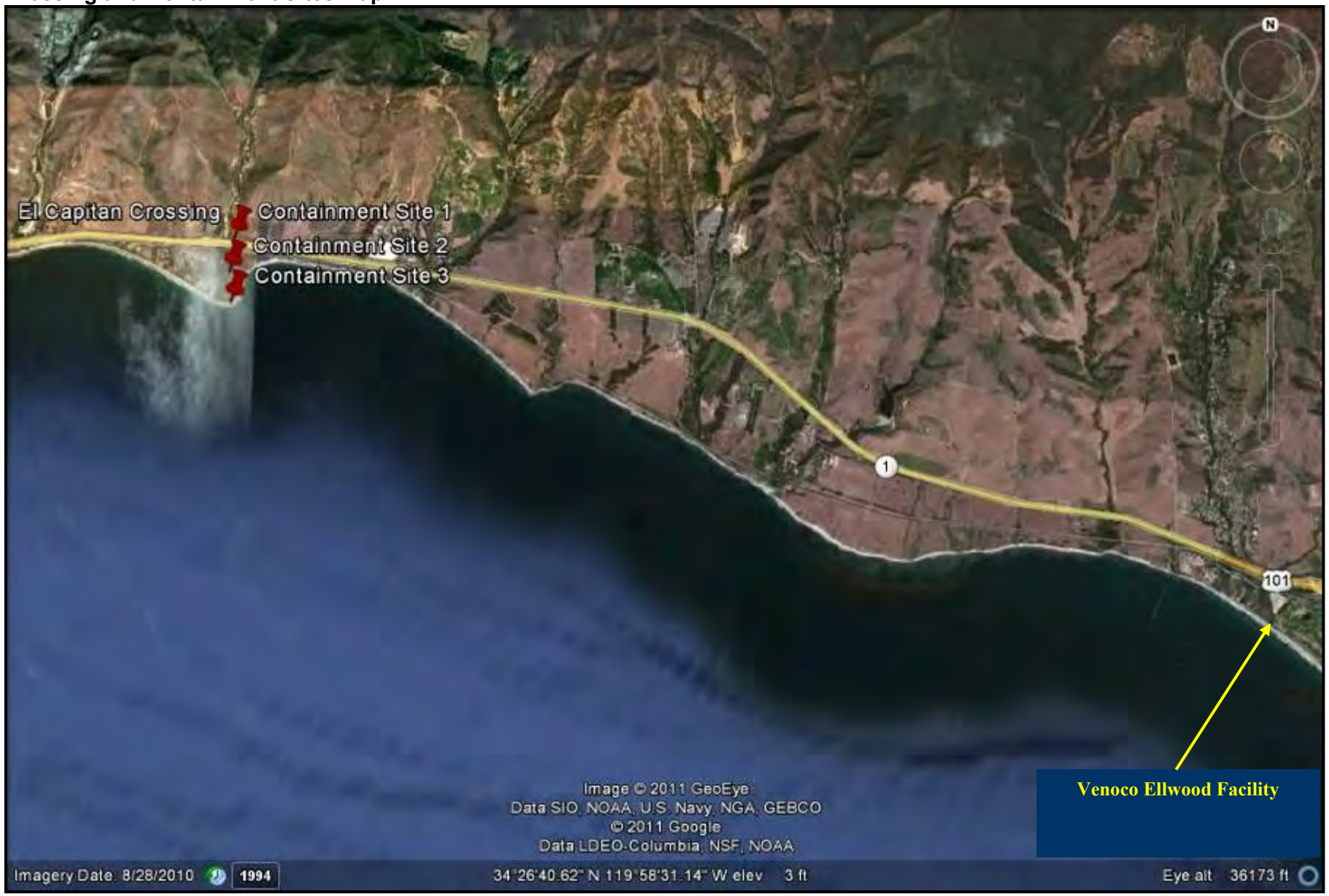
Crossing and Containment Sites Map



Site Access Diagram

Access and Response Times

Vehicles Access Details	Containment Site 1: Vehicle access is possible via Calle Real. However, the road is narrow and no room for staging many vehicles. Utilize El Capitan State Beach parking area for vehicle and equipment staging. Containment Site 2: Vehicle access is possible via El Capitan State Beach Rd. However, the road is narrow and no room for staging many vehicles. Utilize El Capitan State Beach parking area for vehicle and equipment staging. Containment Site 3: Vehicle access is possible via El Capitan State Beach Rd. However, the road is narrow and no room for staging many vehicles. Utilize El Capitan State Beach parking area for vehicle and equipment staging.
Travel time from Primary Base to CS (hrs)	30 min
Travel time from Secondary Base to CS	1 hr 30 min

On-Site Watercourse Data

Creek Bed Type	**Mixture of gravel, sand, and rocks.**
Creek characteristics	**Average Flow: < .5 FT/SEC.** **Width: 3' – 6'** **Depth: 3" – 1'**
Creek banks condition	**Gradient: 5° - 45°** **Banks Height: .5' – 4'**

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Deployment / Equipment Information

Containment Strategy /Containment and Recovery Equipment Options	Containment Site 1: - 60 each sandbags - 2 each 4" x 6" PVC Pipes - 1 each Suction weir skimmer - Hand tools Containment Site 2: - 200 each sandbags - 3 each 4" x 6" PVC Pipes - 1 each 3" self priming pump - 1 each Suction weir skimmer - Hand tools - Back Hoe Containment Site 3: - 60 each sandbags - Hand tools - Back Hoe	See Ellwood OSCP Appendix F for other additional equipment available.
Storage Type/Number/ Unit Volume (bbls/yds3)	- 4-6 each 20yd waste bin - 3 each 120bbl Vac Tankers - 1 each 20k Baker Tanks	
Total Volume (bbls/yds3)	- 20k bbls - 80-120 cubic yards	
Personnel Requirements	Containment Site 1: - 1 Supervisor - 5 Technicians Containment Site 2: - 1 Supervisor - 5 Technicians Containment Site 3: - 1 Supervisor - 5 Technicians - 1 Backhoe operator	
Laydown Area/Staging Area (FT^2)	State Beach. Will have to get approval from Parks and Recreation to utilize parking area(s) for staging.	

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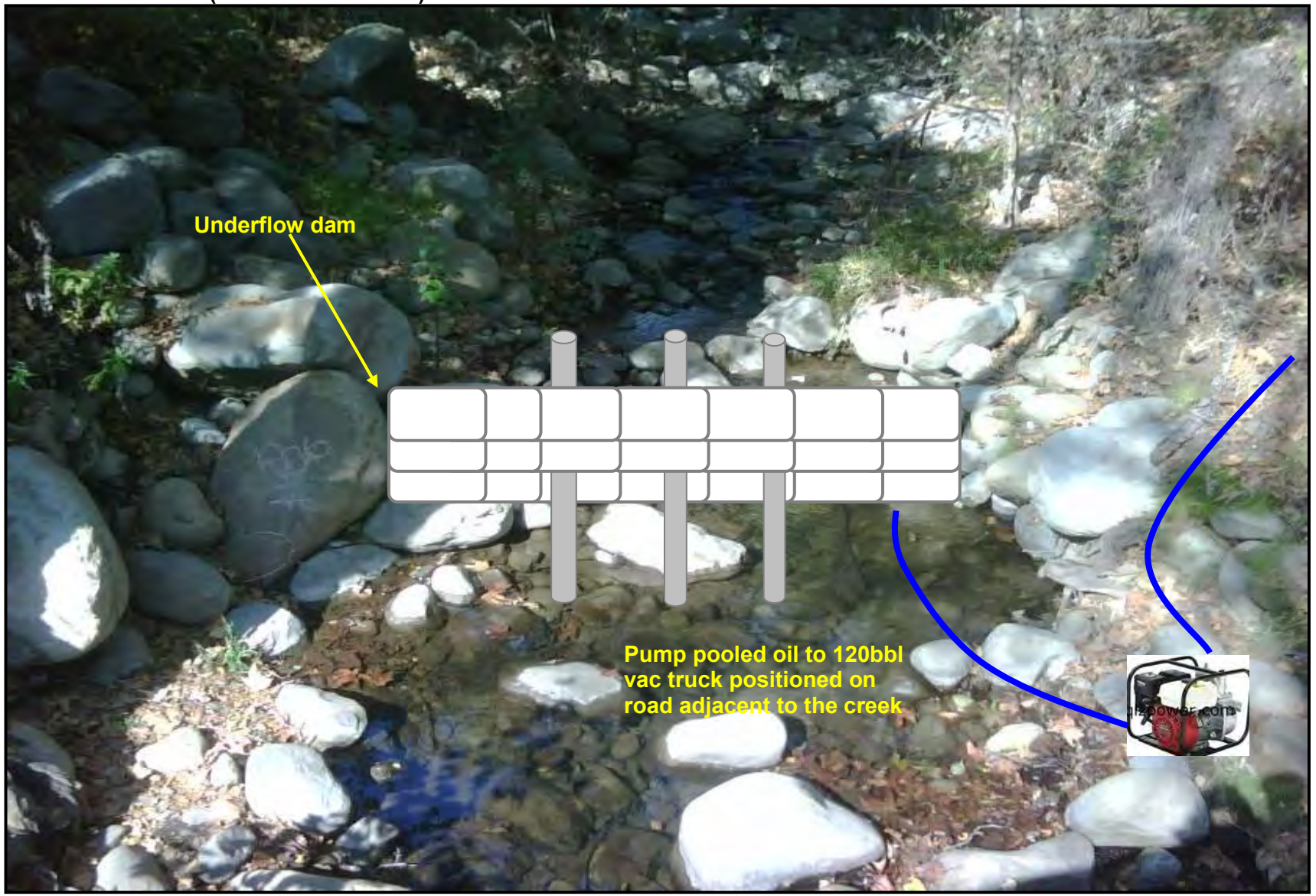
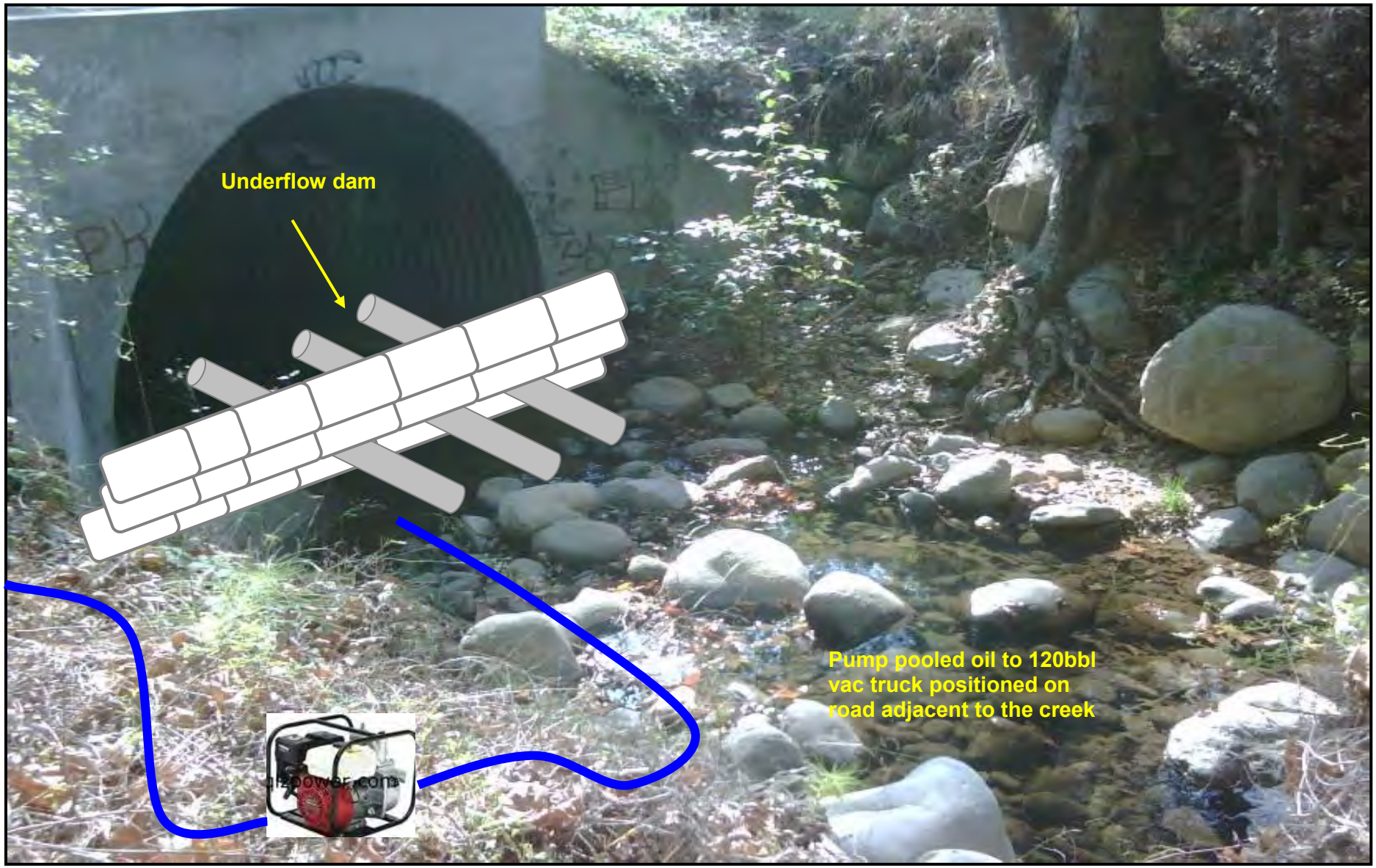
Equipment Deployment Diagrams

Containment Site 1 (At/Near the Source)



Containment Site 2



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Containment Site 3

Environmental / Sensitive Area Information

Environmental Description	El Capitan is a relatively small creek which empties on to a beach shoreline consisting of mixed sand, gravel, cobble, and boulder. Whenever the creek is open (most likely from late fall through early summer, depending on rainfall) wetland biota is at risk. Pelicans. Gulls, terns and other sea birds are at risk. California ACP 4: Section 4-615-A Ellwood OSCP: Appendix F.
Downstream Receptor	Pacific Ocean
Cultural Description	Cultural, Historical, and Archaeological sites are known to exist in the area, however, the exact locations of these sites must be ascertained by contacting the Native American Heritage Commission at (916) 653-4082 and State Office of Historical Preservation (916) 653-6624, and/or the Central Coast Archaeological Information Center (805) 893-2474. El Capitan State Beach is adjacent to the creek and is utilized for camping, surfing, and other recreational activities. El Capitan Canyon Resort is located just to the North of the pipeline/river crossing. California ACP 4: Section 4-615-A Ellwood OSCP: Appendix M
Agricultural Land use	None.
Industrial Land use	None.

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CREEK NAME: CORRAL CANYON CREEK

Crossing Information

Classification: Creek

District: Santa Barbara County

Response Area: Goleta

Coordinates of Creek Crossing: N 34° 27'51.23" / W 120°02'43.3"

Directions from Primary and Secondary Base: Primary: Turn right out of Venoco Ellwood facility on to Hollister ave. Follow Hollister to the first Stop sign, turn left on to Cathedral Oaks rd and cross over US 101 fwy and turn left on to the US 101 entrance ramp. Travel 6.36 miles on US 101 North to Exit 117 (El Capitan State Beach exit) and exit US 101 on to Calle Real. Follow Calle Real 1.72 miles to the Exxon Mobile staging yard on the right. Crossing is just west of the entrance.
Secondary: The secondary response base is NRCES Ventura office 3284 Ventura Ave, Ventura, CA 93001. Head North on Ventura Ave to Shell road, turn left on to Shell road, take CA-33 S about 2.7miles to US-101 N, travel on US-101 N 45.88 miles to Exit 117 (El Capitan State Beach exit) and exit US 101 on to Calle Real. Follow Calle Real 1.72 miles to the Exxon Mobile staging yard on the right. Crossing is just west of the entrance.

Rendezvous Point – RVP: Venoco Ellwood Facility 7979 Hollister Ave Goleta, CA

Location of Pipeline Crossing: N 34° 27'51.23" / W 120°02'43.3"

Access to the Pipeline Crossing: Via US 101, Calle Real, El Capitan State Beach Road.

Estimated Spill Volume: 65.4 bbls

List of Containment Sites

Name	Distance downstream (FT)
Containment Site 1	0' (At the source)
Containment Site 2	476'
Containment Site 3	630' Pacific Ocean

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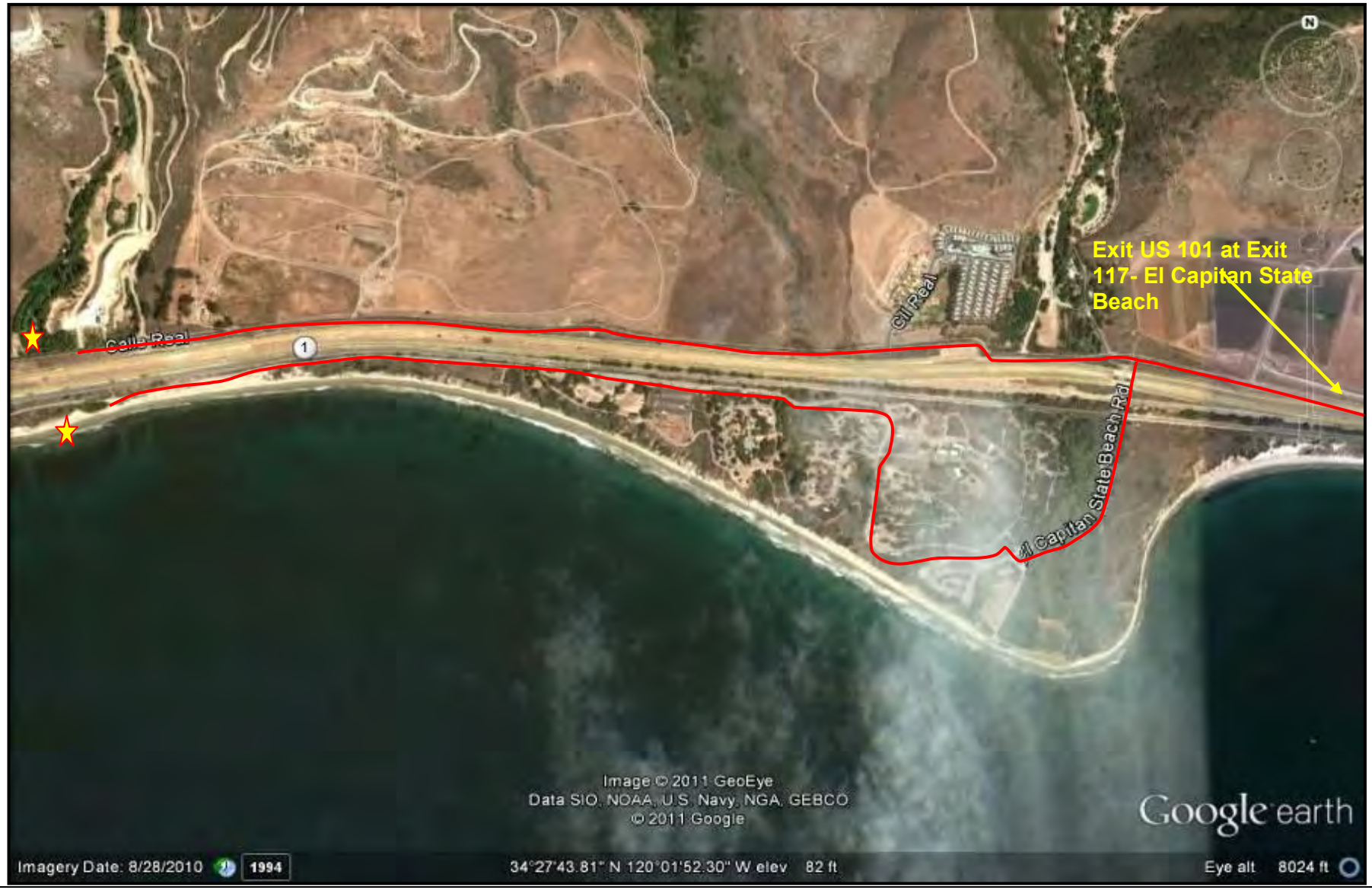
Crossing and Containment Sites Map

Site Access Diagram



Access and Response Times

Vehicles Access Details	Containment Site 1: Vehicle access is possible via Calle Real and the Exxon Mobile staging area. Containment Site 2: Vehicle access is possible via El Capitan State Beach Rd. However, the road is narrow and no room for staging many vehicles. Utilize El Capitan State Beach parking area for vehicle and equipment staging. Containment Site 3: Response vessel access only. Dependent upon sea and weather conditions.
Travel time from Primary Base to CS (hrs)	35 min
Travel time from Secondary Base to CS	1 hr 35 min

Watercourse Data

Creek Bed Type	**Mixture of gravel, sand, and rocks.**
Creek characteristics	**Average Flow: < .5 FT/SEC.** **Width: 4'** **Depth: 3" – 1'**
Creek banks condition	**Gradient: 25° (Culvert)** **Banks Height: (Culvert)**

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Deployment / Equipment Information

Containment Strategy /Containment and Recovery Equipment Options	Containment Site 1: - 60 each sandbags - 2 each 4" x 6" PVC Pipes - 1 each Suction weir skimmer - Hand tools Containment Site 2: - Hand tools - Back Hoe Containment Site 3: - 2 each Response Vessels - 1800' of Ocean Boom - 8 – 10 each 40# Anchor Sets - 1 each Skimming System - 1 each 20-50k Storage Barge	See Ellwood OSCP Appendix F for other additional equipment available.
Storage Type/Number/ Unit Volume (bbls/yds3)	- 2 each 20yd waste bin - 1 each 120bbl Vac Tankers - 1 each 20k Baker Tanks	
Total Volume (bbls/yds3)	- 20 - 70k bbls - 40 cubic yards	
Personnel Requirements	Containment Site 1: - 1 Supervisor - 5 Technicians Containment Site 2: - 1 Supervisor - 5 Technicians - 1 Backhoe operator Containment Site 3: - 2 Vessel Operators - 6 Technicians - 1 Tankerman	
Laydown Area/Staging Area (FT^2)	Exxon Mobile Staging Area = 72,192sq ft	

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Equipment Deployment Diagrams

Containment Site 1 (At/Near the Source)

Containment Site 2

Containment Site 3

Environmental / Sensitive Area Information

Environmental Description	The stream flows though a culvert under Hwy 101, where it discharges directly onto the beach. From late spring through early winter, stream flows are generally less than 1mph. During most years this is a perennial stream which supports dense woodland. The streambed and banks of Corral Creek is comprised primarily of cobbles and boulders and are subject to penetration and saturation of oil. Area is susceptible to oil stranding during low flow cycles. The primary birds at risk are terrestrial species which rely upon the stream for foraging, water, and/or bathing during the breeding, nesting, and fledging seasons, which last from March through September. Other references: California ACP 4: Section 4-613-A Ellwood OSCP: Appendix F
Downstream Receptor	Pacific Ocean
Cultural Description	Cultural, Historical, and Archaeological sites are known to exist in the area, however, the exact locations of these sites must be ascertained by contacting the Native American Heritage Commission at (916) 653-4082 and State Office of Historical Preservation (916) 653-6624, and/or the Central Coast Archaeological Information Center (805) 893-2474. El Capitan State Beach is 3,900’ to the East. Other references: California ACP 4: Section 4-613-A Ellwood OSCP: Appendix M
Agricultural Land use	None.
Industrial Land use	Exxon Mobile refinery and staging area both are adjacent to Coral Creek.

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Table 2-11. Ellwood Onshore Facility Tank Overfill / Failure Response Checklist.

Actions To Be Taken	Responsible Person[1]	Complete (Time/Initial)
Assess situation/ take command – **EXERCISE CAUTION**.[2]	Operator / Facility Supervisor	
If failure: ESD. **If overfill**: shut down Platform Holly if necessary and check tank levels of overflow tank.	Operator	
If person down, notify Operator-In-Charge and rescue/evacuate person (if safe to do so).[2]	Person Discovering Victim	
Eliminate all ignition sources.	Operations Personnel	
Call 9-1-1 or 805 683-2724 via cell phone:[3] • Thomas Guide Grid 993-D2. • Your name, company, phone number. • Type of emergency. • Location (7979 Hollister Avenue). • Route to approach. • Number and types of injuries.	Operator-In-Charge	
Ensure fire systems are activated as appropriate.	Operations Personnel	
Assign person to direct emergency response vehicles and to guard gates.	Operator-In-Charge	
Monitor area with gas detectors to determine vapor area.[2]	Operators/Roustabout	
Inspect pipelines and piping equipment.	Operator	
Notify Clean Seas to assist or standby and/or activate NRCES.	Facility Supervisor	
Make necessary notifications (see Table 2-2E).	Facility Supervisor / Liaison	
Brief fire department upon arrival.	Facility Supervisor	
Determine need for additional response resources.	Facility Supervisor	
Document all actions.	All Personnel	

[1] Or other qualified personnel.

[2] Appropriate personal protective equipment (PPE) must be worn.

[3] Use one of the outside phone lines. If bad connection, hang up and call again.

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Table 2-13. Piping Rupture/Leak Response Checklist.

Actions To Be Taken	Responsible Person[1]
Assess situation/ take command – EXERCISE CAUTION.	Operator / Facility Supervisor
Shut down affected line, ESD if necessary, and sound alarm.	Operator
Shut down Ellwood pump, if applicable.	Operator
Close valves to isolate leak / rupture.	Operator
If person down, notify Operator-In-Charge and rescue/evacuate person (if safe to do so).[2]	Person Discovering Victim
Eliminate all ignition sources.	Operations Personnel
Call 9-1-1 or 805 683-2724 via cell phone:[3] • Thomas Guide grid. • Your name, company, phone number. • Type of emergency. • Location. • Route to approach. • Number and types of injuries.	Operator-In-Charge
Ensure fire systems are available.	Operations Personnel
Confine onshore spill (if safe to do so).[2]	Operators/Roustabout
Ensure valves on secondary containment are closed if in affected area.	Operations Personnel
Monitor area with gas detectors to determine vapor area.[2]	Operators/Roustabout
Inspect pipelines and piping equipment.	Operator
Notify Clean Seas to assist or standby and/or activate NRCES.	Facility Supervisor
Make necessary notifications (see Table 2-2E).	Facility Supervisor / Liaison
Brief fire department upon arrival.	Facility Supervisor
Determine need for additional response resources.	Facility Supervisor
Document all actions.	All Personnel

[1] Or other qualified personnel.
[2] Appropriate personal protective equipment (PPE) must be worn.
[3] Use one of the outside phone lines. If bad connection, hang up and call again.

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Table 2-14. Explosion And/Or Fire Response Checklist.

Actions To Be Taken	Responsible Person[1]
Assess situation/ take command – EXERCISE CAUTION.	Facility Supervisor
ESD if necessary and sound alarm.	Operator
If person down, notify Operator-In-Charge and rescue/evacuate person (if safe to do so).[2]	Person Discovering Victim
Call 9-1-1 or 805 683-2724 via cell phone:[3] • Thomas Guide grid.[4] • Your name, company, phone number. • Type of emergency. • Location. • Route to approach. • Number and types of injuries.	Operator-In-Charge
Shut off source of supply.	Operator
Ensure fire systems are activated.	Operator
Protect exposure with hose lines or monitors.	Operators/Roustabouts
Attempt to extinguish fire (if safe to do so).[2]	Operators/Roustabouts
Eliminate all ignition sources.	Operations Personnel
Assign person to direct emergency response vehicles and to guard gates.	Operator-In-Charge
Make necessary notifications (see Table 2-2E).	Facility Supervisor / Liaison
Brief Fire Department upon arrival.	Facility Supervisor
Inspect pipelines, piping equipment, and firewater system integrity as necessary.[2]	Operators
Check off-site areas for damage.	Operators/Roustabouts
Refer to other checklists as necessary.	Facility Supervisor
Document all actions.	All Personnel

[1] Or other qualified personnel. During PM hours, Night Operator is the responsible person.
[2] Appropriate personal protective equipment (PPE) must be worn.
[3] Facility Supervisor or designee.
[4] EOF: Grid 993-D2, Ellwood Pier (access to Platform Holly): Grid 993-B2.

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Table 2-15. Other Equipment Failure Response Checklist.

Actions To Be Taken	Responsible Person[1]
Assess situation/ take command. EXERCISE CAUTION.[2]	Operator / Facility Supervisor
ESD if necessary and sound alarm.	Operations Personnel
Make necessary notifications (see Table 2-2E).	Facility Supervisor / Liaison
Evaluate risk of spill and/or fire/explosion and refer to other checklist(s) as necessary.	Facility Supervisor
Determine need for additional response resources.	Facility Supervisor
Document all actions.	All Personnel

[1] Or other qualified personnel.

[2] Appropriate personal protective equipment (PPE) must be worn.

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2.5 DIRECTORY OF CONTACTS

This directory includes the following lists of contacts:

- Table 2-16 Venoco SIRT, IIRT, & Facility Phone Numbers
- Table 2-16a Clean Seas Yard
- Table 2-17 Response Contractors and Cooperatives
- Table 2-18 Offshore Operators, Utilities & Rail Road
- Table 2-19 Regulatory Agencies
- Table 2-20 Emergency Services
- Table 2-21 Waste Management Services
- Table 2-22 Outside Services and Resources

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Table 2-16 Venoco SIRT, IIRT And Facility Phone Numbers

SIRT						
Assigned Position	**Pri/Alt**	**Name**	**Office**	**Home**	**Fax**	**Cell/Pager**
Communications	Pri	IT Help desk	745-2222			
	Alt	IT Help desk	745-2222			
Decon/Haz Waste	Pri	NRC Envir.	800-337-7455			331-0126
	Alt	NRC Envir.	800-337-7455			331-0126
Documentation	Pri	Martha Saavedra	745-2159		745-1816	455-6718
	Alt		745-		745-	
Deputy Incident Commander	Pri	Keith Wenal	745-2259	682-1888	745-1176	705-9307
	Alt					
	Pri					
	Alt					
Environmental	Pri	John Garnett	745-2170		745-1176	765-5450
	Alt	Eric Bridgford	745-2109			720-250-8060
Finance/Claims	Pri	Michael Howell	745-2137		745-1816	814-4419
	Alt	Brian Musso	745-2128		745-1816	816-2503
Incident Commander	Pri	Larry Huskins	745-2199	755-4921	745-1816	816-2790
	Alt	Ian Livett	745-2196	845-9122	745-1816	722-0772
	Pri					
	Alt					
Legal	Pri	Brian Donovan	303-600-2911	303-713-0538		303-963-6444
	Alt	Don Zrehigian	745-2187	376-2144	745-1816	450-6981
Liaison	Pri	Pat Corcoran	745-2264	685-8117	745-1176	455-9654
	Alt	Bruce Carter	745-2184	961-8104	745-1816	220-8369
Logistics	Pri	George Ramsey	745-2133	640-7638	745-2217	729-7029
	Alt					
Operations	Pri	Jeff MacDonald	961-2301	736-1750	961-2349	455-9666
	Alt	Doug Taylor	745-4527			455-9650
Planning	Pri	Joel Toreja	745-2132	483-2405	745-2217	698-6172
	Alt	Chris Peltonen	745-2260	845-3265	745-1846	705-2147
Public Info Officer	Pri	Lisa Rivas	745-2164	967-6133	745-1861	637-6816
	Alt	Steve Greig	745-2255	568-0855	745-1406	895-8254
Recovery/Protection Branch	Pri	Jerry Jeffreys	961-2360		745-1816	448-3691
	Alt	Tony Stebleton	745-2162		745-1846	722-0655
Resources Unit	Pri	Zach Schock	745-2172			303-330-2939
	Alt	Jeff Bentley	745-2198	220-6714		616-5359
Safety	Pri	Alan Stetler	745-2283	642-9644	745-1176	453-0842
	Alt	Walt McCarty	745-2260	659-5881	961-2349	455-9643
Services	Pri	Tiffany Tapp	745-2113	794-3626	745-2211	450-5843
	Alt	Robert Williams	745-2165	740-1317	745-2217	895-8938
Situation Unit	Pri	Tony Soriano	745-2254	933-4613	745-1406	455-9677
	Alt	Dan Fletcher	745-2192			835-9294
Support Branch	Pri	Joe Payne	644-1400			455-9646
	Alt	Ryan Referente	745-2147			201-7049
Surveillance	Pri	Clean Seas	684-4719		684-0484	684-3838
	Alt	Clean Seas	684-4719		684-0484	684-3838
Well Control	Pri	Brent Martin	745-2201			505-258-1140
	Alt	Noe Viramontes	745-2158		745-2211	451-6029
Wildlife Branch	Pri	Jonathon Schuhkre	745-2121	477-7503	745-1846	949-632-7209
	Alt	Kristof Igloi	745-2112			451-0144
Note: All numbers "805" area code unless specified.						

Table 2-16. Venoco SIRT, IIRT And Facility Phone Numbers

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Table 2-16. Venoco SIRT, IIRT And Facility Phone Numbers (Continued).

IIRT:						
Assigned Position	**Pri/Alt**	**Name**	**Office**	**Home**	**Fax**	**Cell/Pager**
Incident Commander	Pri	Jeff MacDonald	961-2301	736-1750	961-2349	455-9666
	Alt	Person-In Charge	Facility Phone/Radio			
Crew Boat Company		C & C	271-1313 800 443-8531 (24-hr)			
Contact		Don Sutton				
Boat		Doug C	451-6216			VENOCO 229
Facilities:						
EOF Emergency			961-2375			
Holly Emergency			961-2360			
Ellwood Marine Terminal			968-2212			
Ellwood Onshore Facility			961-2339		961-2349	
Ellwood Pier			968-2341			
Platform Holly			961-2360 961-2361 961-2364 961-2370 961-2371 961-2374		961-2358	
Note: All numbers "805" area code unless specified.						

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Table 2-16a. Clean Seas Yard

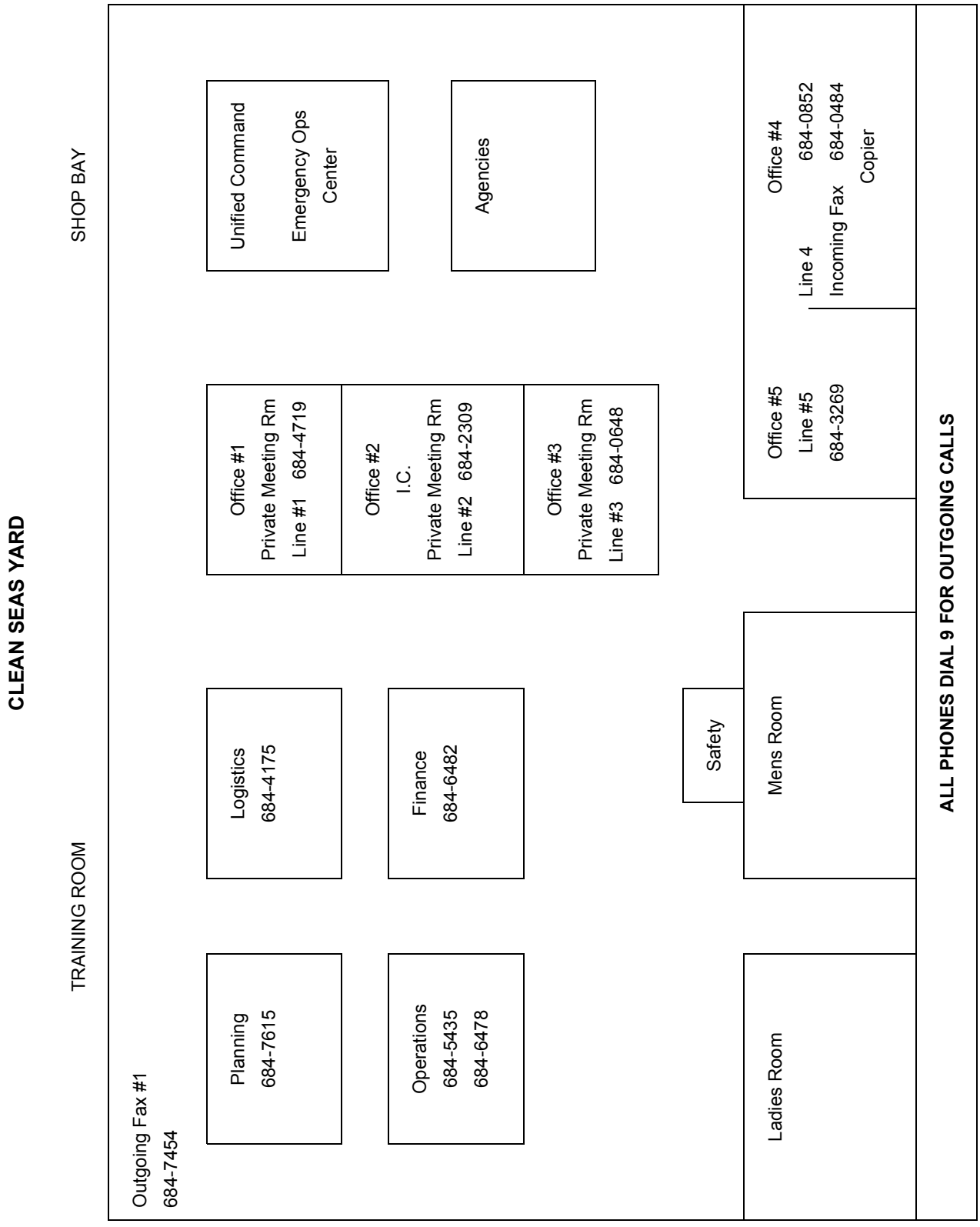

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Table 2-17. Response Cooperative and Contractors.

Company	Contact	Telephone
Clean Seas 990 Cindy Ln. Carpinteria, CA 93013	Ike Ikerd Kyle Hanson	(805) 684-3838 (24-hour) (805) 684-2650 (fax) (805) 684-3838 (805) 455-5502
National Response Corporation Environmental Services, Inc. (NRCES) 3284 Ventura Avenue Ventura, CA 93001	Tom Hale	(800) 337-7455 (24-hour) (805) 667-8424 (office) (805) 331-0126 (cell)
MSRC 971 South Seaside Terminal Island, CA 90731		(800) 645-7745

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Table 2-18. Offshore Operators, Utilities, & Rail Road.

Facility	Operator	Telephone
A	DCOR	(805) 585-1079
B	DCOR	(805) 585-1069
C	DCOR	(805) 585-1059
Habitat	DCOR	(805) 585-1043 (805) 585-1040
Henry	DCOR	(805) 585-1099
Hillhouse	DCOR	(805) 585-1089
Hogan	POOI	(805) 643-1195
Houchin	POOI	(805) 643-1195
Goleta Sanitation / Sewer District		(805) 697-4519
Goleta Water District		(805) 964-6761 (24-hr)
Southern California Edison (Edison International)		(800) 611-1911 (805) 963-3671
Southern California Gas		(800) 427-2000 (805) 681-8093 (24-hr)
Amtrak		(800) 872-7245
Union Pacific Railroad		(800) 870-8777

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Table 2-19. Regulatory Agencies.

Jurisdiction	Agency	Telephone
Federal	**National Response Center** Washington, D.C.	(800) 424-8802 (24-hour)
	United States Coast Guard Marine Safety Office Los Angeles/Long Beach 1001 South Seaside Avenue Building 20 San Pedro, CA 90731	(310) 833-1600 (24-hour)
	Environmental Protection Agency Region 9 75 Hawthorne Street San Francisco, CA 94105	(800) 424-8802 (24-hour)
	For initial reporting of spill, contact: **Bureau of Safety and Environmental Enforcement** Califronia District Office 770 Paseo Camarillo Camarillo, CA 93010	(805) 389-7775 (24-hour)
	Flight Service Station Hawthorne, CA	(800) 992-7433
	National Marine Fisheries Service Joe Cordero Marine Mammals 501 West Ocean Blvd., Suite 4200 Long Beach, CA 90802-4213	(562) 980-4000 (562) 506-4315 (spill >100 bbl)
	National Oceanic and Atmospheric Administration (NOAA) Channel Islands National Marine Sanctuary 113 Harbor Way Santa Barbara, CA 93109	(805) 966-7107 (805) 729-1279 (emer. cell)
	NOAA Injury Assessment Coordinator (John Cubit) 501 West Ocean Blvd., Suite 4470 Long Beach, CA 90802	(562) 980-4081
	NOAA Scientific Support Coordinator Jordan Stout Alameda, CA	(510) 437-5344 (office) (510) 437-5345 (fax) (800) 759-8888, PIN 579-8818 (pager) (206) 321-3320 (cellular)
	NOAA Trajectory Analysis 7600 Sandpoint Way NE Bin C15700 Seattle, WA 98115	(206) 526-6317 (office) (206) 526-6329 (fax) (206) 526-4911 (24-hr, HazMat Duty Officer)
	National Weather Service Oxnard	(805) 988-6610
	U. S. Department of Transportation **PHMSA** East Building, 2nd Floor 1200 New Jersey Ave, SE Washington, D.C. 20590	(202) 366-4433 (202) 366-3666 (fax) **Western Region Office:** (720) 963-3160 (720) 963-3161 (fax)

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Table 2-19. Regulatory Agencies.

Jurisdiction	Agency	Telephone
	U.S. Fish and Wildlife Service Endangered Species Recovery 2493 Portola Road, Suite B Ventura, CA 93003	(805) 644-1766
State	**California Emergency Management Agency** 2800 Meadowview Road Sacramento, CA 95832	(800) 852-7550 (24-hour)
	California Coastal Commission 45 Fremont Street, Suite 2000 San Francisco, CA 94105-2291	(415) 201-5792 (pager, primary number for spill reports) (415) 904-5240 (office) (415) 904-5400 (fax)
	Cal-EPA Dept. of Toxic Substance Control 1011 N. Grandview Avenue Glendale, CA 91201	(818) 551-2816 (800) 698-6942 (waste alert report)
	CHP (California Highway Patrol) 6465 Calle Real Goleta, CA 93117	(805) 967-1234
	CalOSHA 1655 Mesa Verde, Suite 150 Ventura, CA 93003	(805) 654-4581
	Caltrans 3999 State Street Santa Barbara, CA 93105 District 7 950 County Square Drive Ventura, CA 93009	 (805) 568-1250 (916) 653-3442 (24-hour) (805) 650-7179
	Department of Fish and Game 4665 Lampson Avenue, Suite C Los Alamitos, CA 90720	(562) 342-7100 (805) 654-6281 (spill affecting wildlife)
	Department of Fish and Game/OSPR Ms. Lisa Curtis 1700 “K” Street, Suite 250 Sacramento, CA 95814	(916) 445-0045 (24-hour) (916) 445-9326 (916) 324-8829 (fax)
	Division of Oil and Gas and Geothermal Resources 5075 S. Bradley Road, Suite221 Santa Maria, CA 93455 1000 S. Hill Road, Suite 116 Ventura, CA 93003	 (805) 937-7246 (805) 654-4761 (805) 654-4765 (fax)
	Governor’s Office Arnold Schwarrzenegger State Office Building Sacramento, CA 95814 LEPC (Emergency Planning) Region 1	 (916) 445-2841 (562) 795-2900 (562) 795-2877 (fax)
	Regional Water Quality Control Board 895 Aerovista Place, Suite 101 San Luis Obispo, CA 93401	(805) 549-3147

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Table 2-19. Regulatory Agencies.

Jurisdiction	Agency	Telephone
	State Fire Marshall Pipeline Safety Division 3950 Paramount Blvd. Lakewood, CA 90712	(562) 497-9100
	State Lands Commission Minerals Resource Management ARCO Towers 200 Oceangate, 12th Floor Long Beach, CA 90802-4471 7394 Calle Real, Suite C & D P.O. Box 1237 Goleta, CA 93117 Marine Facilities Inspection and Management ARCO Towers 200 Oceangate, Suite 900 Long Beach, CA 90802	 (562) 590-5201 (24-hour) (805) 685-8502 (562) 499-6348
	University of California at Santa Barbara Henry Yang Chancellor's Office 5221 Cheadle Hall Santa Barbara, CA 93106	(805) 893-2231
	State Parks Channel Coast District 1933 Cliff Drive Santa Barbara, CA 93109 Central Dispatch for all State Parks - SURCOM	(805) 968-1033 (951) 443-2964 or 911 and have Sheriff contact (emergencies)
County	**Santa Barbara County** Emergency Center Fire / Sheriff 4410 Cathedral Oaks Rd. Santa Barbara, CA 93111	 911 (805) 683-2724 (on cellular and/or for admin. Reporting)
	Santa Barbara County Office of Emergency Management (OEM)	(805) 681-5526
	Santa Barbara County APCD	(805) 961-8800
	Santa Barbara County Energy Division 30 E. Figueroa St., 2nd Floor Santa Barbara, CA 93101	(805) 886-7165
	Ventura County APCD	(805) 654-2797
	Ventura County Environmental Health	(805) 654-2813
	Ventura County Fire	(805) 389-9710
	Ventura County Sheriff 800 S. Victoria Ventura, CA 93009	(805) 654-2311
City	**Carpinteria** City Hall	(805) 684-5405

Table 2-19. Regulatory Agencies.

Jurisdiction	Agency	Telephone
	Carpinteria Fire Department	(805) 684-4591
	Carpinteria /Summerland Police Department	(805) 684-4561
	City of Goleta - Mayor	(805) 961-7500
	City of Goleta – City Manager	(805) 708-0045 (cell)
	City of Goleta – Planning and Environmental Services Director	(805) 415-5812 (cell)
	City of Goleta – Redevelopment, Neighborhood Services and Public Safety Director	(805) 896-5394 (cell)
	City of Santa Barbara - Mayor	(805)564-5321
Harbor	**Santa Barbara Harbor Master** **Channel Islands – Harbor Patrol**	(805) 564-5531 (805) 385-6693

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Table 2-20. Emergency Services.

Location	Hospital	Telephone
Goleta	Goleta Valley Cottage Hospital 351 S. Patterson Avenue Santa Barbara, CA 93111	(805) 967-3411 (Medivac Helo Pad)
Goleta	Sansum - Santa Barbara Medical Foundation 122 South Patterson Avenue Santa Barbara, CA 93111	(805) 681-1777
Santa Barbara	Santa Barbara Cottage Hospital Pueblo at Bath Santa Barbara, CA 93105	(805) 682-7111
Carpinteria	Sansum - Santa Barbara Medical Foundation 4806 Carpinteria Avenue Carpinteria, CA 93013	(805) 566-5000
Ventura	Community Memorial Hospital 147 N. Brent Ventura, CA 93003	(805) 652-5011
Oxnard	St. John's Regional Medical Center 1600 N. Rose Avenue Oxnard, CA 93033	(805) 988-2500
Sherman Oaks	Sherman Oaks Burn Center 4929 Van Nuys Blvd. Sherman Oaks, CA	(818) 981-7111

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Table 2-21. Waste Management Services.

Service	Company	Telephone
Disposal (Class I)	Chemical Waste Management Kettleman Hills Facility 35251 Old Skyline Blvd. Kettleman City, CA 93727	(800) 222-2964
Disposal ((Class I / II)	Clean Harbors 2500 W. Lokern Buttonwillow, CA Clean Harbors (Service Center) 5756 Alba Street Los Angeles, CA 90058	(800) 544-7199 (323) 277-2500 (800) 343-4244 (emergency service)
Disposal (Class III)	Ventura Regional Sanitation Dist.[1] Toland Road Sanitary Landfill 3500 N. Toland Road Santa Paula, CA	(805) 525-8217
Lab	BC Laboratories 4100 Atlas Court Bakersfield, CA 93308	(661) 327-4911 (661) 327- 1918 (fax)
Recycling (batteries)[2]	Kinsbursky Bros. Inc. 1314 N. Lemon Street Anaheim, CA 92801	(714) 738-8516
Storage/Transport	Ecology Control Industries (formerly IT Corp.) 20846 Normandie Avenue Torrance, CA 90402	(310) 320-2555 (24-hour)
Storage/Transport	OST Trucking 2951 N. Ventura Avenue Ventura, CA 93002	(805) 643-9963
Storage Tank	Baker Tank	(805) 525-1710
Storage/Transport	Marborg Industries 136 N. Quarantina Santa Barbara, CA 93103	(805) 963-1852
Vacuum Trucks	Gallighen Inc. Speed's Oil Tool Ecology Control	(805) 648-2413 (805) 925-1369 (805) 648-5123

[1] Able to accept non-hazardous oilfield wastes, wastewater, and tank bottoms.

[2] Hazardous wastes sent to a recycling facility must be accompanied by a hazardous waste manifest. In most cases, a waste sample must be sent to the recycler for analysis prior to shipment.

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Table 2-22. Outside Services and Resources.

Service	Company	Telephone
Absorbent	Cleveland Cotton	(805) 321-1050
Air Transport (Emergency)	Aspen Helicopters Inc. 2899 W. 5th Street Oxnard, CA	(805) 985-5416
Air Transport (Emergency)	Petroleum Helicopters 302 Moffat Place Goleta, CA 93117	(805) 964-0684
Ambulance	American Medical Response Buellton, CA	(805) 688-6550
Auto Rental	Avis Rent A Car	(800) 831-2847
Auto Rental	Dollar	(800) 800-4000
Auto Rental	Enterprise Rent A Car	(800) 736-8222
Auto Rental	Hertz Rent A Car	(800) 654-3131
Bus Charter	Melni Bus Service, Inc. 622 Anacapa Santa Barbara, CA 93101	(805) 963-2084
Chemicals	Chemtrec	(800) 424-9300
Consultants: Air / Environmental / Safety	Reese-Chambers Systems P.O. Box 8 Somis, CA 93066	(805) 386-4343 (805) 386-4388 (fax)
Consultants: Environmental	Goldberg Environmental Services 2922 Paseo Tranquillo Santa Barbara, CA 93105	(805) 687-6046 sparkink@verizon.net
Corexit EC9527A, EC9500A	Nalco 7701 Highway 90A Sugar Land, TX 77478	(281) 263-7000
Equipment Rental	United Rentals 3665 Market St. Ventura, CA	(800) 877-3687 (805) 644-7310
Equipment Rental	Bud's Equipment Rental (heavy equipment)	(805) 684-4173
Equipment Rental	Carpinteria Valley Lumber	(805) 684-2183
Excelsior	Republic Supply Co.	(805) 643-6158
Media: Newspapers	Santa Barbara News-Press	(805) 564-5200
Media: Newspapers	Ventura County Star	(805) 650-2900
Media: Radio	KCAQ	(805) 289-1400
Media: Radio	KSPE	(805) 965-1490
Media: Radio	KVEN	(805) 642-8595
Media: Radio	KZBN 1290	(805) 568-1444
Media: Television	KEYT	(805) 882-3933
Media: Television	KABC	(323) 644-7777
Media: Television	KSBY	(805) 963-7883
Motel	Holiday Inn 450 E. Harbor Blvd. Ventura, Ca	(805) 648-7731

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Table 2-22. Outside Services and Resources.

Service	Company	Telephone
Motel	Seaward Inn 2094 E. Harbor Blvd. Ventura, CA	(805) 653-5000
Motel	Best Western Carpinteria Inn 4558 Carpinteria Avenue Carpinteria, CA	(805) 684-0473
Motel	Best Western Pepper Tree Inn 3850 State Street Santa Barbara, CA	(805) 687-5511
Operations	California Conservation Corps. 1719 24th Street Sacramento, CA Contact: Lin McNamara Can provide up to 200 workers	(916) 341-3160 (statewide, 24-hour emergency dispatch)
Operations	A.J. Diani Construction 295 N. Blosser Road Santa Maria, CA 93454	(805) 925-9533
Portable Pumps	Bud's Rental	(805) 684-4173
Portable Toilets	Fence Factory Rentals	(888) 713-3623
Portable Toilets	JW Enterprises 1689 Morse Avenue Ventura, CA 93001	(800) 350-3331
Security	Bomar Security Santa Barbara	(805) 683-4898
Security	Securitas Security 5276 Hollister Ave. Goleta, CA 93117	(805) 485-0528
Trailer Rental	GE Capital Modular Space 1444 S. Willow Avenue Rialto, Ca	(800) 523-7918
Trailer Rental	William Scotsman Mobile Offices	(800) 782-1500
Truck Rental	Ryder	(800) 467-9337
Truck Rental	U Haul Carpinteria Santa Barbara	 (805) 684-9661 (805) 965-2600
Wildlife Care	California Oiled Wildlife Care Network Greg Massey	(530) 752-4167 (916) 556-7509 (pager) (530) 752-1218 (office) if no response, call OSPR dispatch (916) 445-0045

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2.6 EVACUATION PLAN

2.6.1 Introduction

Two forms of emergency evacuation that may be applicable to a Venoco facility are:

- **Immediate Evacuation**. Involves little or no warning and requires all personnel to vacate an area or the facility as quickly as possible to escape dangers associated with the emergency.
- **Staged Evacuation**. Involves anticipated circumstances that may pose a risk to facility personnel. Examples of this type of evacuation include forecasted very severe weather, an approaching toxic vapor cloud, bomb threat, fire, etc. Such incidents often permit early evacuation of nonessential personnel by routine transportation means.

Each incident will require individual assessment and evaluation, and the use of common sense.

2.6.2 Steps In The Evacuation Process

2.6.2.1 Determine The Need For Evacuation

The Ellwood Supervisor is responsible for the decision to evacuate and its implementation. In his absence, the Person-In-Charge will assume this responsibility. The decision to evacuate is always a difficult one. The Ellwood Supervisor or his alternate must weigh the dangers of remaining at/on a facility against the dangers inherent with evacuation procedures, particularly in the case of unanticipated events. Each incident will require individual assessment and evaluation, and the use of common sense. The Ellwood Supervisor or his alternate will determine if the potential of the situation is:

- Beyond control/ cannot be stabilized/contained/returned to normal.
- Likely to worsen or deteriorate.
- Such that the outcome/consequences of the event is predictable/known.
- Such that there is a current danger to health, safety and welfare of personnel and/or the public.
- Such that the conditions for evacuation are acceptable and do not pose hazards or risk to health, safety, or welfare of personnel.

The Ellwood Supervisor will always err on the side of conservatism. The decision process will take into consideration the following actions:

- The safety of the facility's personnel is of primary importance and must be ensured. All other factors are secondary.
- If possible, operations should be secured. This action may prevent or lessen the hazards to evacuating personnel but should not put personnel securing the facility at increased risks.
- Non-essential personnel should be evacuated if anticipated events could result in a deterioration of conditions.

In the event of a gas release containing H_2S, the following describes the evacuation of personnel at the Ellwood onshore facilities:

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- All non-essential personnel will evacuate to a “Safe Briefing Area” upon notification of any gas release detected with H_2S concentrations at or above 10 ppm.
- Essential personnel (emergency response team members) will evacuate to a safe location as dictated by the Incident Commander based on the conditions of the event and the considerations described above.

In the event of a gas release containing H_2S, the following describes the evacuation of personnel at the Ellwood offshore facilities:

- All non-essential personnel will evacuate to a “Safe Briefing Area” upon notification of any gas release detected with H_2S concentration at or above 20 ppm.
- All non-essential personnel will prepare to evacuate the platform upon notification of any gas release detected with an H_2S concentration at or above 50 ppm.

2.6.2.2 Determine The Method Of Evacuation

The method of evacuation will depend on the nature and location of the emergency incident. The Ellwood Supervisor may rely on existing resources at the affected facility or call for assistance from outside resources.

An evacuation at Platform Holly may require the use of one or a combination of the following transport methods:

- The life raft on the platform.
- The Boston Whaler on the platform.
- The crewboat under contract with Venoco.
- Marine vessel(s) of opportunity.

In the worst case, none of the above methods of transportation may be initially feasible and an overboard evacuation may be necessary. Personnel will be required to evacuate the platform and swim to the nearest flotation device or life raft that is to be thrown overboard prior to evacuation. Personnel should notify others, if possible, prior to going overboard. Personnel will be instructed to hail rescue vessels when possible.

An evacuation at Ellwood Onshore Facility, Ellwood Marine Terminal, Ellwood Pier, or Beachfront Lease may require one or a combination of the following transportation methods:

- Personal and/or company vehicles.
- Contract transportation service.

In the worst case, personnel may be required to evacuate and proceed on foot to a "safe haven"; that is, a safe refuge or an area outside of the hazard zone, where they will later be picked up by company vehicles or a charter service. The location of the safe haven is incident-specific and will be determined prior to evacuation by the Ellwood Supervisor. Potential "safe havens" for four key wind directions, including the prevailing southwesterly winds, are identified in Attachment 2-1 at the end of this section.

2.6.2.3 Sound The Alarm And Make The Announcement

Upon making the decision to evacuate Platform Holly or Ellwood Onshore Facility, the Ellwood Supervisor or his alternate will sound the alarm (i.e. siren) and announce the evacuation on the public address system. The

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announcement will be repeated several times, each time with the statement "This is not a drill." The announcement will include information on:

- The upset condition (e.g., there is a fire in the area of the heater treaters).
- The location of the Safe Briefing Area (e.g., proceed to the front gate or rear gate).
- Special precautions (e.g., do not drive a vehicle).

Predetermined Safe Briefing Areas on the platform are the production office or conference room, provided that H_2S is monitored inside the office/room and is determined to be less than 10 ppm. At Ellwood Onshore Facility, the front gate or back gate serve as the Safe Briefing Areas. Depending on the incident, these areas may not be safe and another location may need to be substituted.

In the event of a required evacuation at Ellwood Marine Terminal, Ellwood Pier, or Beachfront Lease (these facilities are partially manned), the Ellwood Supervisor/Operator-In-Charge will announce the evacuation and provide the necessary information to personnel.

2.6.2.4 Make The Required Notifications

Notification procedures must be carried out to ensure that necessary resources are dispatched to assist. Notification procedures, including notifications required in the event of offsite consequences are described in Section 2.2 (specifically Table 2-2E) of this plan.

2.6.2.5 Secure Operations

When necessary and if possible, all operations will be secured and shut down to prevent the deterioration of conditions that might endanger the safety of personnel and the public.

2.6.2.6 Assemble And Account For Personnel

In the event of an evacuation announcement, all personnel will proceed to the designated Safe Briefing Area. A roll call/head count will be taken by the Ellwood Supervisor or his designate and the information will be relayed back to the Control Room/Production Office where this information will be checked against the log entries and roster of scheduled personnel. If personnel are missing, the Ellwood Supervisor/Person-In-Charge or his alternate may organize a search and rescue mission if it can be accomplished safely and if the delay in evacuation does not endanger other personnel.

2.6.2.7 Direct The Evacuation

Once personnel are accounted for, the evacuation will proceed under the direction of the Ellwood Supervisor/Person-In-Charge or his alternate. The Ellwood Supervisor/Person-In-Charge or his alternate will review the evacuation plan, including any safety precautions, and by what means and to where they will reassemble.

2.6.2.8 Evacuation Of Injured Personnel

Onsite personnel who are tending to injured persons are required to ensure that those injured persons are safely evacuated to a shelter or assembly area. For locations and phone numbers for area hospitals, refer to Table 2-20 of this plan.

2.6.2.9 Evacuation Checklists And Procedures

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Evacuation checklists and procedures are provided in the following tables:

- Table 2-23 Evacuation Checklist for Ellwood Marine Terminal/Ellwood Pier/Beachfront Lease.
- Table 2-24 Evacuation Checklist for Platform Holly.
- Table 2-25 Boston Whaler/Life Raft Evacuation Procedures.
- Table 2-26 Attending Vessel Evacuation Procedures.
- Table 2-27 Overboard Evacuation Procedures.
- Table 2-28 Evacuation Checklist for Ellwood Onshore Facility.
- Table 2-29 Evacuation Checklist for the Public.

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Table 2-23. Evacuation Checklist For Ellwood Marine Terminal / Ellwood Pier / Beachfront Lease.

Actions To Be Taken	Complete (Time/Initial)
Assess situation/take command. If barge is present, keep Captain informed of situation.	
Shut off source of supply/"ESD" if necessary.	
Determine the need for evacuation.	
Determine the method of evacuation: • Personal and/or company vehicles • On foot	
Inform all personnel onsite of: • The need to evacuate • The evacuation route • Where to assemble • Special precautions	
As soon as possible, the Ellwood Supervisor/Operator-In-Charge should make the necessary initial notifications (see Table 2-2E) and mobilize outside resources if necessary.	
If offsite effects, be sure to notify as necessary Sandpiper Golf Course, Bacara Resort, CHP (for Highway 101), and Union Pacific RR (see Section 2.5 for telephone numbers). In the event of a catastrophic release, activation of the community siren may be warranted.	
Assemble and account for personnel at front or back gate.	
If person missing/down, search and/or rescue (if safe to do so). Appropriate PPE must be worn.	
Secure operations. Eliminate all ignition sources onsite.	
Direct evacuation.	
Refer to other checklists as necessary.	

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Table 2-24. Evacuation Checklist For Platform Holly.

Actions To Be Taken	Complete (Time/Initial)
Assess situation/take command.	
Shut off source of supply/"ESD" if necessary.	
Determine the need for evacuation (Immediate / Staged).	
Determine the method of evacuation: • Life raft / Boston Whaler • Attending vessel (crewboat / vessel-of-opportunity) • Overboard evacuation **Note**: Refer to other checklists (Tables 2-25 through 2-27) for evacuation procedures.	
Sound alarm and make announcement on: • The nature of the incident • Location of the safe briefing area • Required PPE • Special precautions	
Make necessary notifications (see Table 2-2E). Mobilize outside resources if necessary.	
Assemble and account for personnel.	
If person missing/down, search and/or rescue (if safe to do so). Appropriate PPE must be worn.	
Secure operations. Eliminate all ignition sources onsite.	
Direct evacuation.	
Refer to other checklists as necessary.	

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Table 2-25. Boston Whaler / Life Raft Evacuation Procedures.

Evacuation Procedures
1. Proceed to the boat/raft with SCBA if required. If the area of the boat/raft monitors greater than 20 ppm H_2S upon entry, an SCBA must be worn until the monitor indicates that the atmosphere is clear. All visitors and non-essential personnel should be evacuated into the boat/raft first. The Ellwood Supervisor/Operator-In-Charge should be the last person to evacuate and must ensure that the platform ESD has been activated before departure.
2. Ensure all personnel don a personal flotation device prior to entering the boat/raft.
3. Ensure the weight of personnel is evenly distributed in the boat/raft.
4. The Ellwood Supervisor/Operator-In-Charge should account for all persons being evacuated. If person(s) missing, the Ellwood Supervisor/Operator-In-Charge will organize a search if safe to do so.
5. Once all personnel are accounted for and loaded, or the decision to launch is made, secure the boat and proceed with launch of boat. Ensure portable radios are brought onboard, if possible. Steer boat/raft upwind of H_2S or toxic release (if applicable) and away from the platform.

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Table 2-26. Attending Vessel Evacuation Procedures.

Evacuation Procedures
1. Proceed to the boat with SCBA donned (if required) when directed by Ellwood Supervisor / Operator-In-Charge.
2. At boat landing, don personal flotation device. The Ellwood Supervisor / Operator-In-Charge will provide assistance in donning PFDs and ensure all personnel wear the device.
3. All non-essential personnel should be off-loaded first. The Ellwood Supervisor / Operator-In-Charge should be the last person to enter the vessel and must ensure that the platform ESD has been activated before departure.
4. Ensure the weight of personnel is evenly distributed in the capsule / boat.
5. The Ellwood Supervisor/Operator-In-Charge should account for all persons on the vessel. If person(s) missing, the Ellwood Supervisor/Operator-In-Charge will organize a search if safe to do so.
6. Once all personnel are accounted for and loaded, or the decision to launch is made, the Captain will be notified and advised to steer the vessel upwind of (if applicable) and away from the platform. Continue to breathe from SCBA until the atmosphere is less than 20 ppm H_2S or instructed to do otherwise by the Ellwood Supervisor/Operator-In-Charge.

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Table 2-27. Overboard Evacuation Procedures.

Evacuation Procedures
1. Evacuate overboard only if there are hazards present that prevent movement to the capsule or boat landing once the order to evacuate has been given. Notify personnel in the Safe Briefing Area or others of your decision to go overboard if possible.
2. Loosen shoelaces and clothing. Get rid of excess weight.
3. Obtain a personal flotation device or activate life raft by removing from case and throwing it overboard, ensuring that the inflation cord is triggered.
4. Lower self into water using escape ropes or jump feet first after ensuring that no objects on the water are in your path.
5. Swim to the nearest flotation device and move upwind (if applicable) and away from the platform.
6. Attempt to hail rescue vessels when possible.

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Table 2-28. Evacuation Checklist For Ellwood Onshore Facility.

Actions To Be Taken	Complete (Time/Initial)
Assess situation/take command.	
Shut off source of supply/"ESD" if necessary. If ESD, notify Platform Holly.	
Determine the need for evacuation (Immediate / Staged).	
Determine the method of evacuation: • Personal and/or company vehicles • Contract transportation service • On foot	
Sound alarm and make announcement on: • The nature of the incident • Location of safe briefing areas • Required PPE • Special precautions	
Make the necessary initial notifications (see Table 2-2E) and mobilize outside resources if necessary.	
If offsite effects, be sure to notify as necessary Sandpiper Golf Course, Bacara Resort, CHP (for Highway 101), and Union Pacific RR (see Section 2.5 for telephone numbers). In the event of a catastrophic release, activation of the community siren may be warranted.	
Assemble and account for personnel.	
If person missing/down, search and/or rescue (if safe to do so). Appropriate PPE must be worn.	
Secure operations. Eliminate all ignition sources onsite.	
Direct evacuation.	
Refer to other checklists as necessary.	

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Table 2-29. Evacuation Checklist For The Public.

Actions To Be Taken	Complete (Time/Initial)
Make necessary notifications (see Table 2-2E). The Santa Barbara County Sheriff is in charge of evacuation of the public.	
Mobilize outside resources if necessary.	
Provide assistance as necessary to the Santa Barbara County Sheriff.	

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ATTACHMENT 2-1

IDENTIFICATION OF SAFE HAVENS

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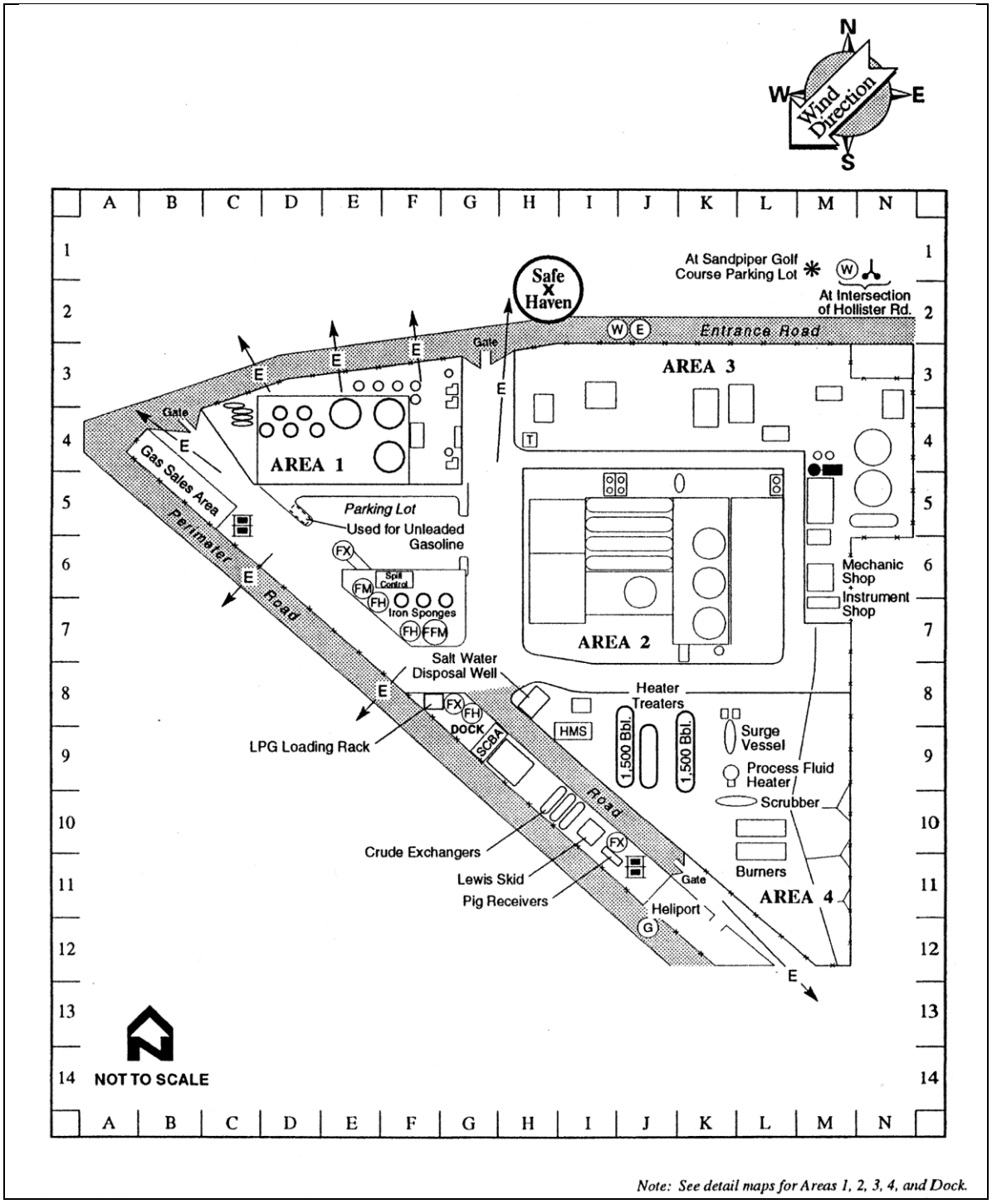

Safe Haven: Prevailing Wind From The Northeast

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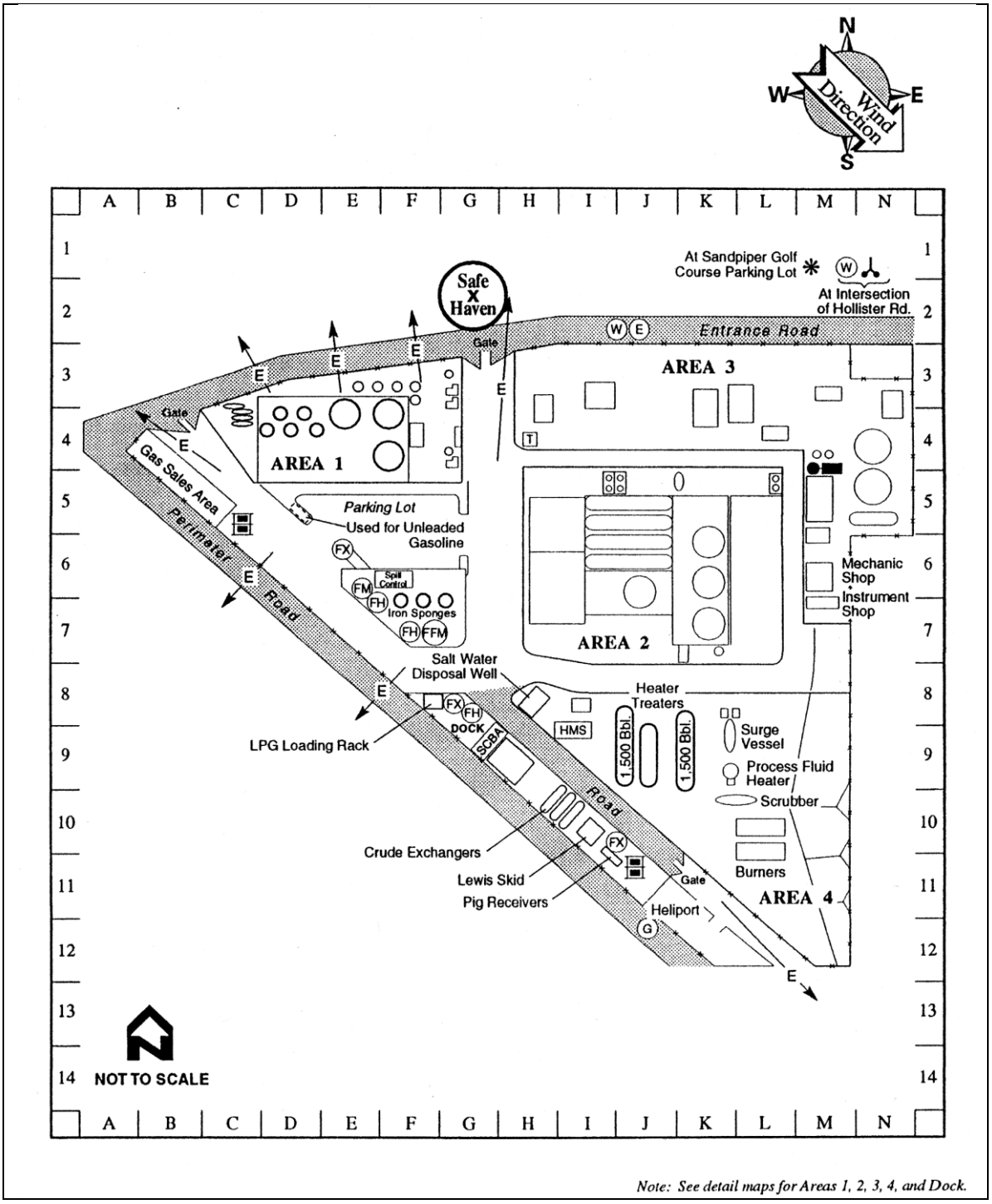

Safe Haven: Prevailing Wind From The Northwest

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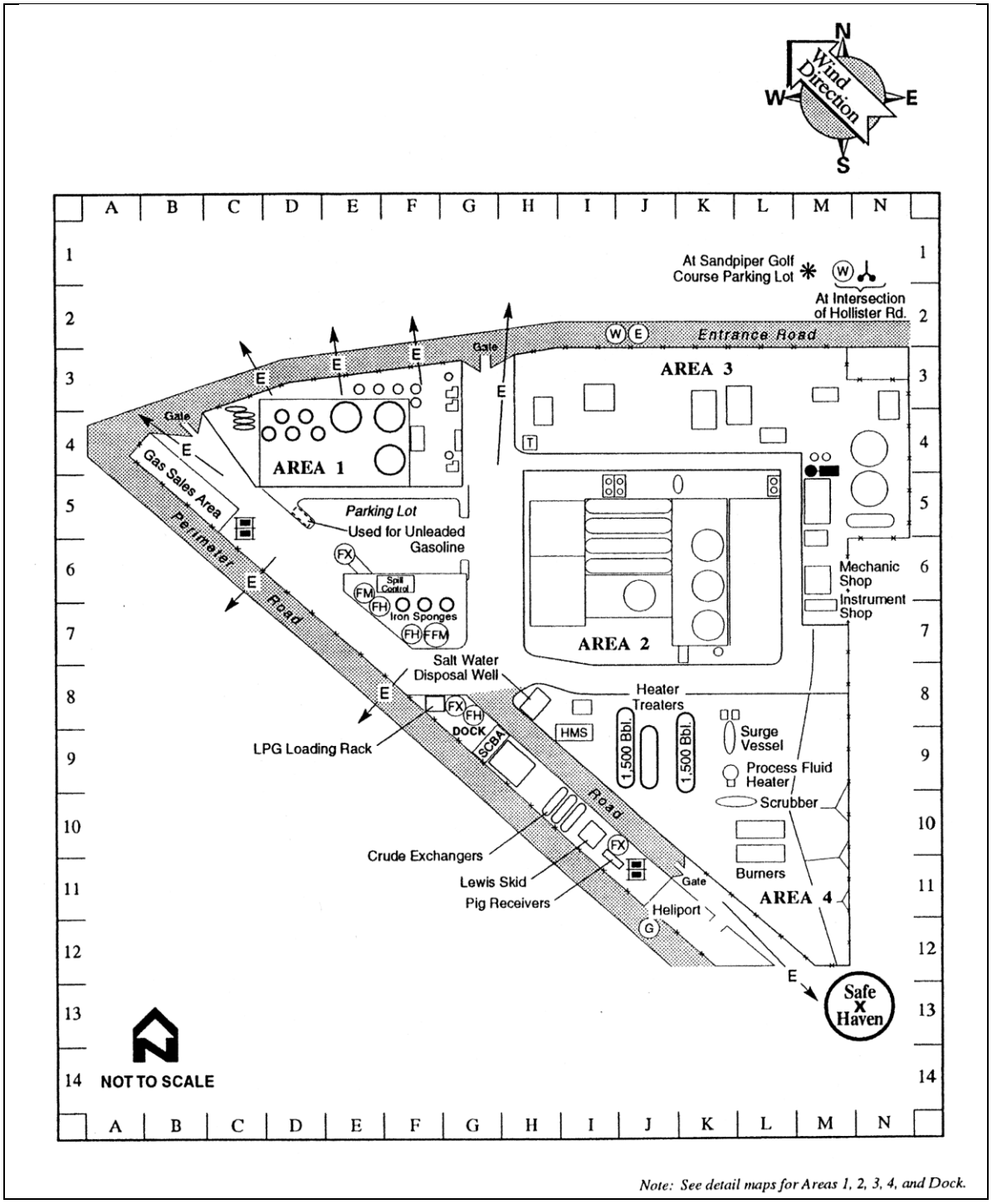

Safe Haven: Prevailing Wind From The Southeast

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A.1 INTRODUCTION

This Oil Spill Contingency Plan addresses the following facilities:

- Ellwood Marine Terminal
- Ellwood Onshore Facility
- Ellwood Onshore Oil Transfer Pipeline
- Ellwood Pier
- Platform Holly
- Beachfront Lease

The locations of these facilities are shown in Figure A-1. A vicinity map showing vehicular access routes and nearby residential, commercial, and public areas is provided in Figure A-2.

A.2 ELLWOOD MARINE TERMINAL

A.2.1 Overview

Ellwood Marine Terminal, a crude oil loading terminal and crude oil storage facility, is located adjacent to the Pacific Ocean, 0.75 miles northwest of Coal Oil Point, Santa Barbara County, California. The facility includes two 65,000-bbl crude oil storage tanks, pump house and associated equipment.

The Ellwood Marine Terminal is OUT OF SERVICE. The marine mooring has been removed and all crude has been removed from the offshore loading pipeline, tanks, and Line 96 between the Ellwood Onshore Facility and the Marine Terminal. All equipment is blinded, and isolated awaiting abandonment.

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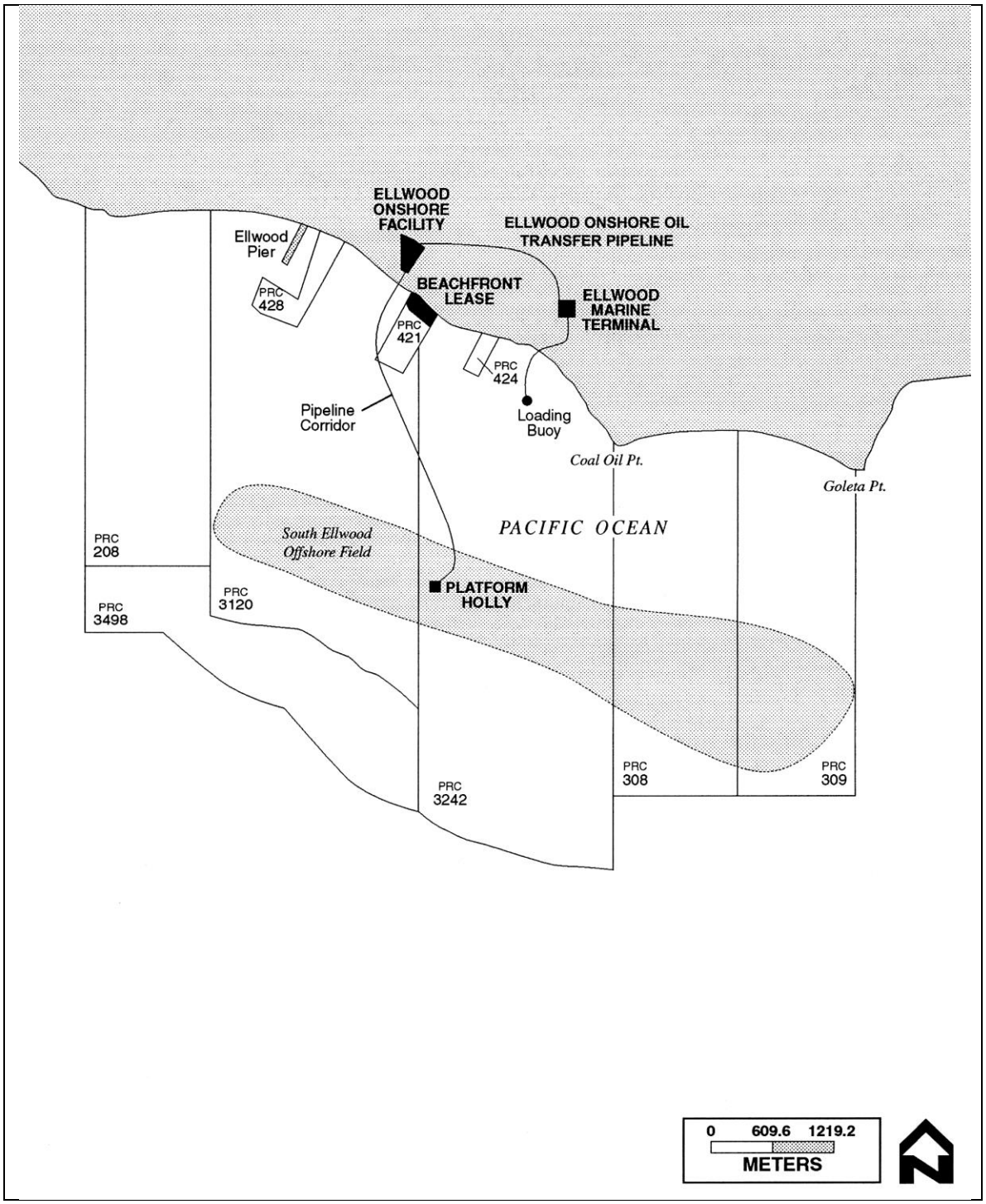

Figure A-1. South Ellwood Field

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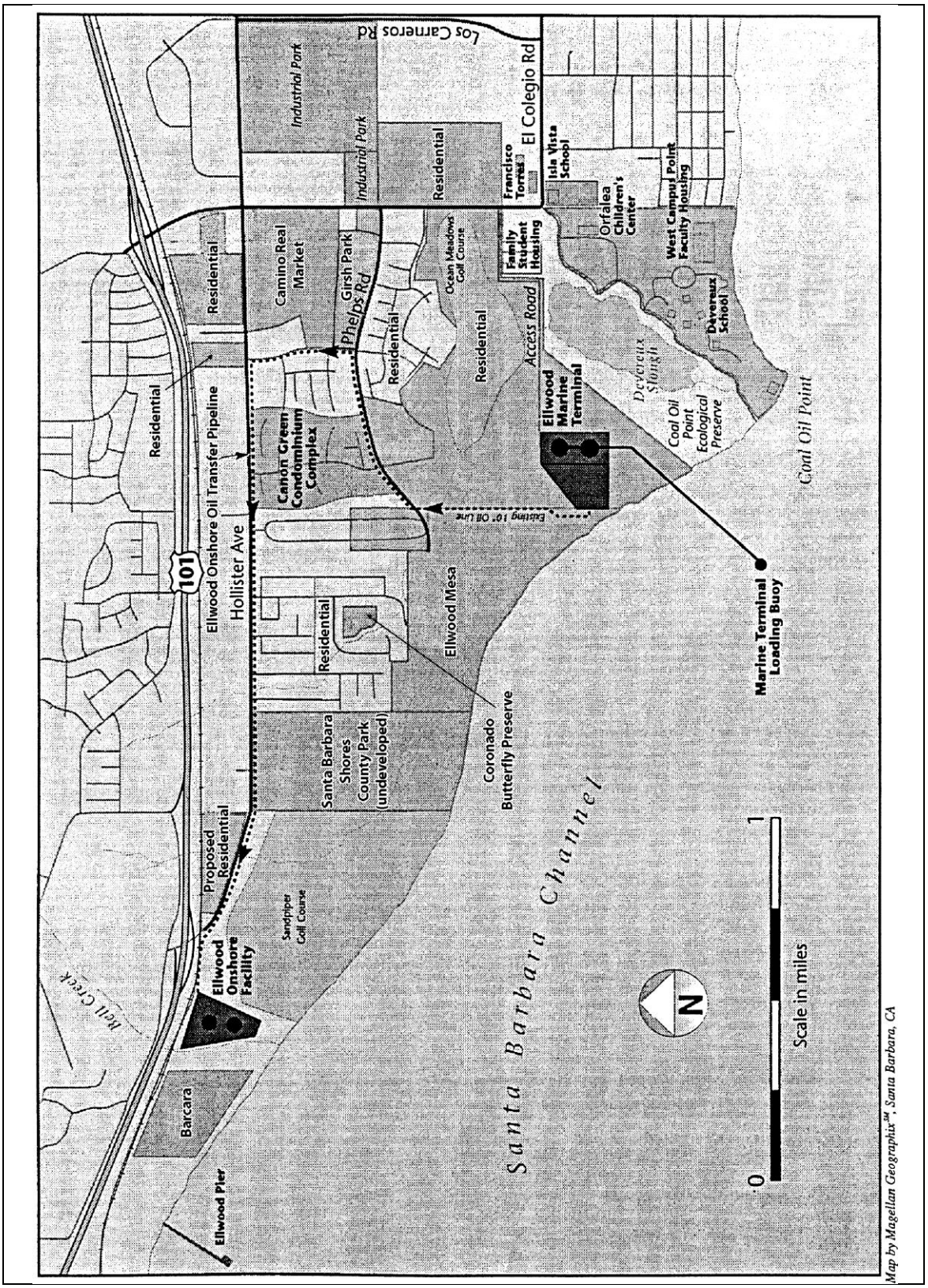

Figure A-2. Vicinity Map

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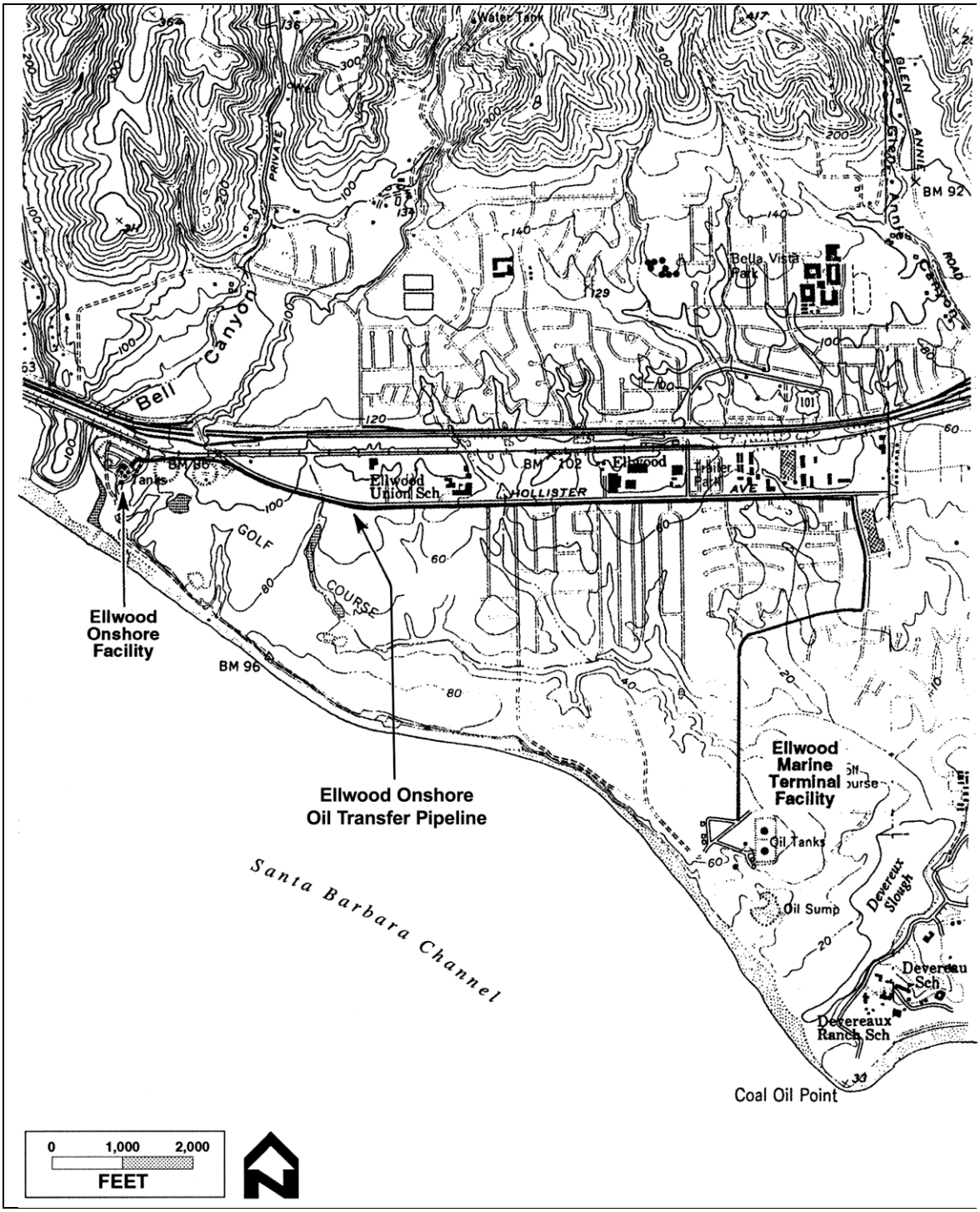

Figure A-3. Area Topography

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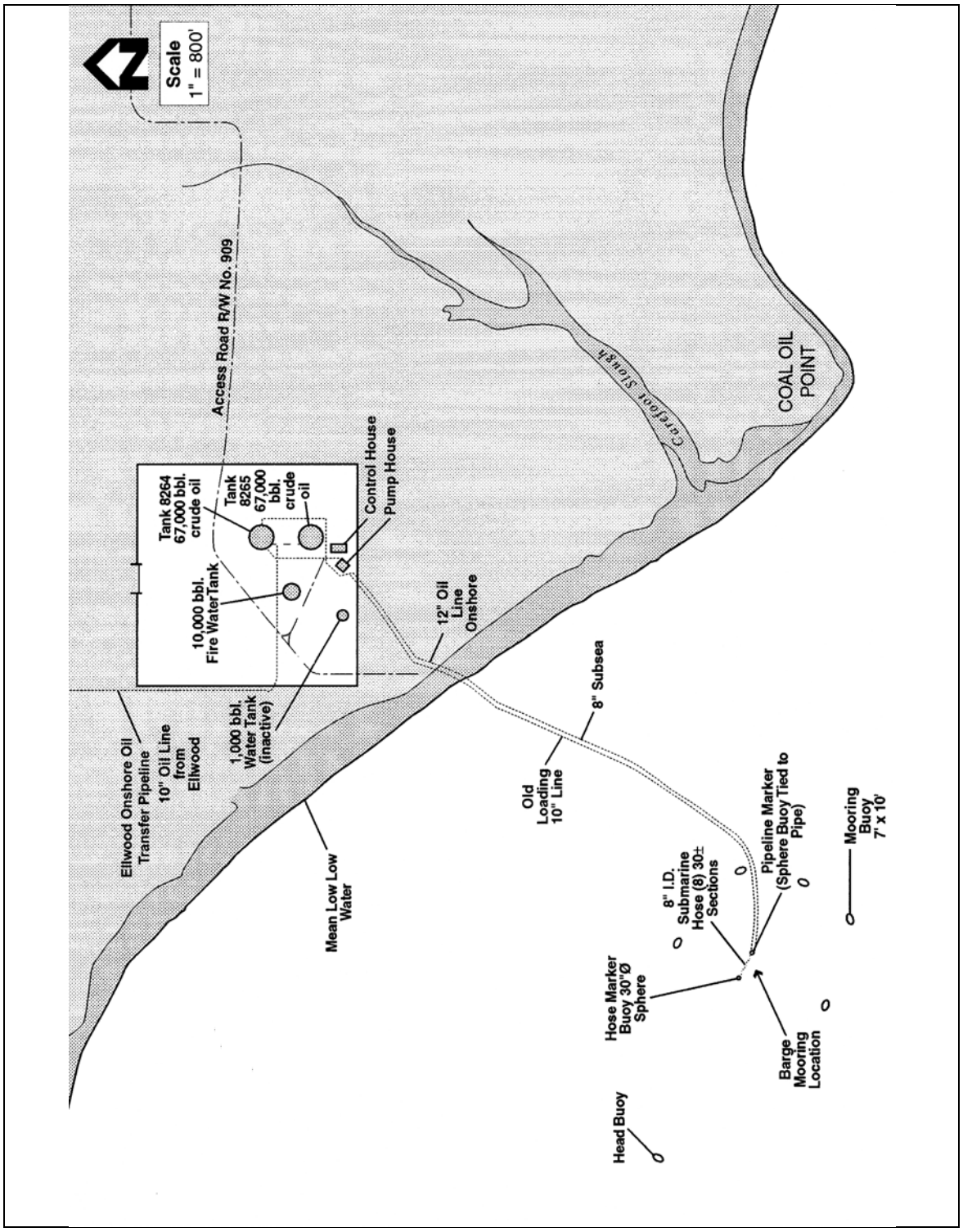

Figure A-4. Ellwood Marine Terminal and Mooring

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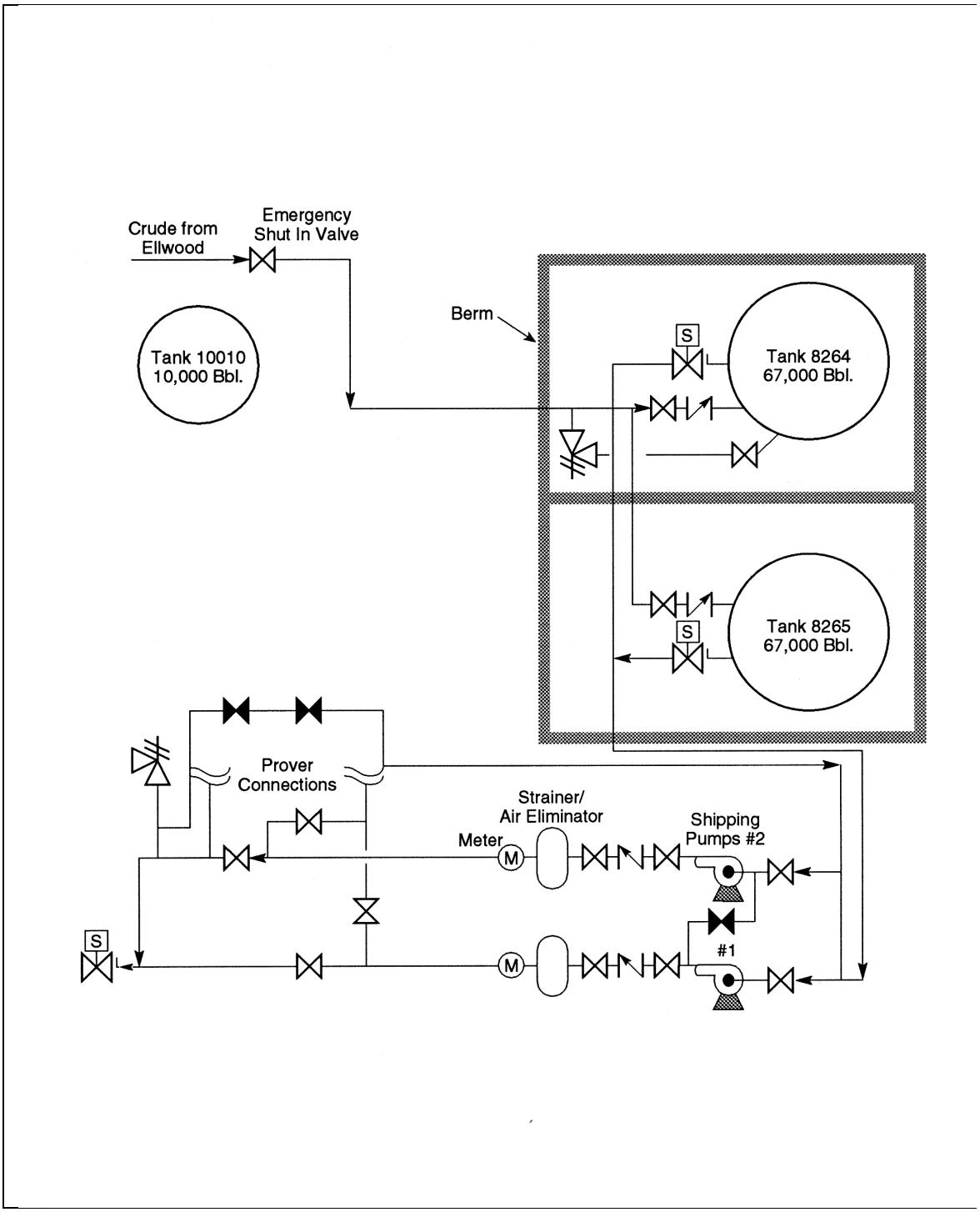

Figure A-5. Ellwood Marine Terminal Product Piping

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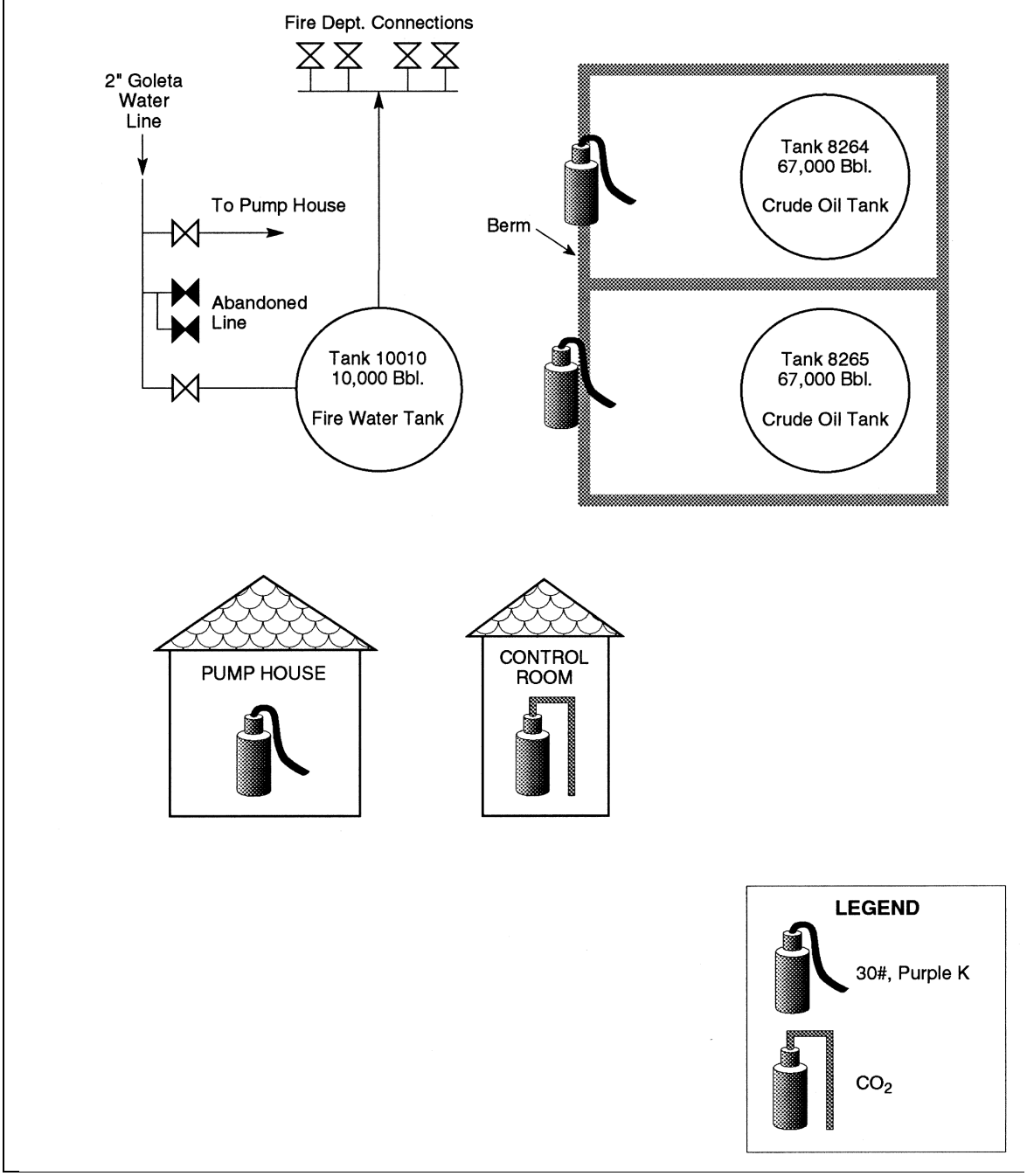

Figure A-6. Ellwood Marine Terminal Fire Protection

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A.3 ELLWOOD ONSHORE FACILITY

A.3.1 Overview

Ellwood Onshore Facility, an oil and gas processing facility, is located west of Goleta on the south side of the Union Pacific Railroad tracks and 1,600 feet southwest of the intersection of Highway 101 and Hollister Avenue. Sandpiper Golf Course is located to the east of the plant. The property is about 900 feet inland from the shore. The facility is permitted to produce 20,000 BPD of oil and 30 MMSCFD of sour gas. Current throughout is approximately 8,000 BPD of oil and 7 MMSCFD of sour gas.

The plant is manned 24 hours per day, seven days per week. The plant site is surrounded by an 8-feet high chain link fence with three access gates. Gates are kept locked and access is restricted into the plant. There is a minimum of four persons on duty at all times.

A.3.2 Site Description

Ellwood Onshore Facility, located west of the suburban community of Ellwood, is bounded by U.S. Highway 101 and Union Pacific Railroad to the north and the Sandpiper Golf Course to the east. Bell Canyon, which includes Bell Creek, is located along the property's western boundary. The Bacara Resort & Spa is west of Bell Creek. Bell Canyon originates at the confluence of Ellwood and Winchester Canyons and extends 1.1 miles to the ocean where a lagoon is located at the canyon mouth. Bell Creek has been channelized adjacent to the Ellwood site, and is about 100 to 150 feet wide. The banks of the channel are covered with a dense riparian growth of willows and other plants. Runoff in Bell Creek in the vicinity of Ellwood Onshore Facility is intermittent. The Bell Canyon watershed yields an estimated average runoff of 1,310 acre feet per year.

Groundwater resources are not used for Ellwood Onshore Facility operations. Although there are no wells on the facility other than a wastewater injection well, two water wells are located within a mile of the facility in the Bell Canyon watershed. Water quality measurements for Bell Canyon indicate high to very high salinity, and the water is not suitable for irrigation unless proper precautions are taken. The average annual recharge or aquifers to this area from rainwater is estimated to be 4.75 percent (County of Santa Barbara, 1979).

Several layers of sedimentary rocks underlie Ellwood Onshore Facility. Shale from the Monterey Formation of Miocene age forms the bedrock for the site. This bedrock is covered by marine terrace deposits and a thin layer of colluvium to the east of the site. At the site itself and to the west, the Monterey shale is capped with non-marine alluvial sand, silt, and gravel. This top layer is less than 45 feet thick. No faults are known to exist directly on the site. The More Ranch Fault crosses the shoreline about a quarter mile south of Ellwood Onshore Facility.

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A.3.3 Design And Operations

The plant includes the following major components:

- **Crude Oil Processing System**: Emulsion is preheated in emulsion/processed crude heat exchangers and an emulsion/ waste water heat exchanger. From the exchangers, the emulsion is introduced into one of three heater treaters, where the emulsion is chemically treated allowing water to settle.

  Dry crude from the heater treaters is stripped of hydrogen sulfide with sweet gas in the stripper columns. Dry, stripped crude proceeds to a surge tank for settling and interim storage. Dry crude from surge tank is pumped through heater exchangers to LACT surge tank and sold through a LACT unit.

- **Gas Sweetening System**: The system handles platform gas, LPG and NGL sales gas, and seep gas. Natural gas from the platform is filtered for removal of entrained liquids and sulfur is removed via the Lo-Cat unit. The sweetened gas is compressed, processed to remove carbon dioxide, and metered into the sales gas pipeline. The gas process produces natural gas liquids (NGLs), liquefied petroleum gas (LPGs), and sulfur, which are stored and transported to market by truck. Seep gas is also processed, compressed, and metered into the sales gas pipeline.

- **Producing Water Disposal System**: Water removed from oil emulsion in heater treaters is transferred to a settling tank where additional oil may break out. From settling tank, water is pumped down the onsite waste disposal well.

- **Vapor Recovery System**: The system collects vapors from various systems throughout the facility, compresses them to about 50 psig, and adds them to the sour gas at the inlet of the Lo-Cat unit in the gas sweetening system. The vapor recovery system consists of two skid-mounted vapor recovery units operating in series.

- **Process Drain System**: This system includes a hydrocarbon sump, crude oil sump and two sump pumps.

- **Relief system**: The relief system includes a fuel gas scrubber, three Hirt burners, and a flare scrubber. Relief gas from all pressure vessels are incinerated in the Hirt vent burner. Vapors derived from the gas sweetening and gas conditioning system are vented to the fuel gas scrubber.

Diagrams of the plant are provided in Figure A-7 through A-13. There are two spill response trailers at Ellwood Onshore Facility. Refer to Appendix F for the equipment list.

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A.4 ELLWOOD PIPELINE Inc. – Line 96

The EPI Line 96 is a 6 inch 8.5 mile long pipeline that runs from Ellwood Onshore Facility to the Plains All American L.P.(PAALP) pipeline (line 901) connection. . The pipeline runs in a northerly direction under the US Hwy 101 and then turns west and parallels the US 101 north until reaching the PAALP connection. Creek crossings along the pipeline route are shown in Figure A-14. Elevations and process flow diagrams are shown in Figure A-15 and A-16, respectively. Crude oil is transferred in 271 bph batch shipments approximately 4-6 times per day not to exceed 13,000 bpd. Specifics on the pipeline are provided in Appendix R and Appendix U of this document.

A.5 ELLWOOD PIER

The Ellwood Pier (see Figure A-17) is located approximately 3,000 feet east of Ellwood Onshore Facility. A crewboat loads bulk chemical and fuel liquids at the pier approximately once per week. There is a shelter with communications at the shore that is used by a security guard. The security guard communicates with persons at the front gate and on the pier via an intercom system. The guard controls access remotely onto the property via an electric gate and onto the pier via an arm-type gate. Water for fire protection is stored in a 500-bbl tank just uphill from the shelter.

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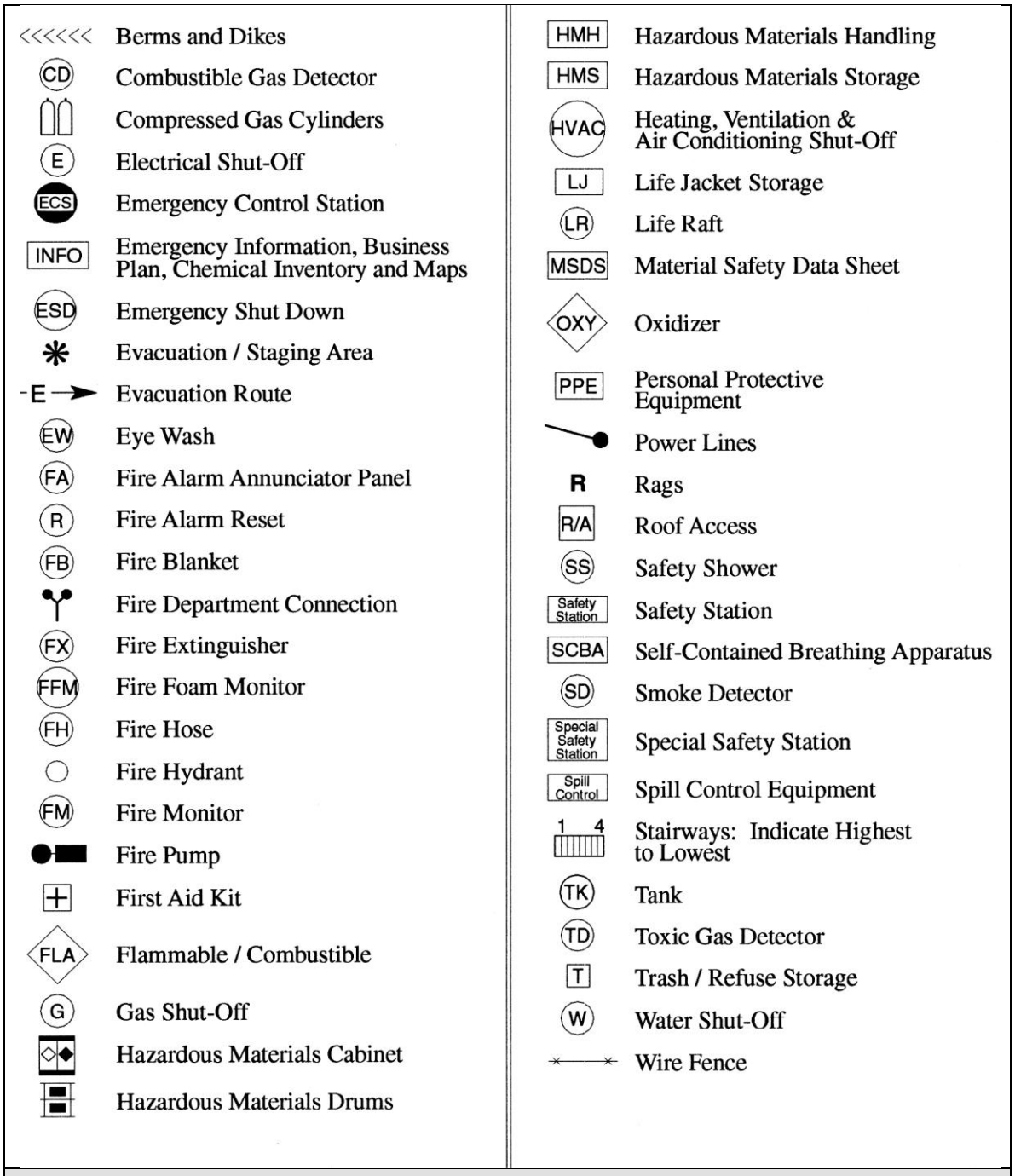

LEGEND FOR GRAPHICS A-7 THROUGH A-13 AND A-18 THROUGH A-20

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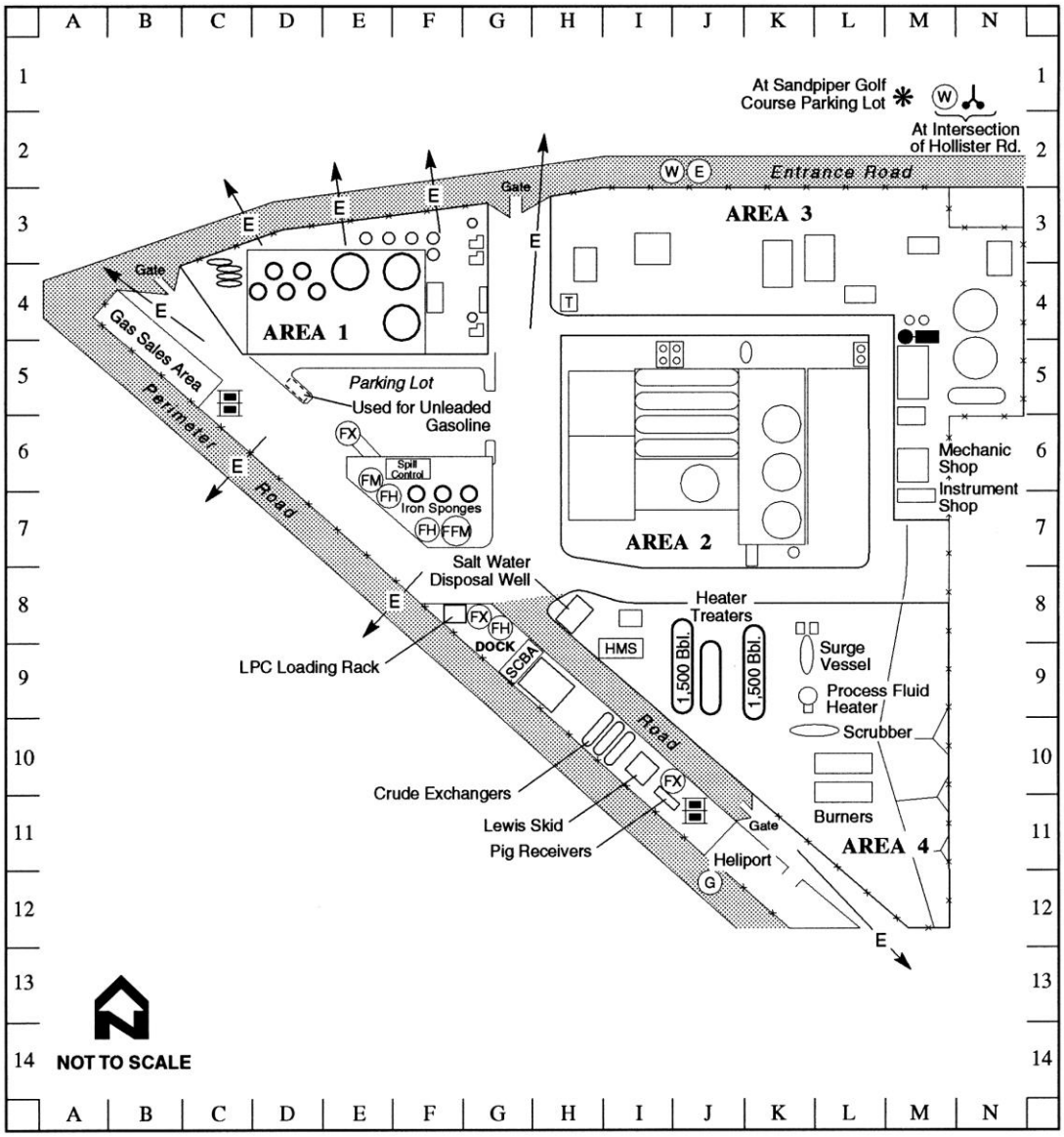

Note: See detail maps for Areas 1, 2, 3, 4, and Dock.

Figure A-7. Ellwood Onshore Facility Site Plan

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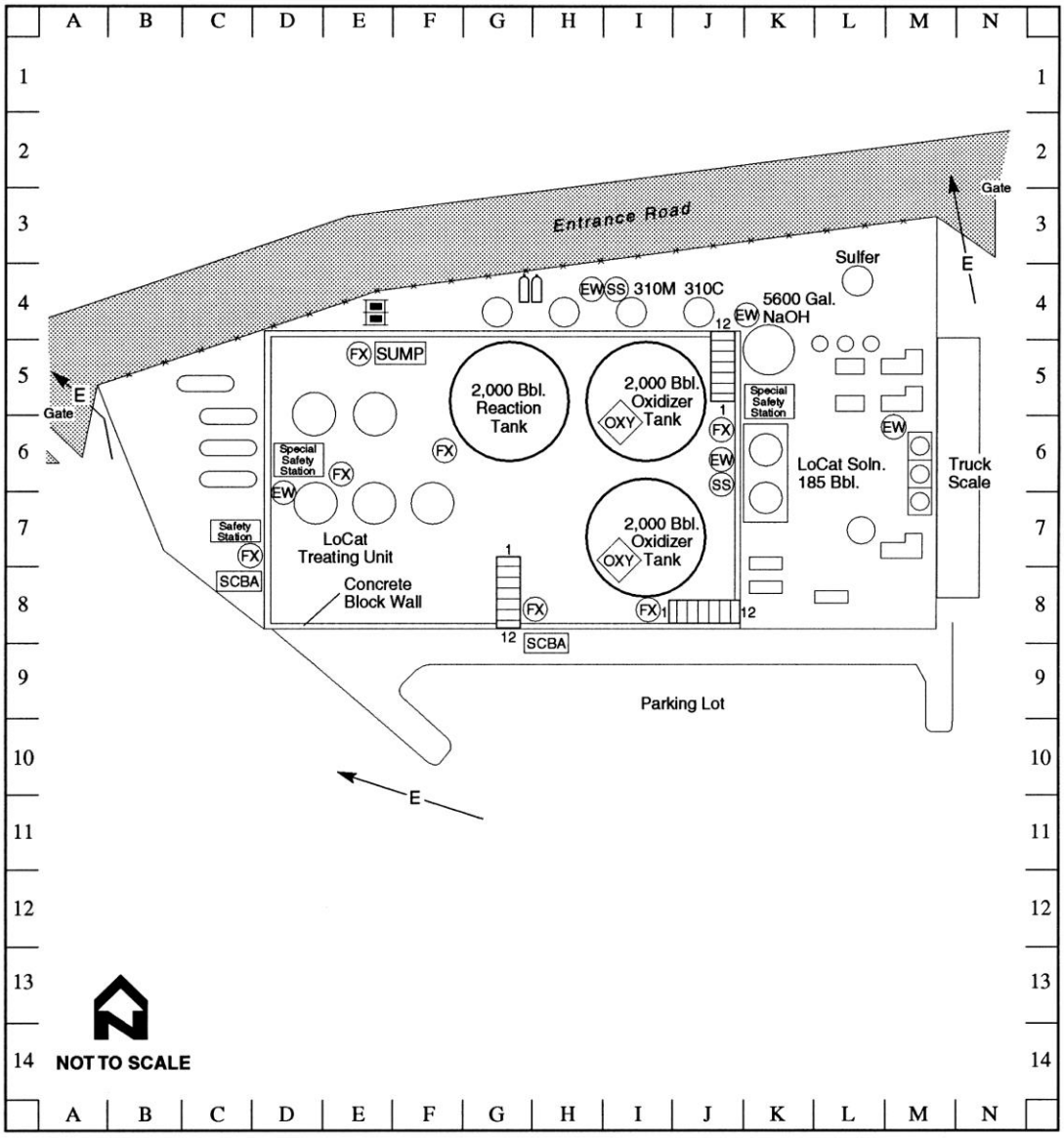

Figure A-8. Ellwood Onshore Facility Area 1

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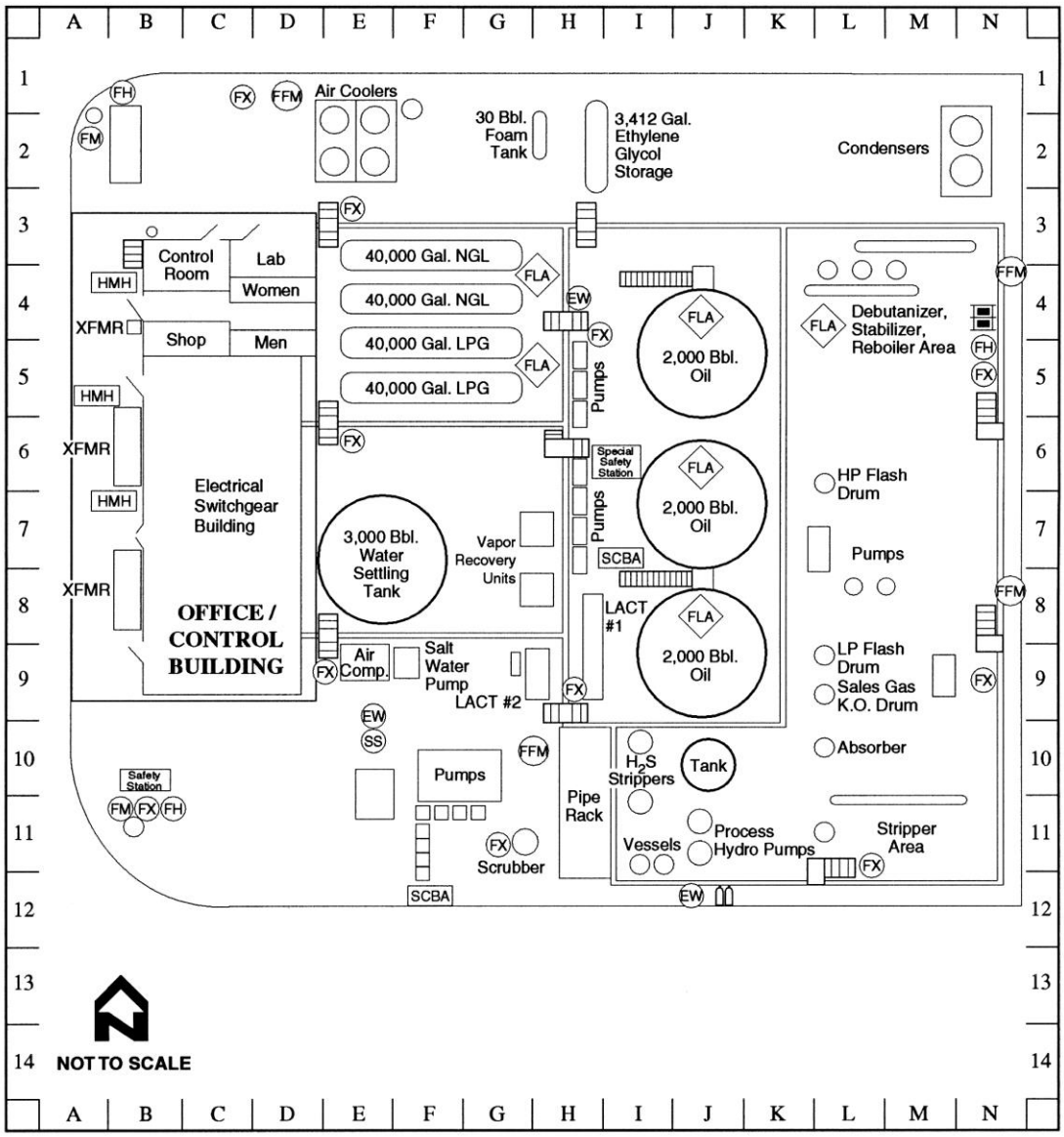

Note: See detail map for Office/Control Building

Figure A-9. Ellwood Onshore Facility Area 2

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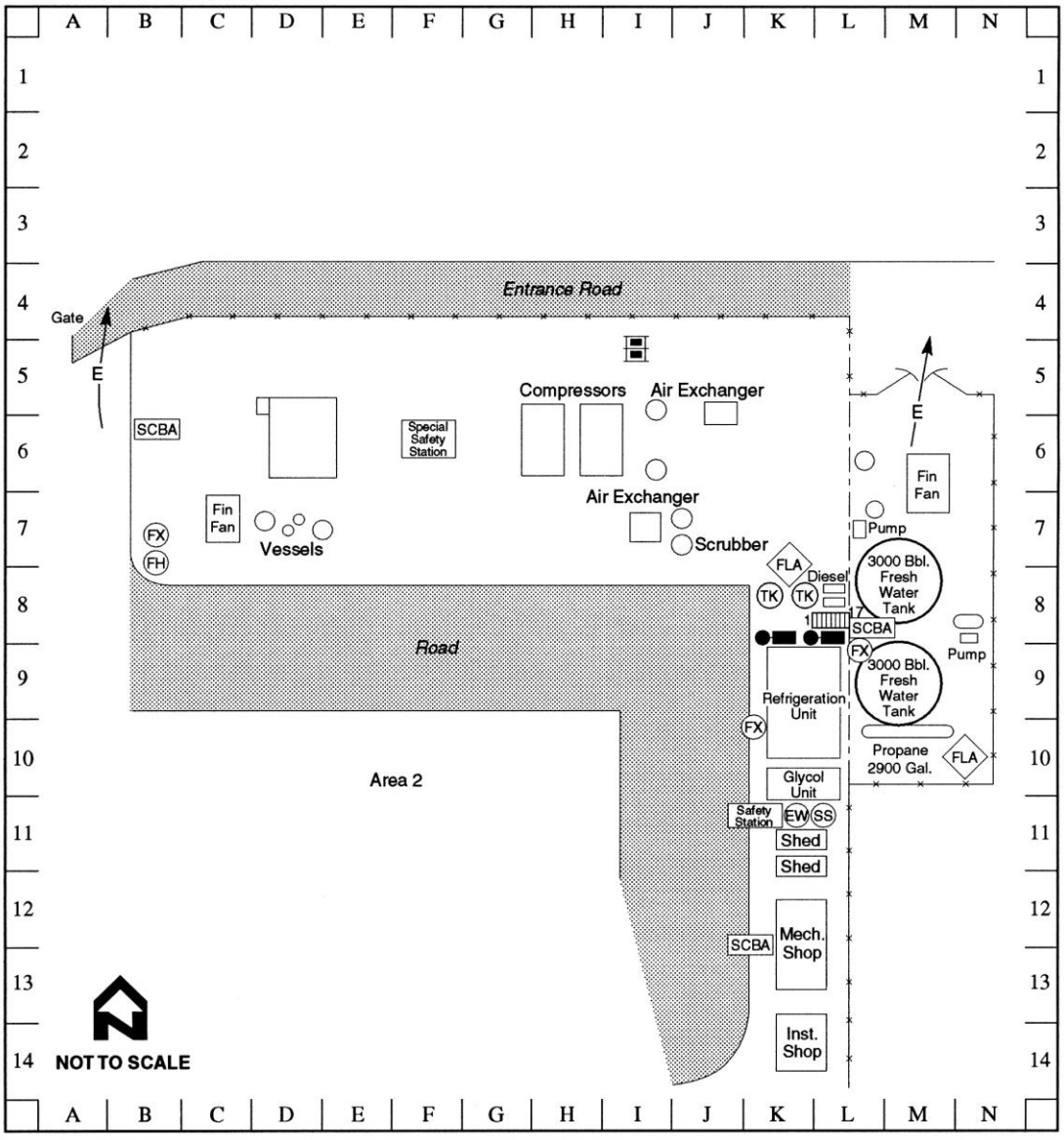

Figure A-10. Ellwood Onshore Facility Area 3

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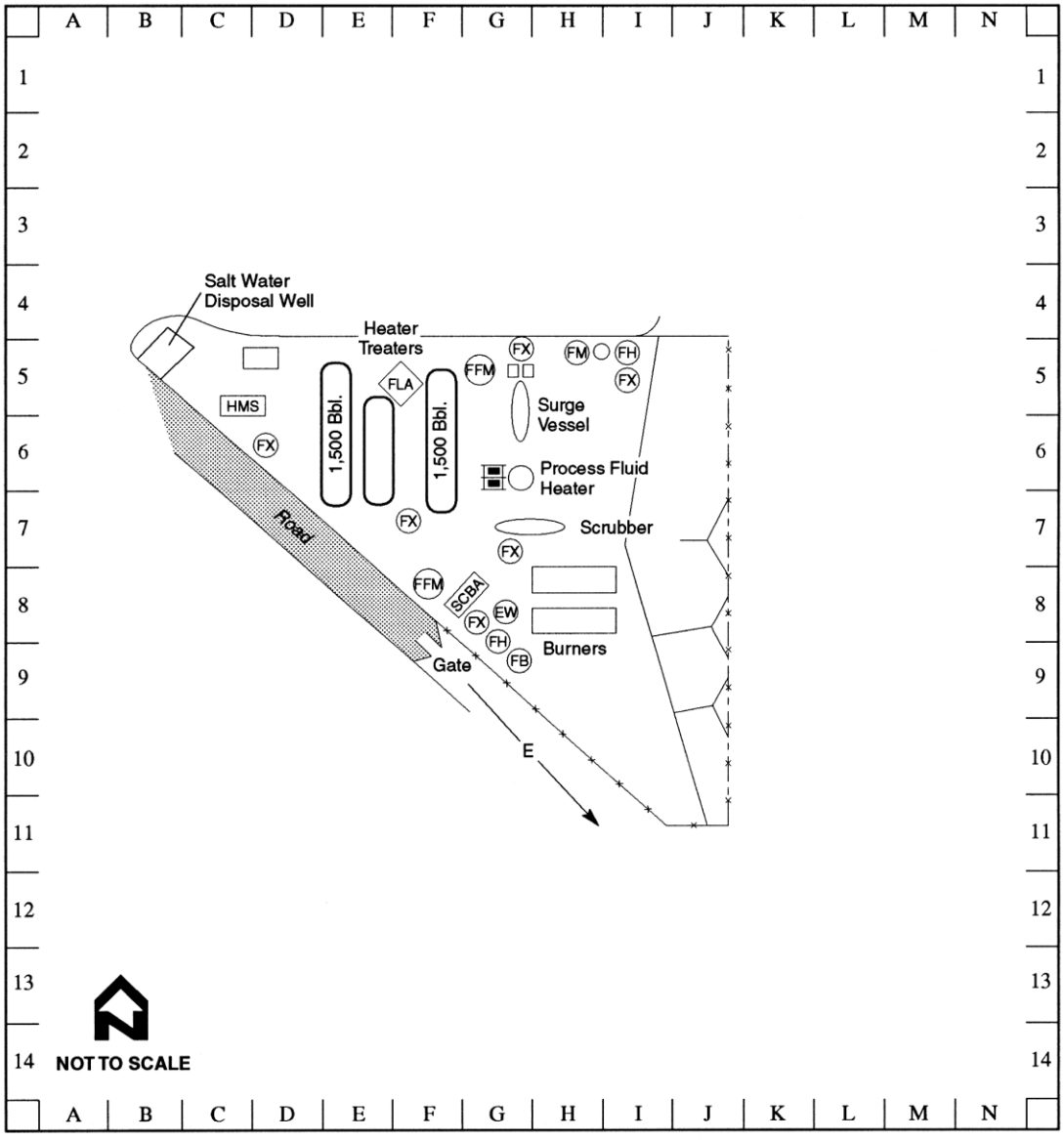

Figure A-11. Ellwood Onshore Facility Area 4

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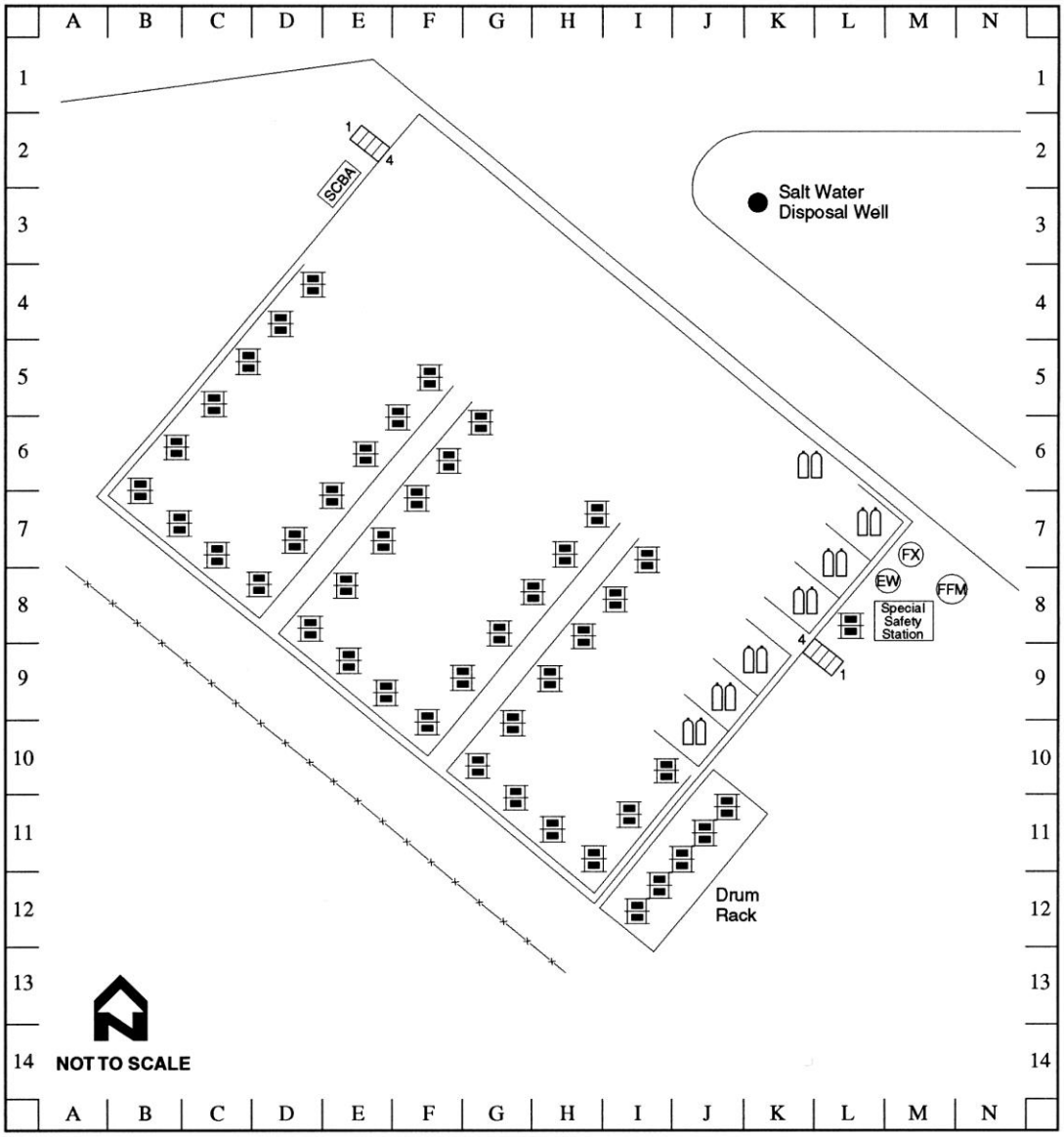

Figure A-12. Ellwood Onshore Facility Dock Area Detail

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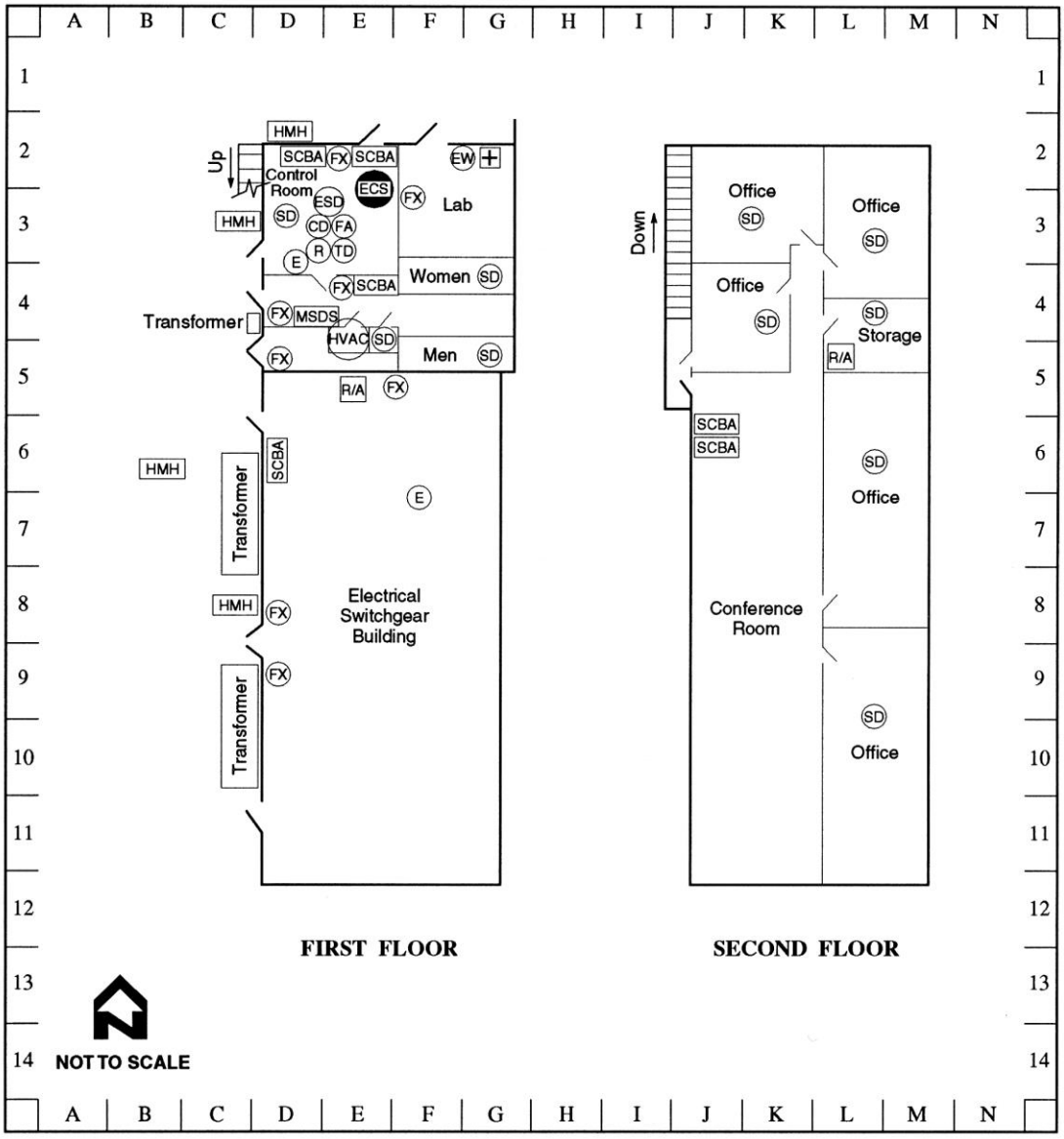

Figure A-13. Ellwood Onshore Facility Office / Control Building Detail

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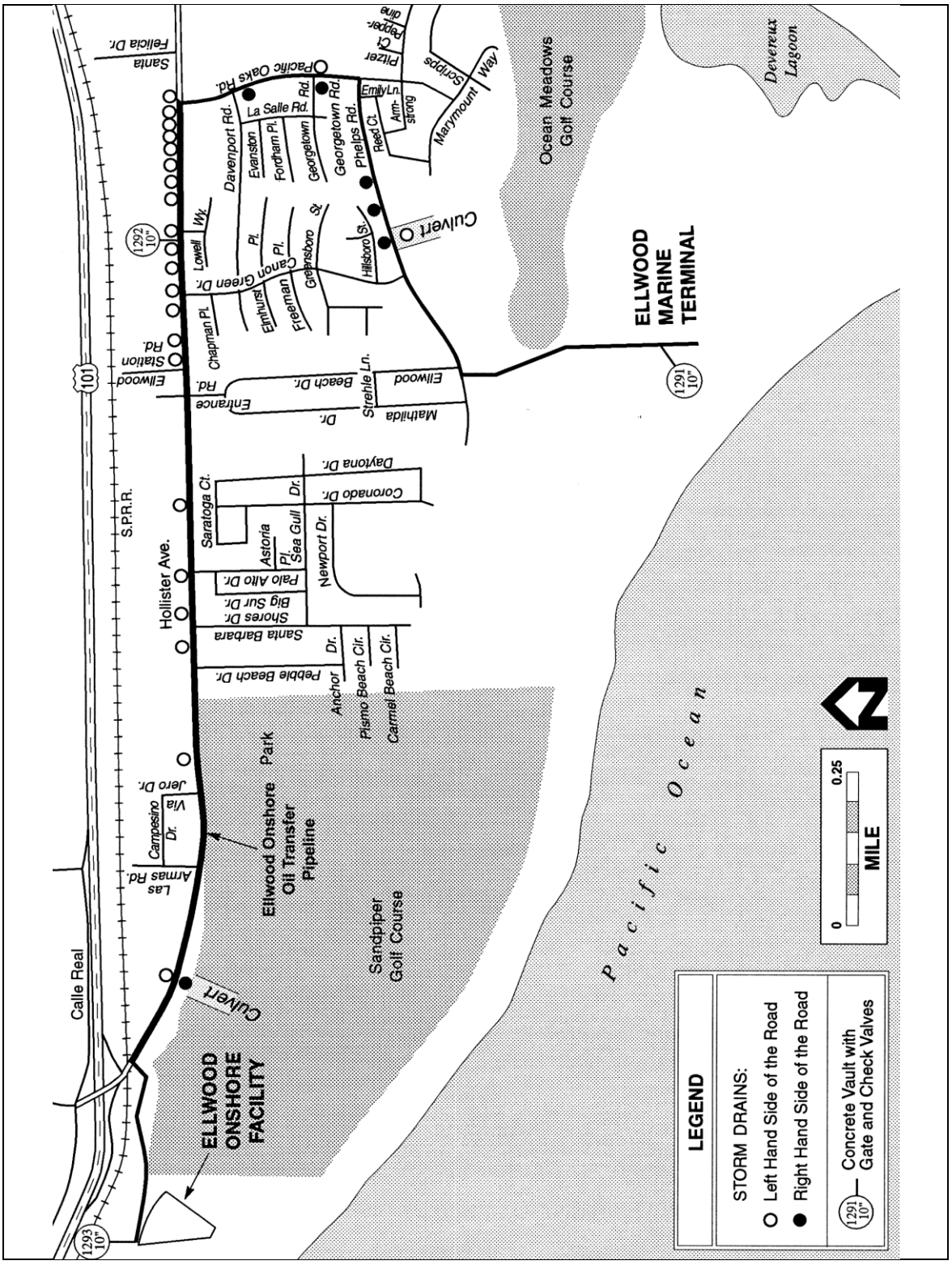

Figure A-14. Storm Drains Along Ellwood Onshore Oil Transfer Pipeline Route

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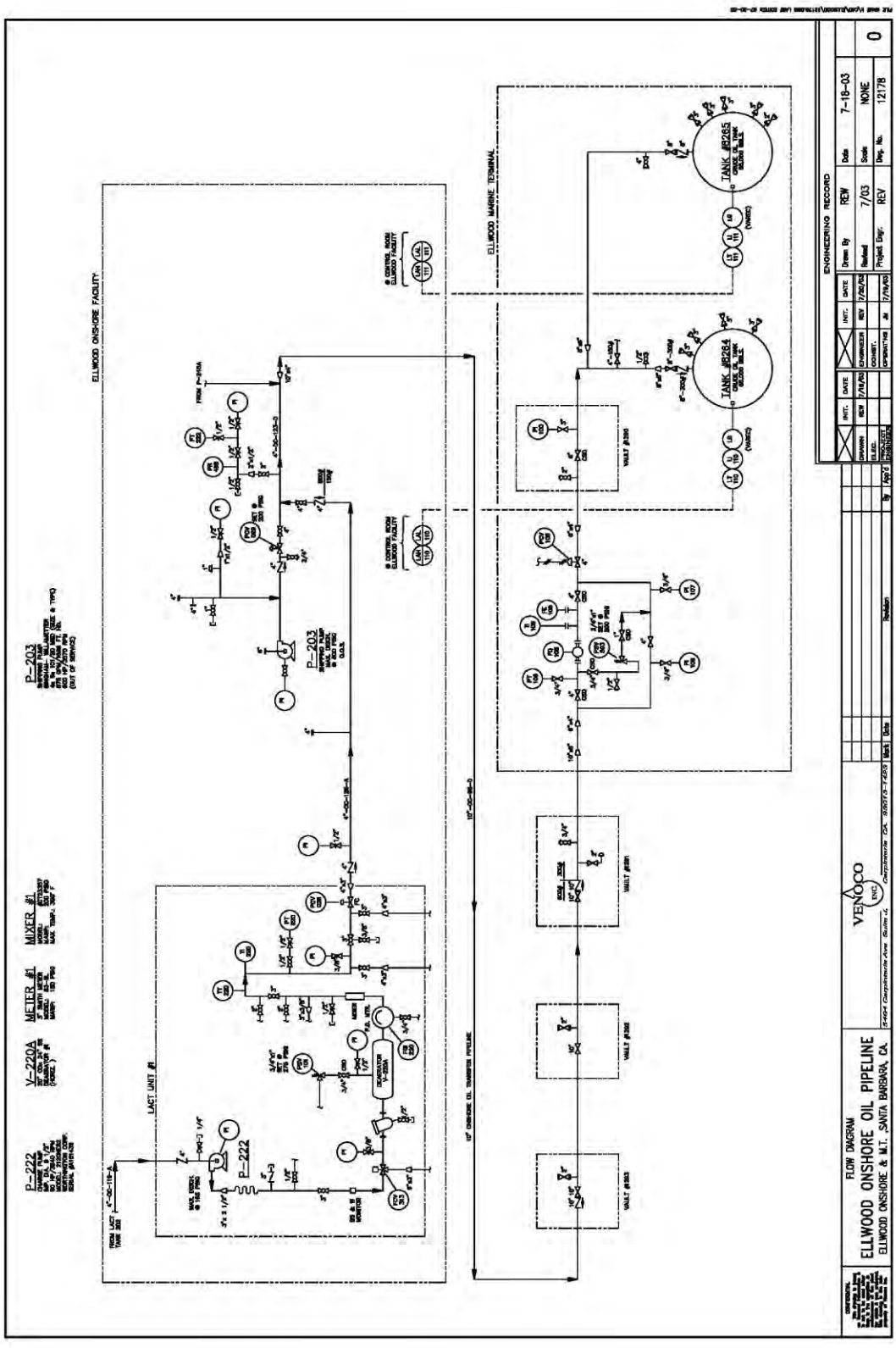

Figure A-15. Process Flow For Ellwood Onshore Oil Transfer Pipeline

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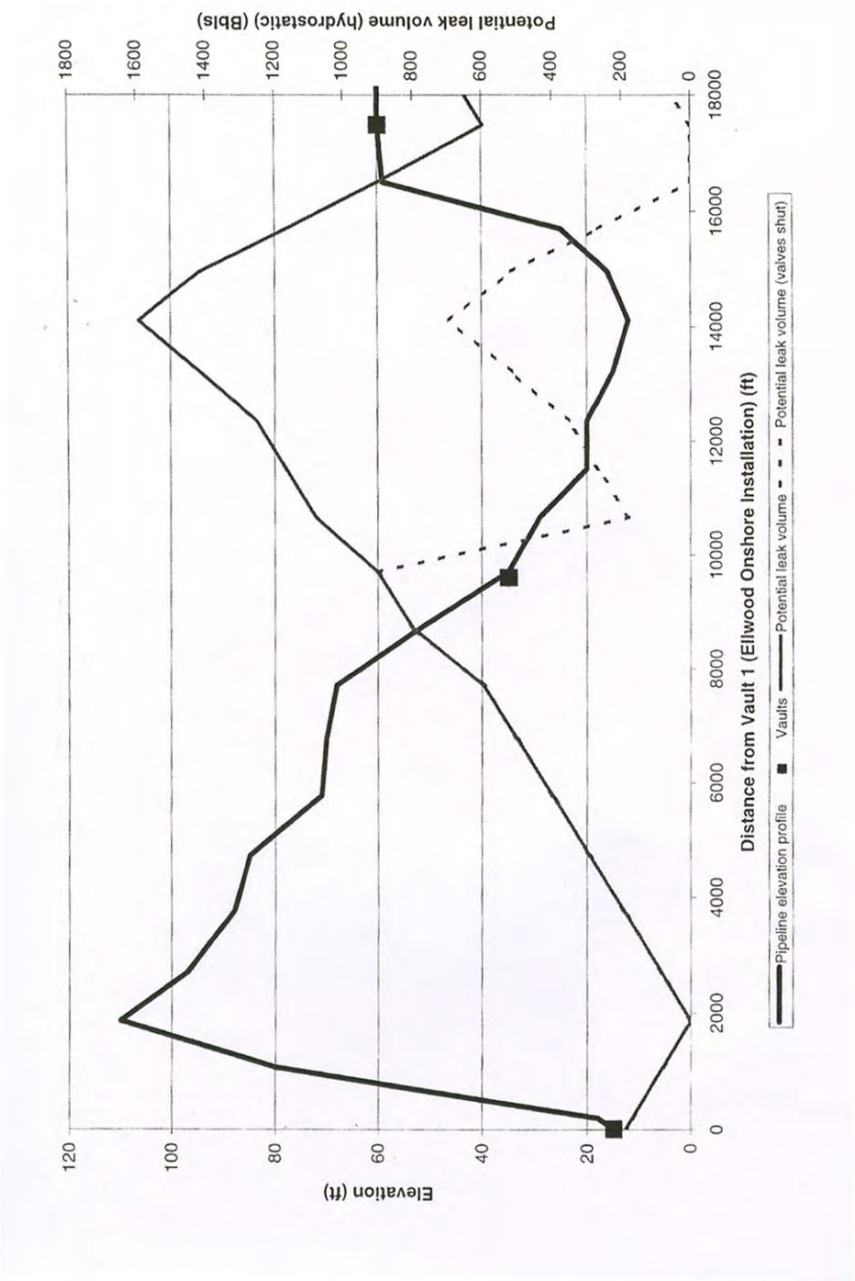

Figure A-16. Elevations And Potential Hydrostatic Leak Volumes Of The Ellwood Onshore Oil Transfer Pipeline

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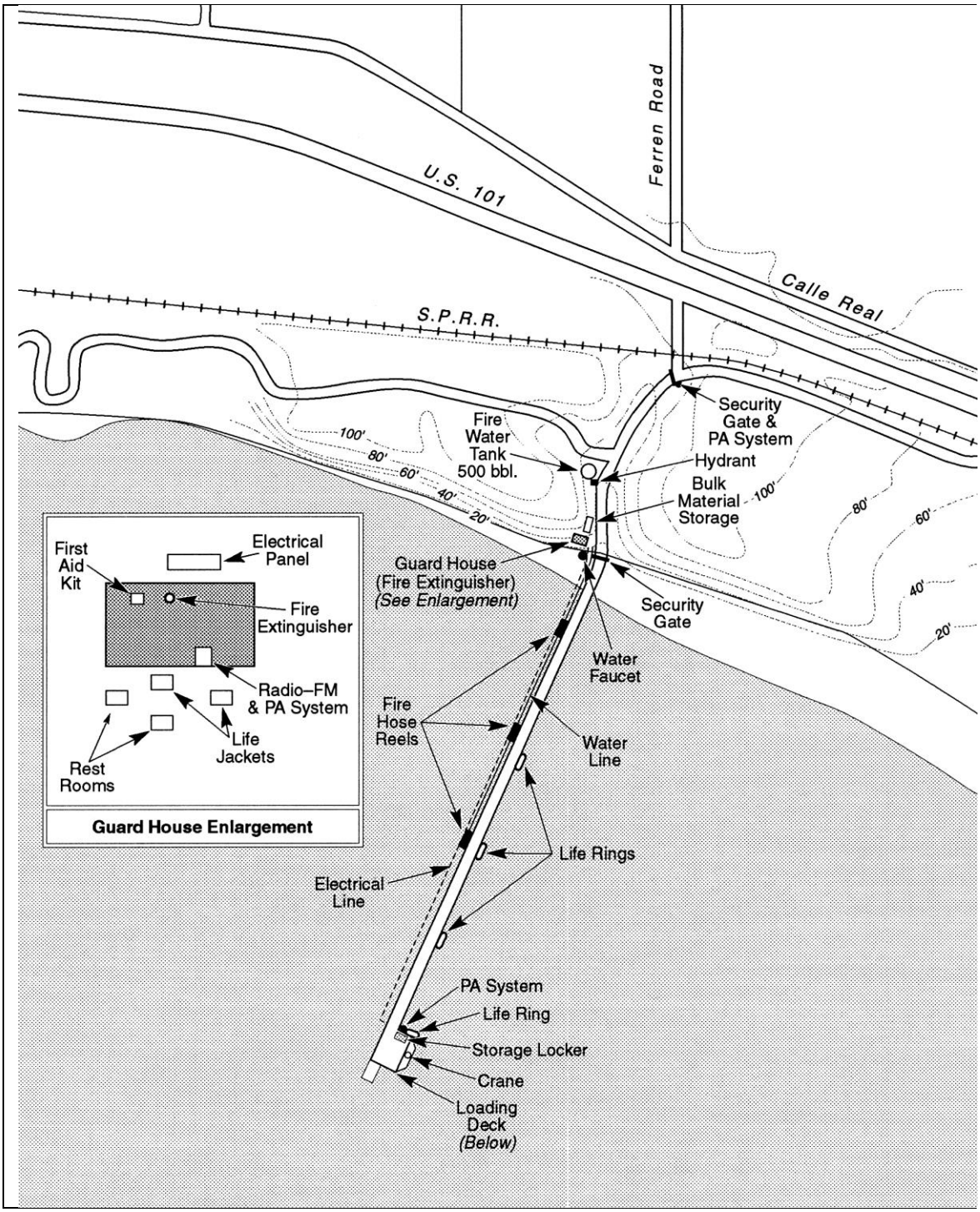

Figure A-17. Ellwood Pier

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A.6 PLATFORM HOLLY

A.6.1 Overview

Platform Holly, an offshore oil and gas production and drilling facility, is located on State Offshore Lease PRC 3242 in the Santa Barbara Channel, approximately 10,000 feet southwest of Coal Oil Point (see Figure A-1). The platform was erected in 1966 and produces from two geologic formations (i.e., Rincon and Monterey). Production is separated into the gas and liquid phases at the platform. One 6.625-inch pipeline transports the oil/water emulsion and one 6.625-inch pipeline transports the produced sour gas to shore for processing. Permitted production is 20,000 barrels of emulsion per day; 13 MMSCFD of gas. Oil produced on Platform Holly is transferred continuously and automatically via pipeline to shore. The platform operates and is manned 24 hours a day, seven days per week.

A.6.2 Design And Operations

Platform Holly includes the following major components (see Figures A-18 through A-20):

- Double-decked drilling and production platform with 30 well slots. Drilling and compressor decks; production deck; and lower deck and boat landing. Production office on production deck. Utility buildings on production and lower decks. Boat landing on lower deck. Heliport on compressor deck.
- One, triple-mast, 142-foot-high workover rig for well maintenance and workover operations.
- One 6.25-inch oil pipeline with normal operating pressure less than 550 psig. One 6.625-inch gas pipeline with normal operating pressure less than 250 psig. Two utility lines (4.5-inch and 2.375-inch) that can be used for gas, oil, or water transportation. Platform access to the lines is provided at the pig launchers.
- Primary source of electrical power is via an undersea power cable to shore. Shore power supplies all of the platform's requirements during normal operations. Secondary power is supplied by a diesel-powered standby generator. In the event that shore power is lost, the generator provides electricity to only the essential platform operations of lighting and communications, alarm and shutdown system, air compressors, firewater water pumps, and type 30 vapor recovery gas compressors.
- One shipping pump combinations for transporting emulsion to Ellwood Onshore Facility for each of the 3120 and 3242 leases.
- Majority of wells equipped for gas lift in which high pressure gas is injected down the producing casing. This gas enters the tubing through gas lift valves and helps lift the column of fluid to the surface.
- Glycol unit removes undesirable water vapor from the gas stream.

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- Compressed air is vital to platform operations. The air supply system consists basically of four functioning units: supply source, surge/condensation tank, air dryer, and distribution system. Two 20-hp air compressors, that run individually or in tandem, provide the air supply source. The air dryer tank is divided into two halves, each half providing a surge or cushion volume for its portion of the system. Each half also services as an area of water vapor condensation. The accumulated water vapor is manually drained. The air dryer removes water vapor from the compressed air, thereby preventing fouling of pneumatic controls and equipment. The air distribution system is composed of: utility air (wet) instrument air (dry), second pneumatic shutdown air, and first pneumatic shutdown air.
- The firewater is a pressured supply of seawater available throughout the platform. Its primary function is for the fire hoses and the deluge sprinkler system. Secondary uses include: standby generator cooling, seawater supply to DCC heat exchanger, and continuous deck drain purge.
- The platform is equipped with an elaborate alarm/shutdown system. A large number of alarms are simply operational alerting personnel to abnormal operating conditions. Others signal more severe conditions and are accompanied by immediate platform shutdowns.
- Operational alarms simply alert personnel to abnormal operations. They are not serious enough to warrant a platform shutdown. The basic operational alarm horn will sound and the corresponding light will flash in the control room.
- The extreme case horns alert personnel to fire, man overboard, or abandon platform condition. They are activated manually by electric switches strategically located about the platform. Their activation has no effect on the platform's operation or shutdown system. This is desired as potential safety hazards are minimized when the platform is operating normally. There is no flashing light in the control room for these horns.
- The first pneumatic shutdown is a safety shutdown. Its activation immediately forces a platform shutdown (i.e., pneumatic shutdown) in addition to closing SSV's (ball valves) and activating the sprinkler system. The operational horn and low shutdown air siren will be set off. The "Fault Shutdown" and meltdown plug lights on the control room shutdown panel will be activated.
- The second pneumatic shutdown is a fault shutdown. It shuts in the wells and shuts down the compressors. It is activated in response to more serious operational alarms (e.g., compressor fault) or safety threats (e.g., H_2S detection). Some alarm sources are equipped with time delays to allow the operator to correct the situation and thus prevent the platform shutdown. Activation of these will set off the operational alarm and turn on the alarm panel's fault light. The situation must be corrected or appropriate alarm bypassed (turning off the fault light) during the allocated time to avert the shutdown. More serious alarm sources

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signal an immediate second pneumatic platform shutdown. In either case, the shutdown will set off another operational alarm and activate the "Fault Shutdown" light.

- Fresh water (non-potable) is needed on the platform for emergency showers, sinks, and compressor jacket water. The platform is equipped with a fresh water storage and distribution system that is located on the crane pedestal. The crane pedestal houses a 2700 gallon potable water tank, which is filled periodically from supply totes delivered via supply boats. A pair of 5-hp centrifugal pumps located at the base of the pedestal are used for both filling of the storage tank from totes as well as pumping water to the platform uses.
- There are four primary compressors on the platform: positive displacement reciprocating White-Superior and Ingersol-Rand, and two, positive-displacement, rotary screw compressors (LEROI) vapor recovery unit.
- All platform decks are equipped with curbs, gutters, drip pans, and drains that collect all contaminants not authorized for discharge. Deck drains lead to a sump tank located underneath the production deck. All collected fluid is pumped via the surge vessel into the pipeline to the onshore processing facility. The flotation cell is equipped with a high-level alarm. The sump and flotation system is inspected during the regular daily and monthly inspections. Fluid level in the sump is checked during each tour and maintained at a minimum level.
- The platform is equipped with strategically located H_2S and hydrocarbon gas sensors. Activation of any sensor by the appropriate gas will sound the continuous high-pitched alarm. The platform will automatically shut down (second pneumatic shutdown) in 45 seconds if the alarm is not acknowledged and bypassed/reset. The only personnel authorized to make this acknowledgement are the two operators or supervisor. The inability of all three to do so during the allotted time would definitely classify the situation as serious, making it imperative that the platform shuts down (as it automatically will).

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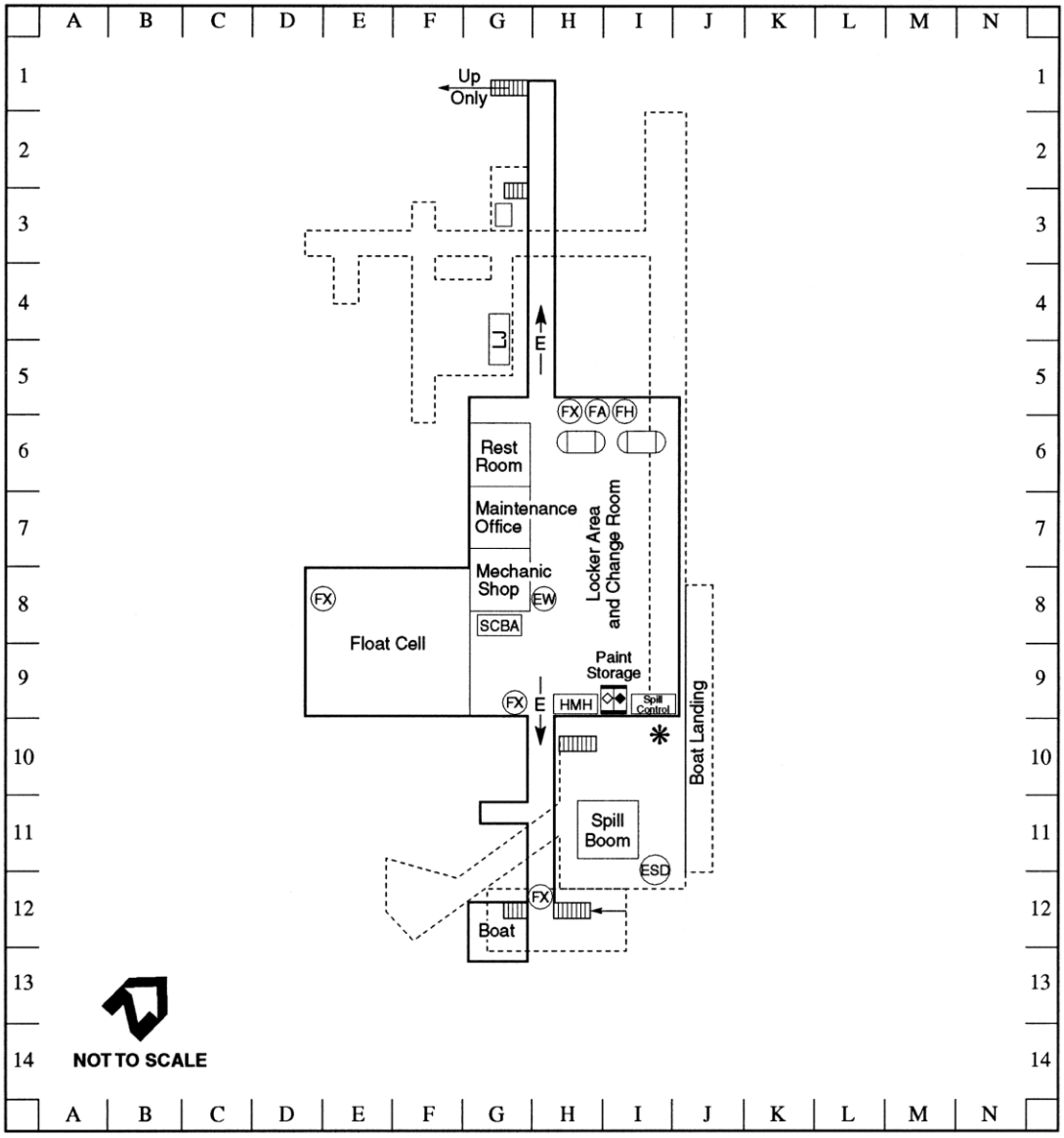

Figure A-18. Platform Holly Lower Deck / Boat Landing

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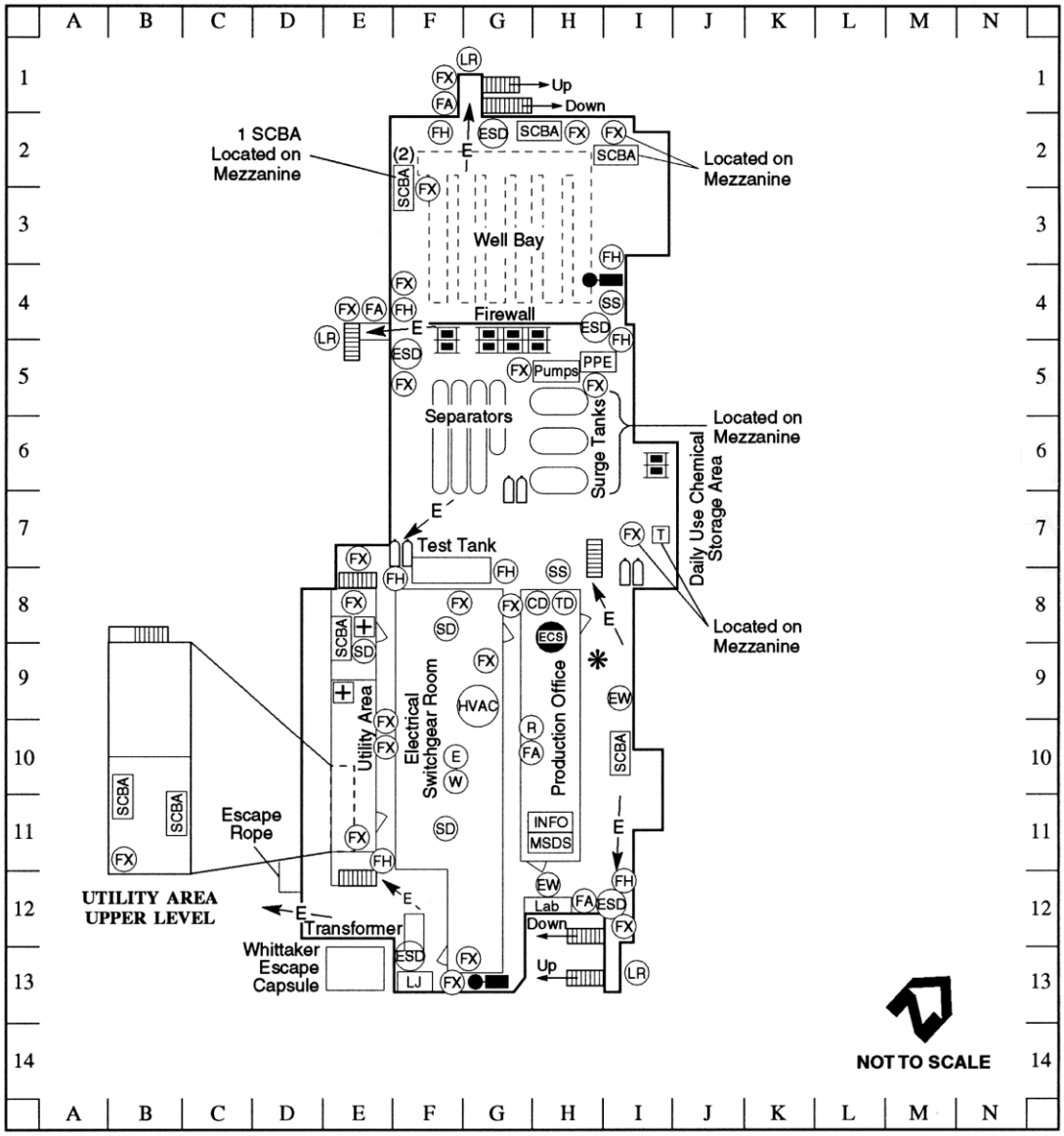

Figure A-19. Platform Holly Production Deck

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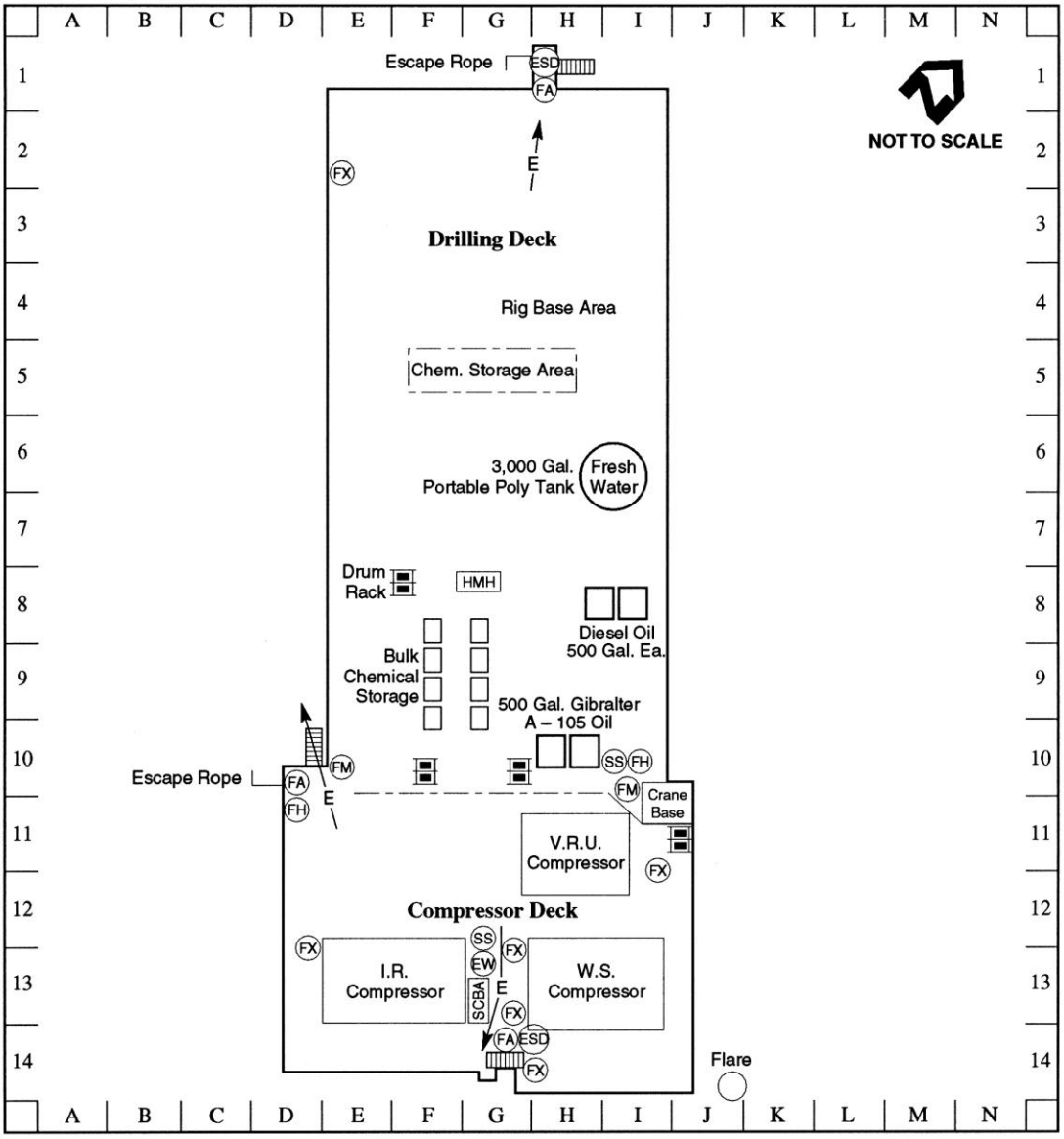

Figure A-20. Platform Holly Drilling / Compressor Decks

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A.6.3 Lease Description

Lease descriptions are given below:

- PRC 3120, a parcel of tide and submerged land in Santa Barbara Channel, Santa Barbara County, California in the vicinity of Ellwood Oil Field, said parcel is described as follows:

  Beginning at a point of the mean high tide line of Santa Barbara Channel, said point being the northwest corner of State Oil and Gas Lease PRC 129.1 and also the northeast corner of PRC 208.1, which point bears N. 77° 18' 58" W. 4,865 feet more or less from a 6 inch iron pipe designated as Monument Number 4 on sheet 3 of 6 of a map of a "Survey of the Ordinary High Water Mark", dated February 1954 and recorded in Record of Survey Map Book 35, Page, 89, Records of Santa Barbara County, said monument having Zone 5 California Coordinates of x = 1,420,819.40 Y = 345,145.75; thence from said point of beginning southeasterly along the mean high tide line to the intersection with a California Coordinate System Zone 5 north-south grid line having an X value of 1,424,750, said point of intersection also having a Y value of 342,436.83, and being on the landward boundary of State Oil and Gas Lease PRC 421.1; thence south along said grid line 18,227.20 feet to a point in the Santa Barbara Channel; thence northwesterly parallel to the mean high tide line to an intersection with the southerly projection of the east boundary line of State Oil and Gas Lease PRC 208.1; thence northerly along said boundary line to the point of beginning. Excluding there from the area of contained in State Oil and Gas Leases PRC 129.1, PRC 428.1 and a portion of PRC 421.1 said parcel containing 3,324 acres more or less.

  The bearings and distances used in the above description are based on the California Coordinate System Zone 5.

- PRC 3242, a parcel of tide and submerged land in the Santa Barbara Channel, near Ellwood in Santa Barbara County, said parcel is described as follows:

  Beginning at a point of the mean high tide line of above-mentioned Santa Barbara Channel, at the intersection with a north-south grid line having a Zone 5 California "X" coordinate of 1,424,750; thence easterly along said mean high tide to its intersection with the western boundary of State Oil and Gas Lease PRC 308.1; thence southerly along said western boundary of Oil and Gas Lease PRC 308.1 and its seaward prolongation to an intersection with an envelope line every point of which is at a distance of 3 geographical miles from the nearest point on the mean high tide line of Santa Barbara Channel; then westerly along said envelope line to its intersection with above-mentioned north-south grid line having a Zone 5 California "X" coordinate of 1,424,750; thence north along said grid line to the point of beginning.

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Excepting from the above-described parcel, State Oil and Gas Lease PRC 424.1 and any portion of State Oil and Gas Lease PRC 421.1 lying within said parcel.

Said parcel containing approximately 4,290 acres excluding the exceptions.

Coordinates and bearings conform to California Coordinate System Zone 5.

A.7 BEACHFRONT LEASE

A.7.1 Overview

Beachfront Lease, a crude oil processing facility with one production well and one injection well, is located adjacent to the Pacific Ocean on PRC 421 near the Sandpiper Golf Course (see Figure A-1). The facility occupies approximately 10,000 square feet of pier space and is surrounded by an eight-foot-high, chain-link fence. The gate is kept locked unless access is required. The facility is currently shut-in.

A.7.2 Lease Description

Beachfront Lease, a crude oil processing facility with one production well and one injection well is located on State Offshore Lease PRC 421 in the Santa Barbara Channel. A lease description is given below:

- Beginning at a point on the ordinary high water mark of the Pacific Ocean, at the most easterly corner of the lands embraced in expired Lease No. 88 (303-1921), which point bears S. 54° 52' 30" E. 340.46 feet, S. 52° 28' 00" E. 1062.38 feet, S. 50° 34' 30" E. 258.19 feet and S. 50° 03' 30" E. 1.00 foot from Monument No. 8 as shown on a map entitled "State Leases and Permits, Elwood Oil Field," approved November 1, 1929, and filed in the office of the Division of State Lands; thence along said ordinary high water mark S. 50° 03' 30" E 1092.33 feet to the most northerly point of the lands embraced in Lease No. 90 (303-1921); thence leaving said ordinary high water mark running along the westerly side boundary line of the lands embraced in Lease No. 90 (303-1921), S 39° 56' 30" W. 2730.82 feet; thence N. 50° 03' 30" W. 1092.33 feet to the easterly side boundary line of the lands embraced in expired Lease No. 88 (303-1921); thence along the said easterly side boundary line of the lands embraced in said expired Lease No. 88 (303-1921), N. 39° 56' 30" E. 2730.82 feet to the point of beginning; and containing approximately 68.48 acres.

A.8 PIPING, INSTRUMENTATION, AND FLOW DIAGRAMS

Piping, Instrumentation, and Flow Diagrams for the South Ellwood Field facilities are available at facility locations.

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A.9 SEASONAL HYDROGRAPHIC AND CLIMATIC CONDITIONS

The general climate of Southern California is classified as a Mediterranean type, having warm dry summers and mild, wet winters. The controlling synoptic feature is a semi-permanent high-pressure system located over the eastern Pacific Ocean, called the Pacific High. The Pacific High migrates and changes in intensity seasonally. During the summer, storm systems are deflected to the north, and during the winter they can reach Southern California.

Winds

- The general wind flow pattern over Southern California is northwesterly throughout the year. Wind speed averages five to ten knots from a westerly component in the afternoon and early evening hours, with winds of 17 knots or greater occurring less than two percent of the time. The local prevailing winds are from the west-northwest.
- Southern California coastal areas are also occasionally affected by Santa Ana winds during the fall and winter. These winds typically have speeds of 15 to 25 mph and relative humidities of 30% or less, and the accompanying temperatures are generally 5°F warmer than the monthly average. In areas downwind of canyons and mountain passes, these winds can be especially severe.

Temperature

- Sea surface temperatures range from about 55°F to 62°F with slightly greater ranges in shallows near shore.
- Temperatures are mild along the narrow coastal plain, with small daily and annual ranges. Temperatures below freezing are rare as those in excess of 100 ºF. Maximum temperatures in July average in the upper 60's or low 70's along the coast. In January, the minimum temperatures average in the mid 40's along the coast.

Precipitation

- Rainfall along the coast averages about 15 inches annually, with most rain occurring between November and April. Summers are usually very dry.
- Operations at sea report the occurrence of precipitation averaging 6% of the time in winter to only 1% of the time in summer.

Humidity, Clouds, and Visibility

- During the spring and summer months, upwelling of cold ocean coastal waters produces fog along the coast. Low stratus clouds may form as a result of moisture being trapped below temperature inversions produced in the lower atmosphere as a result of subsidence motion. In the general area offshore, visibility of less than

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one-half mile occurs about 3.5% of the time annually. There are daily low clouds and late night/early morning fog. The area averages about 70 cloudy days a year.

- Over the ocean, the diurnal variation in humidity is small, about 4 per cent. Mean relative humidity is about 80 per cent. Along the coast, relative humidity varies between 50 per cent during the day to over 80 percent at night.

Tides

- Tides along the coast from Santa Barbara to Point Mugu (eastern Santa Barbara Channel) are mixed diurnal and semi-diurnal.
- There are usually two high tides and two low tides each day. The mean tidal range in the eastern Santa Barbara Channel is about 4 feet, with extremes during spring tides of 6.5 feet.

Ocean Currents

- Currents in the eastern Santa Barbara Channel have speeds generally under 0.5 knots, with 1 knot about the highest expected.
- Davidson Period – December to February: Current is a nearshore, northbound current opposing the prevailing southeasterly California Current along the west coast.
- Upwelling Period – March to June: Upwelling occurs as Coriolis Force transports surface waters of the southeasterly current offshore.
- Oceanic Period – July to December. Southward flows associated with the California Current dominate.

Ocean Waves

- Wind blowing from the northern semicircle, from 270° True to 090° True, is prevented by the mountains from generating appreciable wind waves near shore.
- The Channel Islands to the south also have a sheltering effect, preventing strong winds from developing a fully arisen sea in the Channel.
- The sector from 220° True to 260° True is open to the Pacific and presents no impediment to generation of wind waves.
- In the western part of the channel, waves higher than 6 feet occur about 20% to 40% of the time, occurring with greater frequency from December through May.
- In the eastern part of the channel, waves higher than 6 feet occur about 5% to 14% of the time.

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- Wind waves greater than 6 feet high near shore are expected to have a significantly lower frequency of occurrence because of the sheltering effect of the topography. Swells reaching the nearshore area from the southwest would not be diminished by the land topography.

Weather

The National Weather Service (NWS) is a line office within NOAA. They are responsible for providing up-to-date weather information in response to oil spills. NWS can provide such information as:

- Wind direction.
- Wind speed.
- Air and sea temperatures.
- Direction and height of sea and swell.
- Weather forecasts.

The telephone number for the NWS station is provided in Table 2-19.

A.10 ACCESS, COMMAND POST AND STAGING AREAS

The primary access route to the South Ellwood Field facilities is provided from U.S. Highway 101). Venoco has pre-identified the following possible command post/staging area sites for the South Ellwood Field facilities (depending on the emergency and facility involved):

- Command and Communications Post. Clean Seas Command Post located at the Clean Seas Yard in Carpinteria.
- Staging Area. Clean Seas Yard and/or Carpinteria Oil & Gas Processing Plant.
- Staging Area. Ellwood Pier.
- Staging Area. Sandpiper Golf Course.
- Staging Area: Ellwood Marine Terminal (north area)

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B.1 INTRODUCTION

Venoco personnel inspect and maintain South Ellwood Field and facilities and the Ellwood Pipeline Inc. (EPI) – Line 96 pipeline in accordance with:

- Company procedures.
- Industry practice.
- State, federal and local rules and regulations.

Personnel are trained to detect leaks and to identify potential problems, such as corrosion, cracks, pressure settings or other irregularities that could potentially lead to a spill. Inspection and maintenance procedures include: Operators' daily walk-arounds and scheduled maintenance and inspection (see Section B.2).

The Operator's Daily Walk-Around encompasses routine inspections of process areas, drainage, containment systems, and piping. Operators' daily surveillance routines include visual examination of valves, pipelines, storage vessels, containment areas, and catch basins for indications of a leak or conditions that could possibly lead to one. All valves, flanges and piping are examined by operating personnel as a routine and continuous part of their daily operations. Personnel look for accumulations of oil or product, corrosion, and other evidence of stored material seepage on valves or seals. Maintenance or repairs are made immediately if conditions are discovered that could lead to an oil discharge. The typical decision-making criteria and repair or replacement equipment options are outlined below.

Inspection Decision-Making Criteria	Repair Or Replacement Options
• Severity of leak • Condition of pipe and surrounding pipe • Location of pipe • Critical nature of operation • Type of service of line (e.g., oil, gas, water) • Available materials and resources to replace line	• Clamp or weld patch on line; then if appropriate: - Schedule replacement of a section of the line for a later date, **or** - Replace the section of line now, **or** - If integrity of the entire piping system is in question, hydrotest line and/or replace additional pipe within system.

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B.2 SCHEDULED INSPECTION AND MAINTENANCE

B.2.1 Ellwood Marine Terminal[1]

Table B-1. Frequency and Procedures for Inspecting, Testing, and Maintenance for Ellwood Marine Terminal.

Procedure	Frequency
Check meter readings during loading operation	Hourly
Inspect facility – signs of deterioration or leaks; secondary containment – free of oil and water accumulation, signs of deterioration	Daily walk-arounds
Inspect flow lines for leakage or potential failure	Daily walk-arounds
Gauge aboveground storage tanks against Varec readings	Monthly
Inspect facility - all shipping tank components for defects, assure containment dikes are in proper condition, and observe shipping pumps for leaks	Monthly
Walk shoreline	26 times each year, maximum interval not to exceed 3 weeks
Visually inspect loading line and hose	Prior to transfer
Inspect loading line and hose – by diver	Prior to transfer if loading has not occurred within 14 days
Check cathodic protection on storage tanks, shipping lines piping	Quarterly readings
Inspect MOV and field valve	2 times each calendar year (interval not to exceed 7.5 months)
Inspect aboveground storage tanks: ultrasonic thinness testing, and roof	Annually
Pressure test 150 % of normal operating pressure (hydrostatic) of loading line	Annually
Inspect and pressure test to 150 % of normal operating pressure (hydrostatic) of loading hose	Annually
Inspect offshore mooring	Annually

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[1] Section will be revised following startup of Line 96.

B.2.2 EPI Line 96 Pipeline

Table B-2. Frequency and Procedures for Inspecting, Testing, and Maintenance for EPI – Line 96.

Procedure	Frequency
Internal smart pigging	Every 5 years
Open and inspect valve vaults and valves maintain and test for operation	2 times each calendar year (maximum interval between inspections does not exceed 7.5 months)
Inspect by driving and walking (where necessary) the ROW	26 times each year, maximum interval not to exceed 3 weeks
Monitor cathodic protection	Annually (maximum interval between inspections does not exceed 15 months)
Monitor rectifier operation	6 times each calendar year (maximum interval between inspections does not exceed 2.5 months)

B.2.3 Ellwood Onshore Facility

Table B-3. Frequency and Procedures for Inspecting, Testing, and Maintenance for Ellwood Onshore Facility.

Procedure	Frequency
Visual inspect aboveground shipping tanks	Every two hours
Visual inspect secondary containment: dikes and berms, area within containment free of oil and water accumulation	Daily walk-arounds
Visual inspect process vessels, piping, pumps, and tanks	Daily walk-arounds
Take cathodic protection readings (volts/amps)	Daily
Inspect tank leak detection system	Daily
Inspect produced water disposal facilities for signs of upset	Daily
Inspection includes: observing all storage tank components for defects, containment dikes to assure they are in proper condition, circulating, transfer, and shipping pumps for leaks, and heater treaters and other vessels for conditions that could results in spills; checking communications systems and alarms and emergency response cabinets for readiness, and calibrating the LEL/H_2S sensor	Monthly

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B.2.4 Ellwood Pier

Cranes used on the pier must be certified and inspected. Hoists, chains, slings, etc. are inspected monthly.

B.2.5 Platform Holly And Subsea Pipelines

Table B-4. Frequency and Procedures for Inspecting, Testing, and Maintenance for Platform Holly and Subsea Pipelines.

Procedure	Frequency
Check gross production rate from meter readings. Record shipping line pressures	Every 2 hours
Check beach crossing by pipeline	Daily; Every 12 hours or more frequently in bad weather
Check fluid level of 200-bbl test tank	Daily
Inspect wellheads, process vessels, pumps, sump, flotation system and visible piping for leaks or possible failure	Daily
Visually inspect water surface around platform for sheen	Daily
Inspect oil spill response equipment	Daily
Check rectifier output at Platform Holly	Daily
Check type and amount of corrosion inhibitor in pipeline	Daily
Inspection includes: observing all hydrocarbon handling equipment, fire detection system, deluge system, safety valves, and flow check valves for defects, actuating well shut-in valves in the presence of regulatory agency representatives, checking communications systems and alarms and emergency response equipment for readiness, calibrating the LEL/H_2S sensor, and testing alarms/switches.	Monthly
Check ball valves and block valves	2 times each calendar year (interval not to exceed 7.5 months)
Inspect rectifier operation	6 times each calendar year (interval not to exceed 2.5 months)
Check ESD of the pipeline to shore and the platform	Quarterly
Check corrosion probes and coupons	Quarterly
Check cathodic protection	Annually (maximum interval not to exceed 15 months)
Test shutdown valves	2 times each calendar year
Smart pig of pipeline to shore	Annually

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B.2.6 Beachfront Lease

Table B-5. Frequency and Procedures for Inspecting, Testing, and Maintenance for Beachfront Lease.

Procedure	Frequency
Pier/caisson, inspect wellheads, sump, visible piping for leaks or possible failure	Daily
Visually inspect water surface and shoreline area around pier/caisson for sheen	Daily

B.3 DESIGN AND OPERATIONS MEASURES

B.3.1 Ellwood Marine Terminal[2]

Design and operation measures at the Ellwood Marine Terminal that reduce or mitigate potential spills include:

- The terminal has four strategically located pump shutdown switches for instant loading pump cut off, should an emergency dictate shutdown.
- Thermal expansion is handled with jumper lines around tanks and valves. There is also a spring-loaded relief valve on the steel pipeline downstream of the LACT unit.
- There is an automatic shutdown valve on each tank and a beach valve. Valves close in <60 seconds and the beach valve closes within 63 seconds.
- All oil transfer equipment is secured in the closed position when not in service. There are manual shutoff valves upstream and downstream of the shipping pumps and the valve at the end of the loading line. There are also three motor-operated valves at the outlet of each tank and on the pump discharge which are electrically closed.
- There are pressure gauges on the suction and discharge of each pump.
- The two onshore oil storage tanks are designed and constructed in accordance with A.P.I. standards. The tanks are contained within dikes which are sufficiently impervious to contain any spilled oil. Each tank is equipped with a tank level indicator.
- With respect to secondary containment, the liquid capacity in volume for each diked area is sufficient to accommodate the volume of each tank plus 10 percent at a minimum.
- During transfer operations, there is at least one person on duty at the terminal.
- Clearly defined procedures which must be followed during the transfer operations are specified in the Operations Manual for Ellwood Marine Terminal.

[2] Section will be revised following startup of Line 96.

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- Transfer operations are not allowed during severe weather conditions. If weather conditions become severe during transfer operations, the transfer is secured as quickly as practicable.
- The Terminal Operator is required to shut down loading operations if personnel violate U.S. Coast Guard regulations or Venoco's policies and fail to correct the violation when so advised.
- Venoco has a representative aboard the barge during transfer operations who has the authority to shut down operations if U.S. Coast Guard regulations or Venoco policies and procedures are not followed.
- Prior to transfer operations, Venoco's representative aboard the vessel (i.e., the Company is the designated Person-In-Charge of the terminal) and the Person-In-Charge of the barge (i.e., the vessel tankerman) go over each item on the "Declaration of Inspection", complete the form, and sign it.
- Continuous two-way radio communication is maintained by the Person-In-Charge of the barge and the Terminal Operator during transfer operations.
- Communications between operations and vessel personnel are maintained throughout transfers by "intrinsically safe" two-way radios. There are three different radios available for use during loading operation. Both the Terminal and the barge are each equipped with one Venoco Production radio, two Venoco terminal radios, and one VHF Marine Band radio.
- There is also an "intrinsically safe" telephone communication system available at the terminal, on the barge, and on the tug boat.
- All incoming vessels are met, boarded, and tied up, and unmoored under the direction of a Mooring Master and Assistant Mooring Master.
- Pumps and all transfer systems are only accessible to authorized personnel.
- Containment around the LACT units mitigate risks from potential flooding.
- The Operations Manual for Ellwood Marine Terminal describes methods to reduce spills during transfer operations and immediate spill containment provisions.
- Venoco and Public Service Marine, Inc. (PSMI) require that the barge comply with all applicable rules and regulations of the U.S Coast Guard. The following measures are in effect to enhance spill prevention and reduce the risk of accidents.
- There is a six-inch spill rail around the edge of the barge.
- Each manifold area is located over a containment pan that can collect spillage (up to 2 bbl) during transfer operations.
- The deck is equipped with fixed lighting that is properly wired, shielded, explosion-proof, and ample for nighttime operations.

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- The barge has two double drum hydraulic winches mounted fore and aft. Each drum is fitted with 1,200 feet of mooring wire (1.25 diameter and made of galvanized wire with a minimum 130,000-lb breaking strength).
- The barge is towed from substantially stiffened and permanent padeyes forward with a 50-ton bow safety shackles. There are two links of 3.5 die lock stud link chain (45 feet each side) and one 30-foot, 0.75-inch stud link chain connecting to a flounder plate. Forward of the plate is a 30-foot section of 3-inch stud link chain that serves as a hook up for the tug's tow wire.
- The barge is specifically designed and constructed for ocean travel.
- There are three tankermen and one VENOCO representatives on board the vessel during transfer operations.
- The barge is manned continuously while in the mooring.
- Oil spill containment and cleanup equipment onboard is describe in section A.2.3.
- An emergency response assist boat stands by for oil spill support activities during each loading operation.
- There are clearly defined procedures which must be followed during transfer operations.
- All PSMI personnel are specifically trained in the operation of the barge and are thoroughly familiar with U.S. Coast Guard regulations.
- PSMI personnel receive training in operations and maintenance, spill preventions, spill response, and in all applicable pollution control laws, rules, and regulations. A spill response drill is conducted annually.
- Meteorologic and oceanographic information (i.e., wind direction, wind force, and sea conditions) is monitored regularly by the Barge Captain and Mooring Master during transfer operations.

B.3.2 EPI Line 96 Pipeline

Design and operation measures of the Line 96 Pipeline that reduce or mitigate potential spills include:

- The pipeline is coated and wrapped externally, and equipped with cathodic protection. Venoco monitors the cathodic protection in accordance with all applicable regulations.

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- For real time leak detection, the pipeline system is equipped with a Computational Pipeline Monitoring (CPM) system consisting of a number of Supervisory and Data Acquisition (SCADA) components which are integrated into the EOF process control system. The SCADA components consist of two programmable logic controllers (PLC), flow meters, and pressure and temperature transmitters located at both the EOF and PPLP connection LACT skids. The CPM operates continuously during batch shipping operations as well as when the pipeline is static between batches or when isolated and idle.
- All aboveground sections of pipeline are found within Venoco facilities.
- Venoco belongs to Underground Service Alert (USA) and has provided USA with the location of the Ellwood Pipeline Inc. – Line 96 Pipeline.
- Valves at the meter prover for the Ellwood Onshore Oil Transfer Pipeline are safety-taped and wired closed.
- Valve vaults are covered with metal lids and kept locked with two locks.
- Oil is manually transferred by Operations. Tank 202 has a high level alarm at 10 feet and a high high level alarm at 12 feet.

B.3.3 Ellwood Onshore Facility

Design and operation measures of the Ellwood Onshore Facility that reduce or mitigate potential spills include:

- There are pressure detectors and leak monitors on all piping.
- There are LEL monitors.
- Corrosion on piping is measured through the continuous use of corrosion coupons.
- Any visual damage or operational alarms for low pressure/combustible gases result in immediate repairs.
- Hydrocarbon and H_2S gas detectors are located strategically throughout the facility.
- Gas lines are equipped with high level and low pressure alarms.
- There are high pressure alarms on the heater treater.
- Heaters are equipped with high liquid alarms.
- Valves close at a rate of less than 60 seconds.
- Shutdown can be effected immediately.
- There is a control room equipped with a panel board for each location.
- Procedures for minimizing post shutdown residual drain-out from pipes and relieving pressure due to thermal expansion do not apply to plant operations.
- Oil shipping tanks function as surge vessels.

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- The entire plant has a drainage system that can be routed to concrete-lined floor cellars with a capacity of 14,000 bbl.
- Pretransfer procedures for loading LPG trucks are posted on a board at the truck loading rack.
- There is an emergency "kill" switch at the loading facility.
- Tanks are equipped with high level alarms.
- Truck load volumes are preset. There is a visual indicator of the tank level and a relief valve system on the loading rack.
- The plant area is an integral containment system with storage, facilitated by the natural terrain and slope.

B.3.4 Ellwood Pier

Design and operation measures of the Ellwood Pier that reduce or mitigate potential spills include:

- No loadings occur in high seas or adverse weather conditions.
- Venoco ensures that all crane operators are properly trained.
- Bulk fluids are transferred only during the day.
- A response vessel with sorbent pads and boom is stationed at the pier.
- The pier is gated and a security guard is posted at the pier.

B.3.5 Beachfront Lease

- Personnel are trained to detect leaks and to identify potential problems, such as corrosion, cracks, or other irregularities that could potentially lead to a spill. Inspection and maintenance procedures include: Operators' daily walk-arounds and scheduled maintenance and inspection.
- Maintenance or repairs of equipment that are necessary to prevent pollution of the shoreline and offshore waters are undertaken immediately.
- VENOCO maintains an up-to-date Emergency Action Plan and Oil Spill Contingency Plan. These plans are reviewed annually.
- An operator is on duty 24/7 making early detection of a significant leak probable.
- Inspections of the Beachfront Leases are recorded on specific logs for each lease location by facility operators. These logs are maintained in the EOF control room.
- EOF facility operators inspect the Spill Response Trailers monthly. A checklist is utilized to ensure equipment availability and quantity, and maintained with facility

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maintenance records.

- The Beachfront Lease pier/caisson is gated for security by an 8-foot-high, chain-link fence.
- VENOCO personnel receive extensive and regular training in oil spill prevention and response (see Appendix K).
- VENOCO maintains a comprehensive, integrated communications' network that is a critical component of its emergency response operations (see Appendix L).

B.3.6 Platform Holly And The Subsea Pipelines

B.3.6.1 Platform Holly

Design and operation measures of Platform Holly that reduce or mitigate potential spills include:

- The platform is manned 24 hours per day, seven days per week.
- Venoco maintains an up-to-date Oil Spill Contingency Plan onboard the platform at all times.
- Venoco supervisors instruct all personnel assigned to work on the platform on how to prevent oil discharges, and instruct them in the proper use of clean-up equipment and materials.
- Personnel receive training in spill prevention, spill response, and all applicable pollution control laws and regulations.
- All hydrocarbon handling equipment for testing and production, such as separators, tanks, treaters, are designed and operated to prevent pollution.
- All platform tanks and vessels are designed and constructed in accordance with API standards.
- Platform Holly meets all BOPE requirements for drilling and workover operations, and well shut-in device requirements for production operations.
- Well shut-in devices (BOP's are used when pulling wells) are activated hydraulically and manually. Air pressure responds to a signal from sensors denoting high or low pressures and/or signal from gas or fire alarms. Valves may be manually operated by reducing air pressure.
- Safety shut-in devices are tested in the presence of California State Lands Division and in the presence of Division of Oil and Gas representatives. They are activated pneumatically and electrically.
- Subsurface shut-in valves are located below the ocean floor depth in wells capable of flowing and are controlled and actuated hydraulically through a line to the surface.
- There are no storage tanks on the platform.

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- There is an ESD in the office and shutdown switches (8) strategically located throughout the platform.
- There are high level alarms and high level shutdowns on all vessels which, if not interfered with, shut down the platform in 40 seconds.
- Shutdown via alarms include but are not limited to:
    - surge tanks (high/low level, high/low pressure)
    - group traps (high/low level, high/low pressure)
    - test traps (high/low level, high/low pressure)
    - stack scrubbers (high level)
    - test tank (high level)
    - oil salvage tank (high level)
    - well bay test trap (high/low level, high/low pressure)
- Hydrocarbon and H_2S sensors (14 each) are strategically located throughout the platform.
- There are only relief valves set at a certain pressure that go off to stack.
- Surface safety valves must close within 40 seconds
- There are 18-to-21 fire detection monitors that can shut down the platform.
- All alarms are visible and audible.
- All control valves on oil wells, gas-oil separators, etc. are actuated pneumatically and hydraulically, and all valves will close when instrument air pressure is suddenly reduced.
- The 200-bbl test tank is equipped with a 6-inch overflow line into the platform sump as a protection against overfilling. The tank is maintained at a low level as the high-level alarm system will automatically shut-in all wells on the platform, if actuated.
- All platform decks are equipped with curbs, gutters, drip pans, and drains to collect all contaminants not authorized for discharge. Deck drains lead to a sump tank located underneath the production deck. All collected fluid is pumped into the pipeline to the Ellwood Onshore Facility via the surge vessel.
- Oil spill response equipment is maintained onsite.
- Maintenance or repairs of equipment that are necessary to prevent pollution of offshore waters are undertaken immediately.
- Platform Holly and flowlines to shore are under cathodic protection from rectifiers. Corrosion probes are used to determine the effectiveness of the chemical treatment program to control internal corrosion.
- The flotation cell is equipped with a high-level alarm.
- Pipelines are cleaned periodically by pigging in order to operate at a minimum pressure.

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B.3.6.2 Subsea Pipelines

Design and operation measures of the subsea pipelines that reduce or mitigate potential spills include:

- Pipelines are protected against external corrosion by a cathodic protection system and are cleaned periodically by pigging in order to operate at a minimum pressure.
- The operators examine and record the operating pressures of the pipelines. Any unusual conditions are reported directly to the on duty Ellwood Supervisor.
- Corrosion inhibitor is pumped into the lines on a continuous basis to prevent corrosion.
- The cathodic protection system is in operation at all times to prevent cathodic corrosion.
- Ellwood Operations is required to examine the pipelines at the beach and determine if weather, tides and beach erosion conditions could pose a serious risk to the safe operation at the pipelines. The pipelines from the platform to the Ellwood Onshore Facility may be shut down and filled with water at other times whenever it is determined that severe weather could pose a serious risk to safe operation of the pipelines.
- Pressure recording chart recorders gather pipeline pressure data on Platform Holly.
- A low pressure alarm indicates a leak in the pipeline to shore.
- High pressure will shut the Bettis valve (pneumatic) on the pipeline.

B.3.7 Oil Spill Response Equipment

Equipment on cooperative vessels is inspected monthly and maintained by Clean Seas. Records are kept in the Clean Seas office in Carpinteria and are available to agencies upon request. The records include a maintenance schedule and list of replacements or repairs.

Venoco maintains spill response equipment, including boom, sorbent and boom support boat on Platform Holly and sorbent boom and pads at Ellwood. In addition, there are two spill response trailers stocked with response equipment and supplies. Refer to Appendix F for equipment lists for Venoco, Clean Seas, and NRC Environmental (onshore contractor).

B.4 OTHER SPILL PREVENTION MEASURES

B.4.1 Alcohol And Drug Testing Programs

Venoco's Substance Abuse and Drug Testing program consists of four types of testing for drug and/or alcohol abuse. They are:

Type of Testing	Components
Post Offer / Pre-Employment	• Employment is contingent upon the candidate successfully passing a DOT Five Drug Panel Test. • Should the candidate test positive, the offer of employment is revoked.

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Type of Testing	Components
Post-Accident In The Workplace	• Venoco tests (within 32 hours of the accident) each employee in a safety- or risk-sensitive position whose performance may have contributed to the accident, or whose performance cannot be completely discounted as a contributing factor to the accident. • Employees are prohibited from consuming alcohol within 8 hours after an accident unless testing has already been performed. • Venoco may decide not to test, but this decision will be based on the best information available after the incident.
Random	• Venoco randomly tests a minimum of 25% of employees in safety- and risk-sensitive positions for evidence of alcohol or substance abuse each year. • A computer-based random number generator is used for the employee selection process. • Employees selected for random testing must report to the testing site within 30 minutes, plus travel time, of notice.
Reasonable Cause	• Conducted when there is reasonable cause to believe an employee in a safety- or risk-sensitive position is using, may be using, or has used a prohibited drug or alcohol. • The decision to test shall be based on reasonable observations of physical, behavioral and/or performance indicators. • Required observations are made by a supervisor who has received the Company-designated training on the physical, behavioral and/or performance indicators of probable alcohol misuse or substance abuse and confirmed by way of observation or conversation with a second qualified supervisor or manager. • If it is determined that there is reasonable cause, then Venoco arranges travel for the employee to the test site and back to work.

B.4.2 Security And Surveillance Measures

Security and surveillance measures include:

- Ellwood Marine Terminal and Ellwood Onshore Facility are surrounded by an 8-foot high chain link fence.
- Ellwood Pier is gated and locked. Access is controlled remotely by a security guard.
- All gates are kept closed and locked unless access is required.
- The facilities are patrolled periodically at night, on weekends and holidays by a security service contractor
- Lighting is used to provide safe working conditions. All lighting is of the fixed variety and is properly wired, protected, shielded, and explosion proof. There is no portable lighting. Photoelectric switches automatically illuminate the terminal during hours of darkness.

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- Platform Holly is manned 24 hours per day, seven days per week. There is a minimum of two platform operators on duty at all times.

Additional information is provided in Section 8 of the Emergency Action Plan for the South Ellwood Field.

B.4.3 Training

Spill prevention and safety meetings are held regularly. These meetings cover various topics including Venoco's safety and environmental standards, emergency operating procedures, personnel safety, and spill response procedures. This training is distinct from and in addition to response training. Spill prevention and safety meetings focus on reviewing operational procedures, including preventing overfilling, reducing the risk of spills during transfer operations, detecting leaks in pipes and tanks, and visually inspecting tanks and pipelines. In addition, Venoco uses these meetings to address any spill that may have occurred and to review the cause and circumstances of the incident in terms of "lesson learned." Periodic drills are conducted in spill response.

[3]Oil transfer operations are performed by personnel specifically trained in the operation of the Ellwood Marine Terminal and are thoroughly familiar with U.S. Coast Guard regulations. The Terminal Operator is required to comply with all U.S. Coast Guard requirements and regulations applicable to equipment and transfer operations.

Venoco has limited the personnel involved in tanker loading operations to its most experienced personnel. As trainees, they must have a minimum of 48 hours of supervised actual loading experience prior to being assigned to an unsupervised loading operation shift. They are also required to work through a minimum of four complete barge loadings before being assigned to a start-up, tank switching, or cargo termination operation by themselves or with another trainee.

Venoco EPI pipeline operations personnel are qualified in accordance with DOT/PHMSA Pipeline Operator Qualification regulations as well as the training described above and in Section K of the OSCP.

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[3] Revisions to Marine Terminal sections will be completed following startup of Line 96.

This appendix includes the following forms:

- Spill Response Notification Form: Generic, Onshore, Offshore OCS
- Agency Telephone Log
- Telephone Log
- Site Safety Plan
- Site Characterization
- Tailgate Safety Meeting
- SPCC Facility Inspection
- Qualified Individual Notification Drill Evaluation Form
- Spill Management Team Tabletop Exercise Evaluation Form
- Personnel Response Training Log
- Discharge Prevention Meeting Log
- ICS 201 OS

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Incident Commander

Immediate Response

1. Report to the Command Center.
2. Obtain information and assess magnitude of the incident.
3. Formulate initial response plan.
4. Activate SIRT.
5. Schedule on-scene briefings, planning sessions, and Unified Command meetings.
6. Ensure safety of all personnel.
7. Keep Venoco management informed of the incident and actions taken.
8. Maintain communications with incident observers.
9. Ensure all appropriate agencies are notified.
10. Meet and brief responding agency representatives.
11. Document all actions.

Continuing Response

1. Direct and manage overall response effort, including Command Staff and Section Chiefs.
2. Direct with assistance from Liaison Officer, Planning and Operations Section Chiefs, report preparation: Incident Assessment, Incident Status Reports, Incident Action Plans, Victims List, and final written report on response operations.
3. Formulate strategic decisions related to response.
4. Meet and brief agency officials on response effort.
5. Approve media briefings and activities of visitors (public, government, media).
6. Approve reports to Management and serve as their representative throughout the incident.
7. Document all actions.

Pre-Emergency Planning

1. Review and approve pre-emergency planning activities.
2. Review response team assignments.
3. Determine appropriate emergency authorization guidelines.
4. Keep apprised of Clean Seas' capabilities. Keep apprised of available contractor assistance. Develop mutual agreements as appropriate.
5. Develop initial response team briefing agenda.

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Public Information Officer
Immediate Response
1. Activate staff as required. 2. Assist in contacts with government representatives. 3. Monitor media coverage and respond appropriately with approved statements. 4. Advise IC on external implications of activities. 5. Serve as spokesperson as appropriate. 6. Prepare and release regular press statements after approval by IC and Legal Advisor. 7. Provide recommendations on communication priorities. 8. Establish and distribute media guidelines to SIRT members. 9. Coordinated communications with local, state, and federal representatives. 10. Document all actions.
Continuing Response
1. Provide assistance in obtaining agency approvals. 2. Coordinate release of information to government representatives and the media. 3. Provide a liaison with agency public information representatives and other government officials. 4. Establish and activate a Joint Information Center. 5. Ensure updated information is provided to the media and the public. 6. Document all actions.
Pre-Emergency Planning
1. Develop and maintain contacts with government, community, and media representatives. 2. Develop and maintain staffing plan. 3. Ensure staff training. 4. Prepare guidelines for effective public affairs program. 5. Keep apprised of “sensitive” issues. 6. Provide media training annually for the response team. 7. Identify potential media centers, communication needs, and equipment requirements. 8. Maintain media contact list, and contract for news clipping and video service.

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Liaison Officer
Immediate Response
1. Activate staff as required. 2. Establish and maintain contacts with government representatives and community organizations. 3. Advise IC on external implications of activities. 4. Serve as spokesperson as appropriate. 5. Provide recommendations on communication priorities. 6. Document all actions.
Continuing Response
1. Coordinate visits by agency and community representatives with IC. 2. Coordinate release of information to government representatives and the media. 3. Provide a liaison with government officials and community representatives. 4. Together with Legal Advisor, assist Planning Section Chief in obtaining necessary government approvals and permits. 5. Coordinate Company response efforts with Regional Response Team (RRT) or any other committee formed by the agency representatives during the response. 6. Manage the assignment of volunteers and arrange with Logistics to provide support services for volunteers, as needed. 7. Document all actions.
Pre-Emergency Planning
1. Develop and maintain contacts with government and community representatives. 2. Develop and maintain staffing plan. 3. Ensure staff training. 4. Keep apprised of “sensitive” issues.

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Safety Officer

Immediate Response

1. Report to field location(s) and ensure adherence to all safety rules and regulations.
2. Prepare Site Specific Safety Plan and Site Characterization.
3. Activate Safety staff.
4. Mobilize safety equipment.
5. Advise the IC of any casualties/injuries and required first aid assistance.
6. Provide safety observations to Operations Section.
7. Set up first aid stations and provide first aid.
8. Liaison with public safety providers.
9. Establish a hazard safety zone and evacuate/keep out all non-essential personnel.
10. Document all actions.

Continuing Response

1. Prepare safety-related reports for submission to the IC.
2. Issue Safety Bulletins/Messages to response personnel.
3. Coordinate safety effort with agency representatives (Fire, Police, Emergency Rescue).
4. Continuously monitor activities and report any unsafe conditions or operations to the Operations Section Chief.
5. Work with Services to ensure contractor personnel have the required OSHA or special training.
6. Provide fire extinguishers at prescribed locations around the hazard zone.
7. Ensure availability and usage of appropriate PPE and safety equipment.
8. Implement Decontamination Procedures.
9. Command search and rescue operations, as needed.
10. Contact medical centers/hospitals to alert them of incident and potential number of injuries.
11. Inspect and control sanitation problems and ensure safe provision of drinking water and food.
12. Document all actions.

Pre-Emergency Planning

1. Keep apprised of federal and state safety rules and regulations.
2. Develop safety training and inspection programs.
3. Maintain list of safety contractors and inventory for safety and PPE equipment.
4. Develop supply and services checklist.

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Operations Section Chief
Immediate Response
1. Report directly to IC. 2. Direct all response operations. 3. Establish Field Command Post at incident site 4. Activate field operations staff and determine additional staffing requirements. 5. Work with Planning on Shoreline Protection Plan. 6. Coordinate pre-cleanup of beaches threatened by spill to minimize disposal needs. 7. Work with Planning on Beach Cleanup Plan. 8. Determine if non-related operations need to be shut down. 9. Work with other Section Chiefs to determine priority of response effort, resource requirements, and allocation of resources. 10. Keep IC informed of response actions. 11. Document all actions.
Continuing Response
1. Coordinate response effort of Onshore and Offshore groups. 2. Manage all containment and cleanup operations. 3. Provide daily progress reports to IC. 4. Ensure safety procedures are followed. 5. Evaluate effectiveness of response operations; adjust resources as necessary. 6. Document all actions.
Pre-Emergency Planning
1. Review and approve pre-emergency planning activities. 2. Maintain staffing plan. 3. Develop status reports to be provided to IC. 4. Ensure appropriate training for staff. 5. Keep informed of Clean Seas' and response contractor's capabilities and staffing.

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Staging / Security Unit Leader
Immediate Response
1. Locate and establish staging areas for onshore and offshore operations. 2. Establish layout of each staging area. 3. Provide security for response personnel, facilities, and staging areas. 4. Work with Services to provide the required supplies and services. 5. Documents all actions.
Continuing Response
1. Assess need for additional sites. 2. Work Services to ensure supplies and services as provided as requested. 3. Establish check-in/check-out system for resources entering or leaving staging areas. 4. Prepare in-advance a list of needed resources, including lead times. 5. Keep Operations informed of resource status changes. 6. Demobilize staging area(s) when requested. 7. Evaluate security needs continually. 8. Implement security measures as expeditiously as possible. 9. Coordinate security measures with local law enforcement agencies. 10. Maintain a Visitor's Log at the Command Post. 11. Document all actions.
Pre-Emergency Planning
1. Identify potential staging areas. 2. Develop procedures for handling resources in staging areas. 3. Develop Demobilization Plan. 4. Maintain up-to date list of security services, including material and equipment needs and lead times.

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Engineering Unit Leader
Immediate Response
1. Organize and direct damage control operations. 2. Conduct initial investigation of the upset condition. 3. Assess damage/impact to affected facilities and implement engineering solutions as necessary. 4. Coordinate engineering activities with response operations. 5. Work with Safety Officer to maximize safety of engineering personnel. 6. Document all actions.
Continuing Response
1. Ensure engineering personnel have necessary resources. 2. Provide general technical assistance as needed. 3. Assist response team members in determining need for technical specialists. 4. Work with Finance to execute contracts. 5. Work with Planning to ensure technical services comply with Company requirements. 6. Coordinate review of solicited and unsolicited proposals for technical work. 7. Inform Planning of “new ideas” that have technical merit or technical services that may improve the efficiency or effectiveness of response operations. 8. Document all actions.
Pre-Emergency Planning
1. Maintain a list of technical services and technical specialists. 2. Keep informed of technical developments. 3. Plan for damage control operations.

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Surveillance Unit Leader
Immediate Response
1. Report to the Operations Section Chief. 2. Organize and direct surveillance operations in association with Venoco's offshore response contractor. 3. Provide surveillance information to Operations. 4. Work with Logistics to obtain need resources. 5. Document all actions.
Continuing Response
1. Ensure personnel have necessary resources. 2. If needed, work with U.S. Coast Guard and FAA to restrict sea and air space. 3. Coordinate surveillance operations with Planning. 4. Coordinate activities with surveillance by government agencies. 5. Document all actions.
Pre-Emergency Planning
1. Maintain a list of surveillance services and resources. 2. Keep informed of technical developments.

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Decontamination Unit Leader
Immediate Response
1. Work with Safety to implement Decontamination Plan. 2. Develop and implement Waste Management Plan, including quantifying the amount of liquid hydrocarbons recovered. 3. Work with Logistics to obtain needed resources. 4. Document all actions.
Continuing Response
1. Ensure personnel have necessary resources. 2. Monitor temporary storage, transportation, disposal, and recycling of wastes. 3. Arrange for Company-approved contractors/laboratories to sample and test wastes. 4. Arrange for Company-approved contractors to transport wastes to approved disposal sites. 5. Document all actions.
Pre-Emergency Planning
1. Maintain a list of Company-approved waste management contractors. 2. Keep informed of all applicable state and federal regulations concerning waste management. 3. Review and update Decontamination Procedures and Waste Management and Disposal Plan as needed.

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Planning Section Chief
Immediate Response
1. Coordinate with Operations Section Chief and IC to develop an initial Incident Response Plan. 2. Contact other Section Chiefs to determine situation and support requirements. 3. Document all actions.
Continuing Response
1. Continue to develop and update action plans (Refer to Sections 2.3.3.6-2.3.3.10). 2. Effectively monitor, track, and determine spill trajectory using all available applicable methods (Refer to Sections 2.3.3.6-2.3.3.7) 3. Coordinate follow-up checks with other staff members to ensure all agencies and individuals receive required reports. 4. Obtain approval for alternate remediation strategies (Refer to Appendix J.2 and J.3) 5. Ensure status boards are maintained. 6. Ensure work requests are used by response personnel. 7. Coordinate documentation of all aspects of the response effort. 8. Coordinate tracking of response personnel with Services Unit Leader. 9. Document all actions.
Pre-Emergency Planning
1. Support IC pre-emergency planning activities. 2. Research and define operations/activities that require federal, state, and/or local permits. 3. Maintain a roster of personnel and equipment contractors that may be contacted on a 24-hour basis to support a response.

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Environmental Unit Leader

Immediate Response

1. Manage all environmental issues.
2. Seek and obtain necessary permits and approval from appropriate government and trustee agencies such as California DFG, U.S. FWS, and National Marine Fisheries.
3. Provide assistance in obtaining permits and approvals for dispersant use, *in situ* burning and/or waste disposal.
4. If necessary, obtain permits to use certain types of equipment and vehicles in restricted areas.
5. Collect initial baseline environmental information.
6. Document all actions.

Continuing Response

1. Work with Trustee agencies to ensure retrieval, cleaning and rehabilitation of affected wildlife.
2. Monitor response plans and activities, and advise Planning Section Chief of permit requirements (Refer to Section 2.3.3.6-2.3.3.10).
3. Monitor compliance with permit requirements.
4. Assist Planning in developing mitigation measures.
5. Collect area environmental information and continually assess damage/potential damage to environment (Refer to Appendix M and ACP 2006, Sections 9812, 9813, 9814).
6. Provide liaison between Company and CA Department of Fish and Game / OSPR.
7. Advise Operations on potential effects of operations to the environment and/or sensitive resources (Refer to Appendix H, I, and J).
8. Arrange for resources from Logistics and volunteers from Liaison, as requested by Trustee Agencies.
9. Arrange for consultants to document the effect of the spill on sensitive resources.
10. Document all actions.

Pre-Emergency Planning

1. Maintain a list of environmental consultants.
2. Research and define operations/activities that require federal, state, and/or local permits.
3. Review Dispersant Use Plan, *In Situ* Burning Plan, and sensitive resource database.
4. Keep current on wildlife cleaning and rehabilitation techniques.

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Documentation Unit Leader
Immediate Response
1. Provide “real time” documentation of ongoing response. 2. Publish and distribute frequently incident status chronology based on event logs during the response. 3. Contact Section Chiefs to ensure effective and proper documentation. 4. Ensure documentation of meetings with agency representatives. 5. Use still photography and video to document the incident. 6. Document all actions.
Continuing Response
1. Ensure IC has good written records available to him at all times. 2. Continue to publish and distribute incident status chronology. 3. Maintain files of all correspondence, reports, data sheets, etc. 4. Arrange for collection of news clippings and other information provided by media. 5. Provide duplication services to personnel. 6. Arrange for packing and storing of incident files for legal, analytical, and historical purposes. 7. Coordinate all documentation and prepare Final Incident Report. 8. Provide administrative support as needed.
Pre-Emergency Planning
1. Develop documentation procedures for the response team. 2. Obtain and maintain audio recording, still photography and video equipment. 3. Maintain a list of still photographers and video consultants. 4. Maintain documentation supplies.

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Status Board Unit Leader
Immediate Response
1. Receive information only from Command and Section Chiefs. 2. Assist and maintain Information Center at the Incident Command Center. 3. Maintain status boards. 4. Post information from IIRT before transition to SIRT. 5. Document all actions.
Continuing Response
1. Maintain accurate and complete incident files. 2. Ensure response team is aware of information by timely postings on status boards. 3. Provide a liaison with agency public information representatives and other government officials. 4. Document all actions.
Pre-Emergency Planning
1. Prepare and format status boards. 2. Ensure adequate supplies. 3. Ensure staff training.

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Logistics Section Chief
Immediate Response
1. Activate logistics/services organization. 2. Ensure safety of all responders. 3. Coordinate establishment of Field Command Posts with Operations. 4. Ensure delivery of response equipment, material and supplies. 5. Document all actions.
Continuing Response
1. Provide transportation, food and lodging services. 2. Coordinate with Operations and Planning/Environmental to obtain beach access. 3. Coordinate communications (radios, phones, facilities). 4. Evaluate security needs with IC and Operations Section Chief. 5. Maintain daily file of all equipment used and inform IC of deficiencies. 6. Coordinate logistics of demobilization. 7. Document all actions.
Pre-Emergency Planning
1. Review pre-emergency planning activities. 2. Maintain staffing plan. 3. Develop status reports to be provided to IC. 4. Ensure staff training. 5. Develop logistics action plan that identifies supplies and services needed and possible sources, including private enterprise, cooperatives, and in-house. 6. Keep supply and services list up-to-date. 7. Identify companies with which to maintain basic ordering agreements.

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Communications Unit Leader
Immediate Response
1. Implement Communications Plan. 2. Locate and obtain Mobile Communications Vehicle. 3. Arrange for additional radios, telephones, facsimiles, and PCs as necessary. 4. Document all actions.
Continuing Response
1. Maintain an inventory of radio distribution and call signs. 2. Track distributed communications equipment. 3. Ensure operability of the communications network. 4. Install and test communications equipment. 5. Maintain and repair communications equipment. 6. Establish and manage communications and messaging center. 7. Document all actions.
Pre-Emergency Planning
1. Develop a Communications Plan for supplementing existing communications. 2. Review and upgrade emergency notification system as necessary. 3. Maintain up-to-date list of suppliers and services.

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Services Unit Leader
Immediate Response
1. Manage contracted services for the response effort. 2. Implement staffing program. 3. Ensure equipment and materials, transportation and facilities are provided for the response effort. 4. Coordinate deployment of contract manpower with Operations and Finance Section Chiefs. 5. Document all actions.
Continuing Response
1. Arrange for first aid, medical services and transportation for injured or ill response personnel. 2. Develop distribution plan for personnel, equipment, material, and supplies. 3. Provide food and potable water for response personnel. 4. Provide fuel and lubricants delivery to support operations. 5. Provide portable sanitary facilities and arrange for regular maintenance. 6. Identify and if necessary secure services for fabrication. 7. Implement regular inspection and maintenance of response equipment. 8. Provide contract manpower for response and continued operations as needed. 9. Maintain a current file of all available personnel and their location. 10. Establish personnel recruiting office if needed. 11. Assist in making travel and lodging arrangements. 12. Work with Finance on payroll requirements for contract labor. 13. Maintain records for contracted transportation services and ensure their compliance with transportation-related standards and regulations. 14. Work with agencies to establish transportation routes. 15. Ensure necessary materials and supplies are on-hand to keep equipment operational. 16. Gather and post status information on equipment and personnel. 17. Develop a schedule for movement and delivery of equipment, material and supplies to the response. 18. Evaluate adequacy and maintenance of facilities and make modifications as needed. 19. Ensure facilities comply with Building and Safety Codes. 20. Work with Staging / Security Unit Leader to ensure security of facilities. 21. Document all actions.
Pre-Emergency Planning
1. Keep up-to-date list of services needed and service providers for response operations.

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Finance Section Chief
Immediate Response
1. Activate support staff. 2. Prepare and approve contracts and expenditures for response. 3. Advise IC of expenditures. 4. Document all actions.
Continuing Response
1. Coordinate activities of staff. 2. Oversee family support protocol in the event of an injury or death to a Company employee or contractor. 3. Communicate essential cost information to appropriate personnel. 4. Provide cost forecasts for response operations to IC. 5. Ensure Work Requests are being used by section personnel. 6. Document all actions.
Pre-Emergency Planning
1. Maintain staffing plan, including contract labor sources.

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Claims and Insurance Unit Leader
Immediate Response
1. Activate support staff. 2. Notify other Accounting/Auditing supervisors. 3. Establish Claims Center/Phone Number if necessary. 4. Document all actions.
Continuing Response
1. Coordinate activities of staff. 2. Maintain accounting of response expenditures. 3. Ensure Accounting and Auditing is staffed as needed. 4. Review requests for personnel and equipment, contracts, invoices, rental agreements, etc. 5. Communicate essential cost information to appropriate personnel. 6. Continually audit material billings and manpower. 7. Provide qualified claims adjusters to investigate claims of damage. 8. Handle inquiries from insurance companies and accompany claims adjusters on tour of site. 9. Work with insurers on settlements as a result of an injury or death. 10. Work with Services to develop Procurement Plan. 11. Develop and implement Cost Accounting Program. 12. Review, negotiate, and process contracts. 13. Develop and administer a cash account and payroll system. 14. Document all actions.
Pre-Emergency Planning
1. Develop procedures to receive, review, and process damage claims. 2. Maintain staffing plan, including contract labor sources. 3. Develop Cost Accounting Program. 4. Maintain list of existing contracts and basic ordering agreements.

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Legal Advisor
Immediate Response
1. Activate staff and estimate additional staff required. 2. Advise IC and Section Chiefs of legal sensitivities and required documentation that may be required in potential lawsuits and insurance claims. 3. Lead investigative team to determine the cause of the incident and collect data that may be needed for future legal activity. 4. Review documentation responsibilities with the response team. 5. Review contracts as needed. 6. Provide consultation as necessary. 7. Coordinate legal activities. 8. Document all actions.
Continuing Response
1. Review appropriateness of submitted documentation. 2. Review claims and contracts as needed by Finance Section. 3. Provide legal approval of all reports provided to government agencies. 4. Coordinate legal activities. 5. Document all actions.
Pre-Emergency Planning
1. Review and approve pre-emergency planning activities. 2. Maintain staffing plan and appropriate training. 3. Develop documentation program. 4. Identify law firms with oil spill experience to provide assistance during an incident. 5. Keep apprised of all applicable rules and regulations. 6. Coordinate with Staging / Security to develop a plan for investigating/documenting the cause of the incident. 7. Provide consultation as necessary.

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The Ellwood Field facilities utilize MSDSonline to maintain MSDSs of all chemicals and hazardous materials used at the Ellwood Onshore Facility, Platform Holly, Beachfront Lease, Ellwood Pier, and Ellwood Marine Terminal (EMT). MSDSonline can be accessed by all operations and HES personnel 24/7 and is updated regularly as new products are introduced and other products are retired.

The MSDSs for sweet and sour crude oil are provided following this page.

MSDS Crude Oil – Sweet

MSDS Crude Oil – Sour

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Crude Oil – Sour
Synonyms: Sour Crude – Sour Oil – Petroleum
Generic Name: Petroleum
Chemical Family: Petroleum Hydrocarbon

Responsible Party: VENOCO Inc.
6267 Carpinteria Ave
Suite 100
Carpinteria, California
93013-1423

For further information contact the Safety Department
8am - 4pm Pacific Time, Mon - Fri: 805-745-2100

EMERGENCY OVERVIEW

Emergency Telephone Number:
888-836-6261

Health Hazards: Contains and liberates poisonous hydrogen sulfide gas. Crude oil is a probable skin cancer hazard. Benzene, component, is a cancer hazard. Harmful if inhaled. Overexposure to components may cause damage to the blood and peripheral nervous system. Use ventilation adequate to keep exposures below recommended limits. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Do not taste or swallow. Wash thoroughly after handling.

Physical Hazards: Flammable liquid and vapor. Keep away from heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment).

< Physical Form: Liquid
< Appearance: Brown to dark black
< Odor: Hydrocarbon-rotten egg

NFPA HAZARD CLASS: Health: 2 (Moderate)

Flammability: 3 (High)
Reactivity: 0 (Least)

2. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS	% Weight	EXPOSURE GUIDELINE Limits	Agency	Type
Crude Oil (Petroleum) CAS# 8002-05-9	100	(See: Oil Mist, If Generated)		
Toluene CAS# 108-88-3	0-20	50 ppm 200 ppm 300 ppm 500 ppm	ACGIH OSHA OSHA OSHA. 10 min. peak; once per 8-hr shift	TWA-SKIN TWA CEIL
Xylenes CAS# 1330-20-7	0-20	100 ppm 150 ppm 100 ppm	ACGIH ACGIH OSHA	TWA STEL TWA
Ethyl Benzene CAS# 100-41-4	0-20	100 ppm 125 ppm 100 ppm	ACGIH ACGIH OSHA	TWA STEL TWA
n-Hexane CAS# 110-54-3	0-1.4	50 ppm 500 ppm	ACGIH OSHA	TWA-SKIN TWA
Cyclohexane CAS# 110-82-7	0-1.5	100 ppm 300 ppm	ACGIH OSHA	TWA TWA
Hydrogen Sulfide CAS# 7783-06-4	>1	10 ppm 15 ppm 20 ppm 50 ppm	ACGIH ACGIH OSHA OSHA 10 min. peak; once per 8-hr shift	TWA STEL CEIL
Sulfur CAS# 7704-34-9	>1	Not Established		

Benzene	0-2	0.5 ppm	ACGIH	TWA-SKIN
CAS# 71-43-2		2.5 ppm	ACGIH	STEL-SKIN
		1 ppm	OSHA	TWA
		5 ppm	OSHA	STEL
Oil Mist, If Generated		5 mg/m3	ACGIH	TWA
CAS# None		10 mg/m3	ACGIH	STEL
		5 mg/m3	OSHA	TWA

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Contains benzene. If exposure concentrations exceed the 0.5 ppm action limit, OSHA requirements for personal protective equipment, regulated areas and training may apply (29CFR 1910.1028). Also see Section 4.

3. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS:

Eye: Contact may cause mild eye irritation including stinging, watering and redness.

Skin: Contact may cause mild skin irritation including redness, and a burning sensation. Prolonged or repeated contact can worsen irritation by causing drying and cracking of the skin leading to dermatitis (inflammation). No harmful effects from skin absorption are expected.

Inhalation (Breathing): Toxic. May be harmful if inhaled. Contains and liberates poisonous hydrogen sulfide – see Other Comments section below.

Ingestion (Swallowing): Low degree of toxicity by ingestion. ASPIRATION HAZARD – This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Signs and Symptoms: Effects of overexposure may include irritation

of the nose, throat and digestive tract, nausea, vomiting, diarrhea, transient excitation followed by signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, and fatigue), coughing, runny nose, shortness of breath, chest pain, blurred vision, abdominal pain, muscle weakness, irregular heartbeats (arrhythmias), pulmonary edema (accumulation of fluids in the lungs), breathing difficulties, respiratory failure, convulsions, coma and death.

Cancer: Skin cancer hazard. A component is a known human cancer hazard (see Sections 11 and 14).

Target Organs: No data available for this material. Overexposure to components may cause injury to the blood elements and peripheral nervous systems (see Section 11). There is limited evidence from animal studies that overexposure may cause injury to the liver, kidney, sense of hearing, thyroid, central nervous system and male reproductive system.

Developmental: Potential hazards to the fetus (see Section 11).

Other Comments: This material may contain or liberate hydrogen sulfide, a poisonous gas with the smell of rotten eggs. The smell disappears rapidly because of olfactory fatigue so odor may not be a reliable indicator of exposure. Effects of overexposure include irritation of the eyes, nose, throat and respiratory tract, blurred vision, photophobia (sensitivity to light), and pulmonary edema (fluid accumulation in the lungs). Severe exposures can result in nausea, vomiting, muscle weakness or cramps, headache, disorientation and other signs of nervous system depression, irregular heartbeats, convulsions, respiratory failure, and death.

This material may contain polynuclear aromatic hydrocarbons (PNAs) which have been known to produce a phototoxic reaction when contaminated skin is exposed to sunlight. The effect is similar in appearance to an exaggerated sunburn, and is temporary in duration if exposure is discontinued. Continued exposure to sunlight can result in more serious skin problems including pigmentation (discoloration), skin eruptions (pimples) and possible skin cancers.

Allergic skin responses after repeated contact with sulfur have been reported but are not common.

Pre-Existing Medical Conditions: Conditions aggravated by exposure may include skin, respiratory (asthma-like), hearing, blood, liver, kidney, thyroid, male reproductive and peripheral and central nerve disorders.

Exposure to high concentrations of this material may increase the sensitivity of the heart to certain drugs. Persons with pre-existing heart disorders may be more susceptible to this effect (see Section 4 - Note to Physicians).

4. FIRST AID MEASURES

Eye: If irritation or redness develops, move victim away form exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: Wipe material from skin and remove contaminated shoes and clothing. Cleanse affected area(s) thoroughly by washing with mild soap and water and, if necessary, a waterless skin cleanser. If irritation or redness develops, seek medical attention.

Inhalation (Breathing): Immediately move victim away from exposure and into fresh air. If respiratory symptoms or other symptoms of exposure develop, seek immediate medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion (Swallowing): Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

Note To Physicians: This material may contain or liberate hydrogen sulfide. In high doses hydrogen sulfide may produce pulmonary edema and respiratory depression or paralysis. The first priority in treatment should be the establishment of adequate ventilation and the administration of 100% oxygen. If unresponsive to supportive care, nitrites may be an effective antidote.

Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents (e.g., in enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

Federal regulations (29CFR 1910.1028) specify medical surveillance programs for certain exposures to benzene above the action level or PEL (specified in Section (i)(1)(i) of the Standard). In addition, employees exposed in an emergency situation shall, as described in Section (i)(4)(i), provide a urine sample at the end of the shift for measurement of urine phenol.

5. FIRE FIGHTING MEASURES

Flammable Properties: Flash Point: <100°F
OSHA Flammability Class: Flammable Liquid
LEL: 0.9 / UEL: 7.0
Autoignition Temperature: No data

Unusual Fire & Explosion Hazards: This material is flammable and can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment). Vapors may travel considerable distances to a source of ignition where they can ignite, flashback, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

Fire Fighting Instructions: Long-duration fires involving crude oil stored in tanks may result in a boilover. The contents of the tank may be expelled beyond the containment dikes or ditches. All personnel should be kept back a safe distance when a boilover is anticipated (reference NFPA 11 or API 2021). For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self-contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Water spray may be useful in minimizing or dispersing vapors. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

Flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof equipment is recommended. Stay upwind and away from spill/release. Notify persons downwind of spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8). Prevent spilled material from entering sewers, storm drains, other unauthorized treatment drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Use foam on spills to minimize vapors (see Section 5). Spilled material may be absorbed into an appropriate absorbent material. Notify fire authorities and appropriate federal, state, and local

agencies. Immediate cleanup of any spill is recommended. If spill of any amount is make into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

7. HANDLING AND STORAGE

Handling: Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharge. The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-704 and/or API RP 2003 for specific bonding/grounding requirements. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Section 2 and 8). Wash thoroughly after handling. Do not wear contaminated clothing or shoes. Use good personal hygiene practice.

Before working on or in tanks which contain or have contained this material, refer to OSHA Regulations, ANSI Z49.1 and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

Storage: Keep container(s) tightly closed. In a tank, barge, or other closed container, the vapor space above materials that contain hydrogen sulfide (H2S) may result in concentrations immediately dangerous to life and health (IDLH). Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area “No Smoking or Open Flame.” Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the

established exposure limits (see Section 2), additional ventilation or exhaust systems may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

Personal Protective Equipment (PPE):

Respiratory: Wear a positive pressure air supplied respirator in situations where there may be potential for airborne exposure to H2S above exposure limits (see Section 2). H2S has poor warning properties, and appropriate air purifying cartridges are not commercially available. A NIOSH certified air purifying respirator with an organic vapor cartridge may be used under conditions where H2S is not detected, and airborne concentrations of hydrocarbons are expected to exceed exposure limits. Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a positive pressure air supplied respirator if there is a potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Skin: The use of gloves impermeable to the specific material handled is advised to prevent skin contact and possible irritation (see glove manufacturer literature for information on permeability).

Eye/Face: Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

Other Protective Equipment: A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

Suggestions for the use of specific protective materials are based on readily available published data. Users should

check with specific manufacturers to confirm the performance of their products.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).

Flash Point: <100°F
Flammable/Explosive Limits (%): LEU: 0.9 / UEL: 7.0
Autoignition Temperature: No data
Appearance: Brown to dark black
Physical State: Liquid
Odor: Hydrocarbon-rotten egg
pH: No data
Vapor Pressure (mm Hg): <12 psig
Vapor Density (air=1): >1
Boiling Point: Varies
Freezing/Melting Point: No data
Solubility in Water: Negligible
Specific Gravity: 17.0 to 40.0

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under normal conditions of storage and handling. Flammable liquid and vapor. Vapor can cause flash fire.

Conditions To Avoid: Avoid all possible sources of ignition (see Sections 5 & 7).

Incompatible Materials: Avoid contact with strong oxidizing agents.

Hazardous Decomposition Products: Combustion can yield carbon dioxide, carbon monoxide, hydrogen sulfide, other organic compounds and sulfur oxides.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Crude Oil (CAS# 8002-05-9)

Carcinogenicity: Chronic application of crude oil to mouse skin resulted in an increased incidence of skin tumors. IARC concluded in its Crude Oil Monograph that there is limited evidence of carcinogenicity in animals, and that crude oil is not classifiable as to its carcinogenicity in humans (Group 3). It has not been listed as a carcinogen by NTP or OSHA.

Developmental: Dermal exposure to crude oil during pregnancy resulted in limited evidence of developmental toxicity in laboratory animals. Decreased fetal weight and increased resorptions were noted at maternally toxic doses. No significant effects on pup growth or other developmental landmarks were observed postnatally.

Toluene (CAS# 108-88-3)

Target Organ(s): Epidemiology studies suggest that chronic occupational overexposure to toluene may damage color vision. Subchronic and chronic inhalation studies with toluene produced kidney and liver damage, hearing loss and central nervous system (brain) damage in laboratory animals. Intentional misuse by deliberate inhalation of high concentrations of toluene has been shown to cause liver, kidney, and central nervous system damage, including hearing loss and visual disturbances.

Developmental: Exposure to toluene during pregnancy has demonstrated limited evidence of developmental toxicity in laboratory animals. The effects seen include decreased fetal body weight and increased skeletal variations in both inhalation and oral studies.

Xylene (CAS# 1330-20-7)

Target Organ(s): A six week inhalation study with xylene produced hearing loss in rats.

Developmental: Both mixed xylenes and the individual isomers produced limited evidence of developmental toxicity in laboratory animals. Inhalation and oral administration of xylene resulted in decreased fetal weight, increased incidences

of delayed ossification, skeletal variations and resorptions.

Ethylbenzene (CAS# 100-41-4

Carcinogenicity: Rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study demonstrated limited evidence of kidney, liver, and lung cancer. Ethyl benzene has been listed as a possible human carcinogen by IARC. Ethyl benzene has not been listed as a carcinogen by NTP, or OSHA.

Target Organ(s): In rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study there was mild damage to the kidney (tubular hyperplasia), liver (eosinophilio foci, hypertrophy, necrosis), thyroid (hyperplasia) and pituitary (hyperplasia).

n-Hexane (CAS# 110-54-3)

Target Organ(s): Excess exposure to n-hexane can result in peripheral neuropathies. The initial symptoms are symmetrical sensory numbness and paresthesias of distal portions of the extremities. Motor weakness is typically observed in muscles of the toes and fingers but may also involve muscles of the arms, thighs and forearms. The onset of these symptoms may be delayed for several months to a year after the beginning of exposure. The neurotoxic properties of n-hexane are potentiated by exposure to methyl ethyl ketone and methyl isobutyl ketone. Prolonged exposure to high concentrations of n-hexane (>1,000 ppm) has resulted in decreased sperm count and degenerative changes in the testes of rats but not those of mice.

Benzene (CAS# 71-43-2)

Carcinogenicity: Benzene is an animal carcinogen and is known to produce leukemia in humans. Benzene has been identified as a human carcinogen by NTP, IARC and OSHA.

Target Organ(s): Prolonged or repeated exposures to benzene vapors has been linked to bone marrow toxicity which can result in blood disorders such as leukopenia, thrombocytopenia, and

aplastic anemia. All of these diseases can be fatal.

Developmental: Exposure to benzene during pregnancy demonstrated limited evidence of developmental toxicity in laboratory animals. The effects seen include decreased body weight and increased skeletal variations in rodents. Alterations in hematopoeisis have been observed in the fetuses and offspring of pregnant mice.

12. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, would be a RCRA "characteristic" hazardous waste due to the characteristic(s) of ignitability (D001), benzene (D018) and possibly reactivity (D003). If the material is spilled to soil or water, characteristic testing of the contaminated materials is recommended. Further, this material, once it becomes a waste, is subject to the land disposal restriction in 40 CFR 268.40 and may require treatment prior to disposal to meet specific standards. Consult state and local regulations to determine whether they are more stringent than the federal requirements.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

13. TRANSPORT INFORMATION

DOT Proper Shipping Name / Technical Name: Petroleum Crude Oil
Hazard Class or Division: 3
ID #: UN1267
Packing Group: I

14. REGULATORY INFORMATION

This material contains the following chemicals subject to the

reporting requirements of **SARA 313** and 40 CFR 372:

COMPONENT	CAS NUMBER	WEIGHT %
Hydrogen Sulfide	7783-06-4	>1
Toluene	108-88-3	0-20
Xylenes	1330-20-7	0-20
Ethyl Benzene	100-41-4	0-20
n-Hexane	110-54-3	0-1.4
Cyclohexane	110-82-7	0-1.5
Benzene	71-43-2	0-2

Warning: This material contains the following chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of **California Proposition 65** (CA Health & Safety Code Section 25249.5):

COMPONENT	EFFECT
Benzene	Cancer, Developmental and Reproductive Toxicant
Toluene	Developmental Toxicant
Various Polycyclic Aromatic Hydrocarbons	Skin Cancer

This material has not been identified as a carcinogen by NTP or OSHA. Crude oil has been identified as a Group 3 carcinogen by IARC.

EPA (CERCLA) Reportable Quantity:
----None----

15. DOCUMENTARY INFORMATION

Issue Date: 09/27/04
Previous Issue Date: None

16. DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

The information in this document is believed to be correct as of the date issued. **HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THIS INFORMATION, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE**. This information and product are

furnished on the condition that the person receiving them shall make his own determination as to the suitability of the product for his particular purpose and on the condition that he assume the risk of his use thereof.

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Crude Oil – Sweet
Synonyms: Sweet Crude – Sweet Oil – Petroleum
Generic Name: Petroleum
Chemical Family: Petroleum Hydrocarbon

Responsible Party: VENOCO Inc.
6267 Carpinteria Ave
Suite 100
Carpinteria, California
93013-1423

For further information contact the Safety Department
8am - 4pm Pacific Time, Mon - Fri: 805-745-2100

EMERGENCY OVERVIEW

Emergency Telephone Number:
888-836-6261

Health Hazards: Contains and liberates poisonous hydrogen sulfide gas. Crude oil is a probable skin cancer hazard. Benzene, component, is a cancer hazard. Harmful if inhaled. Overexposure to components may cause damage to the blood and peripheral nervous system. Use ventilation adequate to keep exposures below recommended limits. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Do not taste or swallow. Wash thoroughly after handling.

Physical Hazards: Flammable liquid and vapor. Keep away from heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment).

< Physical Form: Liquid
< Appearance: Brown to dark black
< Odor: Hydrocarbon-rotten egg

NFPA HAZARD CLASS: Health: 2 (Moderate)

Flammability: 3 (High)
Reactivity: 0 (Least)

2. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS	% Weight	EXPOSURE GUIDELINE		
		Limits	Agency	Type
Crude Oil (Petroleum) CAS# 8002-05-9	100	(See: Oil Mist, If Generated)		
Toluene CAS# 108-88-3	0-20	50 ppm 200 ppm 300 ppm 500 ppm	ACGIH OSHA OSHA OSHA. 10 min. peak; once per 8-hr shift	TWA-SKIN TWA CEIL
Xylenes CAS# 1330-20-7	0-20	100 ppm 150 ppm 100 ppm	ACGIH ACGIH OSHA	TWA STEL TWA
Ethyl Benzene CAS# 100-41-4	0-20	100 ppm 125 ppm 100 ppm	ACGIH ACGIH OSHA	TWA STEL TWA
n-Hexane CAS# 110-54-3	0-1.4	50 ppm 500 ppm	ACGIH OSHA	TWA-SKIN TWA
Cyclohexane CAS# 110-82-7	0-1.5	100 ppm 300 ppm	ACGIH OSHA	TWA TWA
Hydrogen Sulfide CAS# 7783-06-4	Varies (<1)	10 ppm 15 ppm 20 ppm 50 ppm	ACGIH ACGIH OSHA OSHA 10 min. peak; once per 8-hr shift	TWA STEL CEIL
Benzene CAS# 71-43-2	0-2	0.5 ppm 2.5 ppm 1 ppm	ACGIH ACGIH OSHA	TWA-SKIN STEL-SKIN TWA

	5 ppm	OSHA	STEL
Oil Mist, If Generated	5 mg/m3	ACGIH	TWA
CAS# None	10 mg/m3	ACGIH	STEL
	5 mg/m3	OSHA	TWA

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Contains benzene. If exposure concentrations exceed the 0.5 ppm action limit, OSHA requirements for personal protective equipment, regulated areas and training may apply (29CFR 1910.1028). Also see Section 4.

3. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS:

Eye: Contact may cause mild eye irritation including stinging, watering and redness.

Skin: Contact may cause mild skin irritation including redness, and a burning sensation. Prolonged or repeated contact can worsen irritation by causing drying and cracking of the skin leading to dermatitis (inflammation). No harmful effects from skin absorption are expected.

Inhalation (Breathing): Low to moderate degree of toxicity by inhalation.

May contain or liberate poisonous hydrogen sulfide – see Other Comments section below.

Ingestion (Swallowing): Low degree of toxicity by ingestion. ASPIRATION HAZARD – This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Signs and Symptoms: Effects of overexposure may include irritation of the nose, throat and digestive tract, nausea, vomiting, diarrhea, transient excitation followed by signs of nervous

system depression (e.g., headache, drowsiness, dizziness, loss of coordination, and fatigue), coughing, runny nose, shortness of breath, chest pain, blurred vision, abdominal pain, muscle weakness, irregular heartbeats (arrhythmias), pulmonary edema (accumulation of fluids in the lungs), breathing difficulties, respiratory failure, convulsions, coma and death.

Cancer: Skin cancer hazard. A component is a known human cancer hazard (see Sections 11 and 14).

Target Organs: No data available for this material. Overexposure to components may cause injury to the blood elements and peripheral nervous systems (see Section 11). There is limited evidence from animal studies that overexposure may cause injury to the liver, kidney, sense of hearing, thyroid, central nervous system and male reproductive system.

Developmental: Potential hazards to the fetus (see Section 11).

Other Comments: This material may contain or liberate hydrogen sulfide, a poisonous gas with the smell of rotten eggs. The smell disappears rapidly because of olfactory fatigue so odor may not be a reliable indicator of exposure. Effects of overexposure include irritation of the eyes, nose, throat and respiratory tract, blurred vision, photophobia (sensitivity to light), and pulmonary edema (fluid accumulation in the lungs). Severe exposures can result in nausea, vomiting, muscle weakness or cramps, headache, disorientation and other signs of nervous system depression, irregular heartbeats, convulsions, respiratory failure, and death.

This material may contain polynuclear aromatic hydrocarbons (PNAs) which have been known to produce a phototoxic reaction when contaminated skin is exposed to sunlight. The effect is similar in appearance to an exaggerated sunburn, and is temporary in duration if exposure is discontinued. Continued exposure to sunlight can result in more serious skin problems including pigmentation (discoloration), skin eruptions (pimples) and possible skin cancers.

Pre-Existing Medical Conditions: Conditions aggravated by exposure

may include skin, respiratory (asthma-like), hearing, blood, liver, kidney, thyroid, male reproductive and peripheral and central nerve disorders.

Exposure to high concentrations of this material may increase the sensitivity of the heart to certain drugs. Persons with pre-existing heart disorders may be more susceptible to this effect (see Section 4 - Note to Physicians).

4. FIRST AID MEASURES

Eye: If irritation or redness develops, move victim away form exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: Wipe material from skin and remove contaminated shoes and clothing. Cleanse affected area(s) thoroughly by washing with mild soap and water and, if necessary, a waterless skin cleanser. If irritation or redness develops, seek medical attention.

Inhalation (Breathing): Immediately move victim away from exposure and into fresh air. If respiratory symptoms or other symptoms of exposure develop, seek immediate medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion (Swallowing): Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

Note To Physicians: This material may contain or liberate hydrogen sulfide. In high doses hydrogen sulfide may produce pulmonary edema and respiratory depression or paralysis. The first priority in treatment should be the establishment of adequate ventilation and the administration of 100% oxygen. If

unresponsive to supportive care, nitrites may be an effective antidote.

Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents (e.g., in enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

Federal regulations (29CFR 1910.1028) specify medical surveillance programs for certain exposures to benzene above the action level or PEL (specified in Section (i)(1)(i) of the Standard). In addition, employees exposed in an emergency situation shall, as described in Section (i)(4)(i), provide a urine sample at the end of the shift for measurement of urine phenol.

5. FIRE FIGHTING MEASURES

Flammable Properties: Flash Point: <100°F
OSHA Flammability Class: Flammable Liquid
LEL: 0.9 / UEL: 7.0
Autoignition Temperature: No data

Unusual Fire & Explosion Hazards: This material is flammable and can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment). Vapors may travel considerable distances to a source of ignition where they can ignite, flashback, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters. Carbon dioxide can displace oxygen.

Use caution when applying carbon dioxide in confined spaces.

Fire Fighting Instructions: Long-duration fires involving crude oil stored in tanks may result in a boilover. The contents of the tank may be expelled beyond the containment dikes or ditches. All personnel should be kept back a safe distance when a boilover is anticipated (reference NFPA 11 or API 2021). For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self-contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Water spray may be useful in minimizing or dispersing vapors. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

Flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof equipment is recommended. Stay upwind and away from spill/release. Notify persons downwind of spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8). Prevent spilled material from entering sewers, storm drains, other unauthorized treatment drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Use foam on spills to minimize vapors (see Section 5). Spilled material may be absorbed into an appropriate absorbent material. Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is make into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

7. HANDLING AND STORAGE

Handling: Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharge. The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-704 and/or API RP 2003 for specific bonding/grounding requirements. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Section 2 and 8). Wash thoroughly after handling. Do not wear contaminated clothing or shoes. Use good personal hygiene practice.

Before working on or in tanks which contain or have contained this material, refer to OSHA Regulations, ANSI Z49.1 and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

Storage: Keep container(s) tightly closed. In a tank, barge, or other closed container, the vapor space above materials that contain hydrogen sulfide (H2S) may result in concentrations immediately dangerous to life and health (IDLH). Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area “No Smoking or Open Flame.” Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional ventilation or exhaust systems may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

Personal Protective Equipment (PPE):

Respiratory: Wear a positive pressure air supplied respirator in situations where there may be potential for airborne exposure to H2S above exposure limits (see Section 2). H2S has poor warning properties, and appropriate air purifying cartridges are not commercially available. A NIOSH certified air purifying respirator with an organic vapor cartridge may be used under conditions where H2S is not detected, and airborne concentrations of hydrocarbons are expected to exceed exposure limits. Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a positive pressure air supplied respirator if there is a potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Skin: The use of gloves impermeable to the specific material handled is advised to prevent skin contact and possible irritation (see glove manufacturer literature for information on permeability).

Eye/Face: Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

Other Protective Equipment: A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

Suggestions for the use of specific protective materials are based on readily available published data. Users should check with specific manufacturers to confirm the performance of their products.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).

Flash Point: <100°F
Flammable/Explosive Limits (%): LEU: 0.9 / UEL: 7.0
Autoignition Temperature: No data
Appearance: Brown to dark black
Physical State: Liquid
Odor: Hydrocarbon-rotten egg
pH: No data
Vapor Pressure (mm Hg): <12 psig
Vapor Density (air=1): >1
Boiling Point: Varies
Freezing/Melting Point: No data
Solubility in Water: Negligible
Specific Gravity: 17.0-40.0

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under normal conditions of storage and handling. Flammable liquid and vapor. Vapor can cause flash fire.

Conditions To Avoid: Avoid all possible sources of ignition (see Sections 5 & 7).

Incompatible Materials: Avoid contact with strong oxidizing agents.

Hazardous Decomposition Products: Combustion can yield carbon dioxide, carbon monoxide, hydrogen sulfide, other organic compounds and sulfur oxides.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Crude Oil (CAS# 8002-05-9)

Carcinogenicity: Chronic application of crude oil to mouse skin

resulted in an increased incidence of skin tumors. IARC concluded in its Crude Oil Monograph that there is limited evidence of carcinogenicity in animals, and that crude oil is not classifiable as to its carcinogenicity in humans (Group 3). It has not been listed as a carcinogen by NTP or OSHA.

Developmental: Dermal exposure to crude oil during pregnancy resulted in limited evidence of developmental toxicity in laboratory animals. Decreased fetal weight and increased resorptions were noted at maternally toxic doses. No significant effects on pup growth or other developmental landmarks were observed postnatally.

Toluene (CAS# 108-88-3)

Target Organ(s): Epidemiology studies suggest that chronic occupational overexposure to toluene may damage color vision. Subchronic and chronic inhalation studies with toluene produced kidney and liver damage, hearing loss and central nervous system (brain) damage in laboratory animals. Intentional misuse by deliberate inhalation of high concentrations of toluene has been shown to cause liver, kidney, and central nervous system damage, including hearing loss and visual disturbances.

Developmental: Exposure to toluene during pregnancy has demonstrated limited evidence of developmental toxicity in laboratory animals. The effects seen include decreased fetal body weight and increased skeletal variations in both inhalation and oral studies.

Xylene (CAS# 1330-20-7)

Target Organ(s): A six week inhalation study with xylene produced hearing loss in rats.

Developmental: Both mixed xylenes and the individual isomers produced limited evidence of developmental toxicity in laboratory animals. Inhalation and oral administration of xylene resulted in decreased fetal weight, increased incidences of delayed ossification, skeletal variations and resorptions.

Ethylbenzene (CAS# 100-41-4

Carcinogenicity: Rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study demonstrated limited evidence of kidney, liver, and lung cancer. Ethyl benzene has been listed as a possible human carcinogen by IARC. Ethyl benzene has not been listed as a carcinogen by NTP, or OSHA.

Target Organ(s): In rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study there was mild damage to the kidney (tubular hyperplasia), liver (eosinophilio foci, hypertrophy, necrosis), thyroid (hyperplasia) and pituitary (hyperplasia).

n-Hexane (CAS# 110-54-3)

Target Organ(s): Excess exposure to n-hexane can result in peripheral neuropathies. The initial symptoms are symmetrical sensory numbness and paresthesias of distal portions of the extremities. Motor weakness is typically observed in muscles of the toes and fingers but may also involve muscles of the arms, thighs and forearms. The onset of these symptoms may be delayed for several months to a year after the beginning of exposure. The neurotoxic properties of n-hexane are potentiated by exposure to methyl ethyl ketone and methyl isobutyl ketone. Prolonged exposure to high concentrations of n-hexane (>1,000 ppm) has resulted in decreased sperm count and degenerative changes in the testes of rats but not those of mice.

Benzene (CAS# 71-43-2)

Carcinogenicity: Benzene is an animal carcinogen and is known to produce leukemia in humans. Benzene has been identified as a human carcinogen by NTP, IARC and OSHA.

Target Organ(s): Prolonged or repeated exposures to benzene vapors has been linked to bone marrow toxicity which can result in blood disorders such as leukopenia, thrombocytopenia, and aplastic anemia. All of these diseases can be fatal.

Developmental: Exposure to benzene during pregnancy demonstrated limited evidence of developmental toxicity in laboratory animals. The effects seen include decreased body weight and increased skeletal variations in rodents. Alterations in hematopoeisis have been observed in the fetuses and offspring of pregnant mice.

12. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, would be a RCRA "characteristic" hazardous waste due to the characteristic(s) of ignitability (D001), benzene (D018) and possibly reactivity (D003). If the material is spilled to soil or water, characteristic testing of the contaminated materials is recommended. Further, this material, once it becomes a waste, is subject to the land disposal restriction in 40 CFR 268.40 and may require treatment prior to disposal to meet specific standards. Consult state and local regulations to determine whether they are more stringent than the federal requirements.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

13. TRANSPORT INFORMATION

DOT Proper Shipping Name / Technical Name: Petroleum Crude Oil
Hazard Class or Division: 3
ID #: UN1267
Packing Group: I

14. REGULATORY INFORMATION

This material contains the following chemicals subject to the reporting requirements of **SARA 313** and 40 CFR 372:

COMPONENT	CAS NUMBER	WEIGHT %
Hydrogen Sulfide	7783-06-4	>1
Toluene	108-88-3	0-20
Xylenes	1330-20-7	0-20
Ethyl Benzene	100-41-4	0-20
n-Hexane	110-54-3	0-1.4
Cyclohexane	110-82-7	0-1.5
Benzene	71-43-2	0-2

Warning: This material contains the following chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of **California Proposition 65** (CA Health & Safety Code Section 25249.5):

COMPONENT	EFFECT
Benzene	Cancer, Developmental and Reproductive Toxicant
Toluene	Developmental Toxicant
Various Polycyclic Aromatic Hydrocarbons	Skin Cancer

This material has not been identified as a carcinogen by NTP or OSHA. Crude oil has been identified as a Group 3 carcinogen by IARC.

EPA (CERCLA) Reportable Quantity:
----None----

15. DOCUMENTARY INFORMATION

Issue Date: 09/27/04
Previous Issue Date: None

16. DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

The information in this document is believed to be correct as of the date issued. **HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THIS INFORMATION, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE**. This information and product are furnished on the condition that the

person receiving them shall make his own determination as to the suitability of the product for his particular purpose and on the condition that he assume the risk of his use thereof.

This appendix includes the following equipment lists:

- Venoco, Inc.
- Clean Seas
- NRC

VENOCO RESPONSE EQUIPMENT

Ellwood Onshore Facility:

- absorbent pads, 3M, T-156, 18 inch x 18 inch x 3/8 inch (4 bales)
- T-270, 3M, absorbent boom (4 8-foot booms)
- 50-foot sections containment boom, 6-inch x 12-inch Simplex 18-inch American Marine
- line pipe, 6 5/8 ft x .280 wall x 5-ft long, Toe G.R.-B
- 6-inch 150# asbestos ring gasket
- 6-inch full coupling threaded (1)
- 6-inch 150# slip-on R.F.F.S. (1)
- 6-inch, 150# gate valve R.F.F.E. "Crane" (1)
- 3/4-inch x 3 3/4-inch B-7 stud bolts with hex nuts (8)
- 6-mil Visquene, 20 ft x 100 ft (2 rolls)
- poly bags, Hefty steel sack (1 case)
- punt rakes (5)
- square point shovels (5)
- eye protection, glasses and goggles (12)
- PVC rain suits (6)
- PVC boots and gloves (6 pairs each)
- duct tape (6 rolls)
- barrier tape (2 rolls)
- sledge hammer (1)
- 5-foot metal stakes (4)
- metal buckets (2)
- explosion-proof flashlights with batteries (6)
- fire extinguishers (2)
- drinking water (2 cases)
- first aid kits (2)
- approx. 3-gal plastic pans (2)
- approx. 20-gal plastic tubs (2)
- Simple Green soap (1 quart)
- 5-foot by 8-foot enclosed utility trailer
- Satellite phone **(Located in Ellwood Onshore Facility Control Room)**

Ellwood Pier:

- absorbent boom (3M Type 270 Powersorb, 2 bales with 4 8-foot booms per bale)
- absorbent pads (3M HP-156 High Performance, 1 bale with 100 pads each 17" x 19")

Platform Holly:

- Expandi 4300 boom (1,700 feet)
- absorbent pads (3M HP-156 High Performance, 3 bale each with 100 pads 17" x 19")
- Boston Whaler (boom support boat)

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CLEAN SEAS, LLC
2014 RESPONSE EQUIPMENT LIST

MARINE CONTAINMENT AND RECOVERY PLATFORMS
OSRVs / SRVs /OSRB

Location	Type	Model	Warehoused	Quantity / Capacity	Manufacturer
OCEAN SCOUT	Vessel	65' x 22' OSRV	Santa Barbara Channel	1	ROZEMA Boatworks
	Boom - Ocean	43" Kepner Reel Pack	OCEAN SCOUT	1500'	Kepner
	Boom - Sweep	LAMOR Sweep	OCEAN SCOUT	2 / 36'	LAMOR
	Storage -TSC	Internal Tanks	OCEAN SCOUT	215 bbl.	w/ Offload Pump
	Skimmer-LAMOR	3 Chain Brush	OCEAN SCOUT	3710 edrc	LAMOR
	Skimmer-LAMOR	3 Chain Brush	OCEAN SCOUT	3710 edrc	LAMOR
	Pump - Offloading	GT-A50	OCEAN SCOUT	388 bph.	LAMOR
	Crane	Deck Mounted	OCEAN SCOUT	1/4.5 Ton	ESI, LLC
	FLIR Camera	M-Series	OCEAN SCOUT	1	FLIR
	Absorbent Boom	8"	OCEAN SCOUT	5 @ 40'= 200'	3-m
	Dispersant	9500	OCEAN SCOUT	250 gallons	Nalcool
	Inagrated Dispersant System	Application System	OCEAN SCOUT	AFEDO Nozzle	Ayles Fernie
	Site Entry Kit	4 gas/benzene chip	OCEAN SCOUT	1	Industrial Sc./Draeger
	Satellite Tracking Buoy #7552	Fastwave Pathfinder	OCEAN SCOUT	1	Fastwave
	Radios	P 400	OCEAN SCOUT	3/ 158.445 + VHF marine	Motorola
	Radios	VHF Base	OCEAN SCOUT	1/ 158.445 + VHF marine	Motorola
	Radios	VHF Mobile	OCEAN SCOUT	Marine	Motorola
	Cell # 805 844-4942	NA	OCEAN SCOUT	1	Verizon
	Computer w/ Brdbnd crd.	na	OCEAN SCOUT	1	Dell /ATT

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CLEAN SEAS, LLC
2014 RESPONSE EQUIPMENT LIST
OSRVs / SRVs /OSRB (continued)

Location	Type	Model	Warehoused	Quantity / Capacity	Manufacturer
OCEAN GUARDIAN	Vessel	65' x 22' OSRV	Santa Barbara Channel	1	ROZEMA Boatworks
	Boom - Ocean	43" Kepner Reel Pack	OCEAN GUARDIAN	1500'	Kepner
	Boom - Sweep	LAMOR Sweep	OCEAN GUARDIAN	2 / 36'	LAMOR
	Storage -TSC	Internal Tanks	OCEAN GUARDIAN	215 bbl.	w/ Offload Pump
	Skimmer-LAMOR	3 Chain Brush	OCEAN GUARDIAN	3710 edrc	LAMOR
	Skimmer-LAMOR	3 Chain Brush	OCEAN GUARDIAN	3710 edrc	LAMOR
	Pump - Offloading	GT-A50	OCEAN GUARDIAN	388 bph.	LAMOR
	Crane	Deck Mounted	OCEAN GUARDIAN	1/4.5 Ton	ESI, LLC
	FLIR Camera	M-Series	OCEAN GUARDIAN	1	FLIR
	Absorbent Boom	8"	OCEAN GUARDIAN	5 @ 40'= 200'	3-m
	Dispersant	9500	OCEAN GUARDIAN	250 gallons	Nalcool
	Inagrated Dispersant System	Application System	OCEAN GUARDIAN	AFEDO Nozzle	Ayles Fernie
	Site Entry Kit	4 gas/benzene chip	OCEAN GUARDIAN	1	Industrial Sc./Draeger
	Satellite Tracking Buoy #7521	Fastwave Pathfinder	OCEAN GUARDIAN	1	Fastwave
	Radios	P 400	OCEAN GUARDIAN	3/ 158.445 + VHF marine	Motorola
	Radios	VHF Base	OCEAN GUARDIAN	1/ 158.445 + VHF marine	Motorola
	Radios	VHF Mobile	OCEAN GUARDIAN	Marine	Motorola
	Cell # 805 844-4942	NA	OCEAN GUARDIAN	1	Verizon
	Computer w/ Brdbnd crd.	na	OCEAN GUARDIAN	1	Dell /ATT

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CLEAN SEAS, LLC
2014 RESPONSE EQUIPMENT LIST
OSRVs / SRVs /OSRB (continued)

Location					
OCEAN SENTINEL	Vessel	65' x 22' OSRV	Santa Barbara Channel	1	ROZEMA Boatworks
	Boom - Ocean	43" Kepner Reel Pack	OCEAN SENTINEL	1500'	Kepner
	Boom - Sweep	LAMOR Sweep	OCEAN SENTINEL	2 / 36'	LAMOR
	Storage -TSC	Internal Tanks	OCEAN SENTINEL	215 bbl.	w/ Offload Pump
	Skimmer-LAMOR	3 Chain Brush	OCEAN SENTINEL	3710 edrc	LAMOR
	Skimmer-LAMOR	3 Chain Brush	OCEAN SENTINEL	3710 edrc	LAMOR
	Pump - Offloading	GT-A50	OCEAN SENTINEL	388 bph.	LAMOR
	Crane	Deck Mounted	OCEAN SENTINEL	1/4.5 Ton	ESI, LLC
	FLIR Camera	M-Series	OCEAN SENTINEL	1	FLIR
	Absorbent Boom	8"	OCEAN SENTINEL	5 @ 40'= 200'	3-m
	Dispersant	9500	OCEAN SENTINEL	250 gallons	Nalcool
	Inagrated Dispersant System	Application System	OCEAN SENTINEL	AFEDO Nozzle	Ayles Fernie
	Site Entry Kit	4 gas/benzene chip	OCEAN SENTINEL	1	Industrial Sc./Draeger
	Satellite Tracking Buoy #7553	Fastwave Pathfinder	OCEAN SENTINEL	1	Fastwave
	Radios	P 400	OCEAN SENTINEL	3/ 158.445 + VHF marine	Motorola
	Radios	VHF Base	OCEAN SENTINEL	1/ 158.445 + VHF marine	Motorola
	Cell # 805 844-4942	NA	OCEAN SENTINEL	1	Verizon
	Cell # 805 680-8962	N/A	OCEAN SENTINEL	1	Verizon
	Computer w/ Brdbnd crd.	na	OCEAN SENTINEL	1	Dell /ATT

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CLEAN SEAS, LLC
2014 RESPONSE EQUIPMENT LIST
OSRVs / SRVs /OSRB (continued)

Location	Type	Model	Warehoused	Quantity / Capacity	Manufacturer
OCEAN DEFENDER	Boom - Ocean	43" Kepner Reel Pack	OCEAN DEFENDER	1500'	Kepner
	Boom - Sweep	LAMOR Sweep	OCEAN DEFENDER	2 / 36'	LAMOR
	Storage -TSC	Internal Tanks	OCEAN DEFENDER	215 bbl.	w/ Offload Pump
	Skimmer-LAMOR	3 Chain Brush	OCEAN DEFENDER	3710 edrc	LAMOR
	Skimmer-LAMOR	3 Chain Brush	OCEAN DEFENDER	3710 edrc	LAMOR
	Pump - Offloading	GT-A50	OCEAN DEFENDER	388 bph.	LAMOR
	Crane	Deck Mounted	OCEAN DEFENDER	1/4.5 Ton	ESI, LLC
	FLIR Camera	M-Series	OCEAN DEFENDER	1	FLIR
	Absorbent Boom	8"	OCEAN DEFENDER	5 @ 40'= 200'	3-m
	Dispersant	9500	OCEAN DEFENDER	250 gallons	Nalcool
	Inagrated Dispersant System	Application System	OCEAN DEFENDER	AFEDO Nozzle	Ayles Fernie
	Site Entry Kit	4 gas/benzene chip	OCEAN DEFENDER	1	Industrial Sc./Draeger
	Satellite Tracking Buoy #7550	Fastwave Pathfinder	OCEAN DEFENDER	1	Fastwave
	Radios	P 400	OCEAN DEFENDER	3/ 158.445 + VHF marine	Motorola
	Radios	VHF Base	OCEAN DEFENDER	1/ 158.445 + VHF marine	Motorola
	Radios	VHF Mobile	OCEAN DEFENDER	Marine	Motorola
	Cell # 805 844-4942	NA	OCEAN DEFENDER	1	Verizon
	Computer w/ Brdbnd crd.	na	OCEAN DEFENDER	1	Dell /ATT

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CLEAN SEAS, LLC
2014 RESPONSE EQUIPMENT LIST

Location	Type	Model	Warehoused	Quantity / Capacity	Manufacturer
OCEAN KEEPER	Barge	181' x 56' x 14'	Santa Barbara Channel	1	NA
	Boom - Ocean	60" Reel Pack	OCEAN KEEPER	3000	Kepner
	Boom - Ocean	43" Roto-Pack	OCEAN KEEPER	3500'	Oil Stop
	Skimmer-LAMOR	LAMOR 4 BRUSH	OCEAN KEEPER	2 @ 9904	LAMOR
	Pump	DOP 250	OCEAN KEEPER	10/629	Desmi
	Storage -TSC	Internal Tanks	OCEAN KEEPER	15000	NA
	Crane	HP 50	OCEAN KEEPER	15 ton	Hydro Pro

Location	Type	Model	Warehoused	Quantity / Capacity	Manufacturer
CLEAN SWEEP	Vessel	32' x 11' SRV	Ventura Harbor	1	Kvickak Marine
	Boom	26" Sweep Boom	Ventura Harbor	30'	Lamor
	Storage -TSC	Internal Tanks	Ventura Harbor	29 bbls	Kvickak Marine
	Skimmer	LAMOR 3 BRUSH	Ventura Harbor	3710 edrc	Lamor
	Site Entry Kit	4 gas/benzene chip	Ventura Harbor	1	Industrial Sc./Draeger
	Radios	VHF Base	Ventura Harbor	1/ 158.445 + VHF marine	Motorola
	Radios	VHF Mobile	Ventura Harbor	Marine	Motorola

MARINE BOOMING / SUPPORT VESSELS					
Location	**Type**	**Model**	**Warehoused**	**Quantity / Capacity**	**Manufacturer**
AJAX	Boat	32' x 8'	Carpinteria Support Yar	1	WorkBoats N.W.
COMET	Boat	32' x 8'	Santa Barbara harbor	1	WorkBoats N.W.
RHIB COJO	Boat	18' x 7.5'	Carpinteria Support Yar	1	Rib Craft
RHIB RINCON	Boat	18' x 7.5'	Carpinteria Support Yar	1	Willard
SEA ARK	Boat	21' x 7.5'	Carpinteria Support Yar	1	Sea Ark Boats

OCEAN BOOM					
Location	**Type**	**Model**	**Warehoused**	**Quantity (Feet)**	**Manufacturer**
CS Yard	Boom - Ocean	43" SPI auto-boom	Carpinteria Support Yar	5400'	Oil Stop
CS Yard Conex # 40-1	Boom - Ocean	43" OOFF	Carpinteria Support Yar	1500'	CCB company
CS Yard Conex # 40-1	Boom - Ocean	43" OOFF	Carpinteria Support Yar	1500'	CCB company
CS Yard Conex # 40-2	Boom - Ocean	43" OOFF	Carpinteria Support Yar	1500'	CCB company
CS Yard Spare Reel	Boom - Ocean	43" Kepner Reel Pack	Carpinteria Support Yard	1500'	Kepner

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CLEAN SEAS, LLC
2014 RESPONSE EQUIPMENT LIST

STORAGE - Towable Storage Bladders, Rigid Hull Dracones & Portable Land based					
Location	**Type**	**Model**	**Warehoused**	**Quantity / Capacity**	**Manufacturer**
CS Yard	Storage - TSB	Kepner 120	Carpinteria Support Yar	3 @120 bbls =360 bbl	Kepner Plastics
CS Yard	Storage - TSB	Kepner 590	Carpinteria Support Yar	1 @590 bbl	Kepner Plastics
CS Yard	Storage - TSB	Kepner 28	Carpinteria Support Yar	4 @ 28 bbl = 112 bbl	Kepner Plastics
CS Yard	Storage - TSB	Dunlop Dracone	Carpinteria Support Yar	1 @ 140 bbl	Dunlop UK.
CS Yard	Storage - Rigid Dracone	Eagle alum barge	Carpinteria Support Yar	4 @ 100 bbl = 400 bbl	Eagle Marine
CS Yard	Storage - Rigid Dracone	Eagle alum barge	Carpinteria Support Yar	4 @ 100 bbl = 400 bbl	Eagle Marine
CS Yard	Storage - Rigid Dracone	CS 249	Carpinteria Support Yar	1 @ 249 bbl	Rozema
CONEX 20-11	Storage - Portable Land	FASTANK	Carpinteria Support Yar	12 @ 57 bbl = 684 bbl	FASTANK
		Total (Non OSRV/SRV) Temporary Storage		**2935 bbl**	

SKIMMERS - Open Ocean, Nearshore & Inland					
Location	**Type**	**Model**	**Warehoused**	**Capacity/EDRC**	**Manufacturer**
Building #2	Weir	Terminator	Carpinteria Support Yar	3017	Desmi
Building #2	Weir	Terminator	Carpinteria Support Yar	3017	Desmi
CONEX # 20-6	Oleophilic Brush	2 Brush	Carpinteria Support Yar	2472	Lamor Corp.
CONEX # 20-6	Oleophilic Brush	2 Brush	Carpinteria Support Yar	2472	Lamor Corp.
CONEX # 20-6	Oleophilic Brush	2 Brush	Carpinteria Support Yar	2472	Lamor Corp.
CONEX # 20-6	Oleophilic Brush	2 Brush	Carpinteria Support Yar	2472	Lamor Corp.
CONEX # 40-8	Oleophilic Brush	5 Brush	Carpinteria Support Yar	6182	Lamor Corp.
CONEX # 40-8	Oleophilic Brush	5 Brush	Carpinteria Support Yar	6182	Lamor Corp.
Building #2	Weir	GT-185	Carpinteria Support Yar	1371	Pharo Marine
Building #2	Weir	GT-185	Carpinteria Support Yar	1371	Pharo Marine
Building #2	Weir	GT-185	Carpinteria Support Yar	1371	Pharo Marine
Car Trailer	Weir	GT-185	Carpinteria Support Yar	1371	Pharo Marine
Car Trailer	Weir	GT-185	Carpinteria Support Yar	1371	Pharo Marine
GT-185 Trailer	Weir	GT-185	Carpinteria Support Yar	1371	Pharo Marine
Building #2	Weir	GT-260	Carpinteria Support Yar	3019	Pharo Marine
CONEX 40-11	Drum/Weir	Roto-30	Carpinteria Support Yar	3017	Roto-Trading
CONEX 40-11	Drum/Weir	Roto-30	Carpinteria Support Yar	3017	Roto-trading
			Total EDRC Recovery	**45,565**	

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CLEAN SEAS, LLC
2014 RESPONSE EQUIPMENT LIST

PUMPS - Transfer & Offloading

Location	Type	Model	Warehoused	Capacity / BPH	Manufacturer
CS Yard FT	Pump	FRAMO TK150	Carpinteria Support Yar	2571	Frank Moen
CS Yard FT	Pump	FRAMO TK150	Carpinteria Support Yar	2571	Frank Moen
CS Yard FT	Pump	DOP 250	Carpinteria Support Yar	629	Desmi
Building #2	Pump	Master	Carpinteria Support Yar	125	Master
RT # 1	Pump	Master	Carpinteria Support Yar	125	Master
RT # 2	Pump	Master	Carpinteria Support Yar	125	Master
			Total Pumping Capacity	**6146**	

SHORELINE PROTECTION BOOM -Inland / Nearshore

Location	Type	Model	Warehoused	Quantity (Feet)	Manufacturer
BT # 1 (Boom Trailer)	Boom (swamp)	10"	Carpinteria Support Yar	3000'	Oil Stop
BT # 2 (Boom Trailer)	Boom slide connectors	20"	Carpinteria Support Yar	1500'	kepner
BT # 3 (Boom Trailer)	Boom slide connectors	20"	Carpinteria Support Yar	1500	Kepner
BT # 4 (Boom Trailer)	Boom	20"	Carpinteria Support Yar	1500	Kepner
BT # 5 (Boom Trailer)	Boom	20"	Carpinteria Support Yar	1500	Kepner
BT #6 (Boom Trailer)	Boom	20" 8"x12"	Carpinteria Support Yar	1500'	Kepner
BT #7 (Boom Trailer)	Boom	20" 8"x12"	Carpinteria Support Yar	1500'	Kepner
BT #8 (Boom Trailer)	Boom	20" 8"x12"	Carpinteria Support Yar	1500	Kepner
40' CONEX #40-4	Boom	30" 12"x18"	Carpinteria Support Yar	2800'	Kepner
40' CONEX # 40-5	Boom	30"	Carpinteria Support Yar	3300'	Kepner
40' CONEX # 40-6	Boom	30"	Carpinteria Support Yar	1300'	Kepner
40' CONEX # 40-11	Boom	30"	Carpinteria Support Yar	1200	American Marine
40' CONEX # 40-7	Boom	20" 8"x12"	Carpinteria Support Yar	5000	Kepner
40' CONEX # 40-9	Boom	20"	Carpinteria Support Yar	4600	Kepner
			Total Shoreline Boom	**31,700**	

SHORELINE PROTECTION Skiffs w 20 & 25 hp outboards

Location	Type	Model	Warehoused	Quantity	Manufacturer
SKIFF TRAILER # 1	Skiffs-alum.	16' w/outboard	Carpinteria Support Yar	4	N.A.
SKIFF TRAILER # 2	Skiffs-alum.	16' w/outboard	Carpinteria Support Yar	1	N.A.
SKIFF TRAILER # 3	Skiffs-alum.	16' w/outboard	Carpinteria Support Yar	1	N.A.

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CLEAN SEAS, LLC
2014 RESPONSE EQUIPMENT LIST

HYDRAULIC POWER UNITS

Location	Type	Model	Warehoused	Quantity / Capacity	Manufacturer
Building #2	Hydraulic Power Unit	DA-50	Carpinteria Support Yar	1/50 gpm	Diesel America
	Hydraulic Power Unit	DA-45	Carpinteria Support Yar	2/45 gpm	Diesel America
	Hydraulic Power Unit	DA-35	Carpinteria Support Yar	2 / 35 gpm	Diesel America
	Hydraulic Power Unit	DA-30	Carpinteria Support Yar	4 / 30 gpm	Diesel America
	Hydraulic Power Unit	DA-10	Carpinteria Support Yar	5 / 10 gpm	Diesel America

MOTOR POOL - Trucks, Cranes, Forklifts and Trailers

Location	Type	Model	Warehoused	Quantity / Capacity	Manufacturer
SUPPORT YARD	Crane Truck	Peterbilt	Carpinteria Support Yar	1 / 12 TON CRANE	Peterbilt
	Stake Bed Truck	Ford 550	Carpinteria Support Yar	1	Ford Moter Co.
	Stake Bed Truck	Ford 350	Carpinteria Support Yar	1	Ford Moter Co.
	Passenger 4x4 Dually	Ford 350	Carpinteria Support Yar	1	Ford Moter Co.
	Passenger	Expedition	Carpinteria Support Yar	1	Ford Moter Co.
	Passenger	F150	Carpinteria Support Yar	2	Ford Moter Co.
	Passenger	Ranger	Carpinteria Support Yar	1	Ford Moter Co.
	Passenger	Toyota Tundra	Carpinteria Support Yar	1	Toyota
	ATV	Big Bear	Carpinteria Support Yar	1	Yamaha
	ATV	Polaris Ranger	Carpinteria Support Yar	1	Polaris
	Forklift	Caterpiller 30k	Carpinteria Support Yar	1 / 33,000 lbs	Caterpiller
	Forklift	Caterpiller 8k	Carpinteria Support Yar	1 / 8,000 lbs	Wiggens
	Mobile Ops fld. Office	22' Attitude	Carpinteria Support Yar	1	Southwind

PPE, HANDTOOLS & ABSORBENT MATERIAL Boom, Pads and Snare

Location	Type	Model	Warehoused	Quantity / Capacity	Manufacturer
CONEX 40' 40-10	Absorbent Boom	8"	Carpinteria Support Yar	8400'	3-M
RT # 4 (Response Trailer	Absorbent Boom	8"	Carpinteria Support Yar	1200'	3-M

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CLEAN SEAS, LLC
2014 RESPONSE EQUIPMENT LIST

PORTABLE RESPONSE SUPPORT CONTAINER

20' CONEX 20-3

Beach Clean-up	Quantity
Rakes	15
Shovels Flat	15
Shovels Round	15
Pitch Forks	4
Plastic Buckets	15
18" Wire Flags	1000

Decon	Quantity
Hand Cleaner	10
First Aid Kits	10
5 Gallon Water Bottles	5
Tables	5
Stackable Chairs	20
Dish Pans	6
Gatoraid	6
Kiddie Pools	4
Hudson Sprayer	2
Short Handle Brushes	12
Long Handle Brushes	18
Eye Wash Station	1
Pallets	3
Barrier Fence	6

PPE	Quantity
Gloves	3000
Tyvec	1000
Rain Gear	250
Rubber Boots	300
Hip Waders	10
Safety Glasses	200
Barrier Cream	6
Back Braces	24
Sun Screen	300
Sun Screen	300

Miscellaneous	Quantity
Rags	10 cs
Tie Wraps	400
Trash Bags	4000
Work Vests	250
Traffic Cones	25
Wooden Stakes	100
Duct Tape	20 rolls
Chem Lights	100
Tarps	6
Visqueen	2 rolls
Sand Bags	1000
Bike Flags	100
1/4" Line	1200'
6" PVC Pipe	20'
1/2" Line	600'

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CLEAN SEAS, LLC
2014 RESPONSE EQUIPMENT LIST

CHEMICAL DISPERSANTS

Location	Type	Model	Warehoused	Quantity / Capacity	Manufacturer
LAY-DOWN	Dispersant	COREXIT 9527	Carpinteria Support Yar	9250	Nalcol
LAY-DOWN	Dispersant	COREXIT 9500	Carpinteria Support Yar	8900	Nalcol
			Total Shoreside	**18150**	

RT # 1 (Response Trailer)

Item	Quantity	Item	Quantity
250 gal. Simplex sprayer	1	ear muffs	2
24 gal containers	6	hard hats	4
2 gal. gas cans (empty)	2	tyvek suits	1
box paper rags	1	disinfection wipes	1
tool kit	1	reflective vests	4
sorbent pads	2	push squeegee	1
8" sorbent boom	1	½ x 20' lines	4
½ liter drinking water	18	extension cords	2
first aid kit	1	goggles	2
1500 watt floodlights	2	5 Gal. Buckets	30
35 gal trash can	1	Master Pump	1
5 gal plastic buckets	11	MSDS for 9527 & 9500	1
hand truck	1		
25' hose w/camlock fittings	2		
folding chairs	4		
folding tables	2		
brooms	2		
tarp	1		
easyup tent	1		
55 gal trash bags	1		
duct tape	2		
eyewash station	1		
plastic sheeting	1		
face shields	2		
safety glasses	2		
master pump	1		
fire extinguisher	1		
spill absorbent material	2		

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CLEAN SEAS, LLC
2014 RESPONSE EQUIPMENT LIST

RT # 2 (Response Trailer)

Item	Quantity	Item	Quantity
250 gal. Simplex sprayer	1	hard hats	4
24 gal containers	6	tyvek suits	1
2 gal. gas cans (empty)	2	disinfection wipes	1
box paper rags	1	reflective vests	4
tool kit	1	push squeegee	1
sorbent pads	2	½ x 20' lines	4
8" sorbent boom	1	extension cords	2
½ liter drinking water	18	goggles	2
first aid kit	1	5 Gal. Buckets	30
1500 watt floodlights	2	Master Pump	1
35 gal trash can	1	MSDS for 9527 & 9500	1
5 gal plastic buckets	11		
hand truck	1		
25' hose w/camlock fittings	2		
folding chairs	4		
folding tables	2		
brooms	2		
tarp	1		
easy-up tent	1		
55 gal trash bags	1		
duct tape	2		
eyewash station	1		
plastic sheeting	1		
face shields	2		
master pump	1		
fire extinguisher	1		
spill absorbent material	2		

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CLEAN SEAS, LLC
2014 RESPONSE EQUIPMENT LIST

PERSONNEL DECONTAMINATION SUPPORT TRAILER SUPPLIES, DECON				
Location	**Type**	**Model**	**Warehoused**	**Quantity / Capacity**
RT # 3 (Response Trailer)	Portable Decon Pool	NA	Carpinteria Support Yard	1 / 20"x 40'
	Folding Tables	NA	Carpinteria Support Yard	2 / 24" x 72"
	heavy tarps	NA	Carpinteria Support Yard	3
	chairs	NA	Carpinteria Support Yard	6
	41 gal plastic trash can	NA	Carpinteria Support Yard	3
	easy-up tent	NA	Carpinteria Support Yard	1
	fishtote	NA	Carpinteria Support Yard	1
	short handle brush	NA	Carpinteria Support Yard	1 case
	sorbent pads	NA	Carpinteria Support Yard	2 bales
	sorbent boom	NA	Carpinteria Support Yard	2 bales
	sorbent roll	NA	Carpinteria Support Yard	1 roll
	degreaser	NA	Carpinteria Support Yard	10 gal
	hand cleaner	NA	Carpinteria Support Yard	4 gal
	kiddy pools	NA	Carpinteria Support Yard	4
	hudson sprayers	NA	Carpinteria Support Yard	4
	plastic trays	NA	Carpinteria Support Yard	4
	Rakes	NA	Carpinteria Support Yard	5
	round shovels	NA	Carpinteria Support Yard	5
	pitch forks	NA	Carpinteria Support Yard	2
	plastic buckets	NA	Carpinteria Support Yard	5
	4"x 5' PVC Pipe	NA	Carpinteria Support Yard	1
	sand bags	NA	Carpinteria Support Yard	100
	hard hats	NA	Carpinteria Support Yard	10
	gloves	NA	Carpinteria Support Yard	100 pr
	tyvek suits	NA	Carpinteria Support Yard	48
	rubber boots	NA	Carpinteria Support Yard	48 pr
	safety glasses	NA	Carpinteria Support Yard	24
	sun screen	NA	Carpinteria Support Yard	1 bx
	work vest	NA	Carpinteria Support Yard	10

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CLEAN SEAS, LLC
2014 RESPONSE EQUIPMENT LIST

PERSONNEL DECONTAMINATION SUPPORT TRAILER SUPPLIES (continued)

Location	Type	Model	Warehoused	Quantity / Capacity
RT # 3 (Response Trailer)	rain suits	NA	Carpinteria Support Yard	5
	rags	NA	Carpinteria Support Yard	3 cs
	zip ties	NA	Carpinteria Support Yard	1 bag
	trash bags	NA	Carpinteria Support Yard	2 bx
	traffic cones	NA	Carpinteria Support Yard	10
	duct tape	NA	Carpinteria Support Yard	8 rolls
	¼" manila rope	NA	Carpinteria Support Yard	600'
	visqueen	NA	Carpinteria Support Yard	1 roll
	barrier tape	NA	Carpinteria Support Yard	3 rolls
	water	NA	Carpinteria Support Yard	1 cs

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CLEAN SEAS, LLC
2014 RESPONSE EQUIPMENT LIST

SURVEILLANCE, AERIAL TRACKING and DISPERSANT APPLICATION PLATFORMS (Contracted Resources)

Surveillance and Aerial Tracking

Clean Seas has been utilizing aerial platforms to assess marine oil spills, track and control marine oil spill response vessels since the early 1970's. ASPEN HELICOPTER Inc. has responded by contract to Clean Seas beginning in 1982 and has easily responded to over 70 spill response call-outs ranging from one day to multiple day events. ASPEN HELICOPTER Inc. brings state of the art technology via GPS tracking, on-site logistical and mechanical support. ASPEN HELICOPTER Inc. has trained on numerous occasions with Clean Seas AERIAL DISPERSANT SPRAY BUCKETS from Oxnard Airport and remote LZ throughout Clean Seas Response Area.

Below is a Table listing available Helicopter and Fixed Wing Aircraft available to Clean Seas:

Helicopter	Fixed Wing
Bell 206 L-III (Long Ranger)	2-Partenavia P68-C (High wing survey)
Bell 206 B-III (Jet Ranger)	1-Partenavia P68- OBS (Observer)
Bell 212 Medium Twin Helicopter	2-Piper Chieftain PA-31-350 (all weather)

Satellite Tracking Buoys

Type	Manufacter	Location	Quantity	Model
Satellite Tracking Buoy 7552	Fastwave Communications	Ocean Scout	1	Fastwave Pathfinder
Satellite Tracking Buoy 7521	Fastwave Communications	Ocean Guardian	1	Fastwave Pathfinder
Satellite Tracking Buoy 7553	Fastwave Communications	Ocean Sentinel	1	Fastwave Pathfinder
Satellite Tracking Buoy 7550	Fastwave Communications	Ocean Defender	1	Fastwave Pathfinder
Satellite Tracking Buoy 7551	Fastwave Communications	CS Yard	1	Fastwave Pathfinder

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NRC Environmental Resources

Long Beach COTP Zone

TRANSPORTATION

LIGHT DUTY TRUCKS (FLAT BEDS AND BELOW)

LT. VEHICLES TO 1 TON, 2W

ID#	Identification	Specification	Storage	Home Base	Maintained	VIN #	LICENSE #
1159	Truck 1T	Ford F-250 toolbox	David McDaniel	Long Beach	Quarterly	1FTNX20F42ED34734	7F87525
1172	Truck 1T	Ford F-250 toolbox	Jon Victoria	Long Beach	Quarterly	1FTNW21P54EC51049	7L32938
1173	Truck 1T	Ford F-350 toolbox	Aaron Smith	Long Beach	Quarterly	1FTNX21P44EC34305	7K62663
1183	SUV	Ford Explorer	Aimee Wilson	Long Beach	Quarterly	1FMZU62K14ZA29727	5FIH504
1194	Truck 1T	Ford F-350 utility bed	Don Parker	Long Beach	Quarterly	1FDXF46P95EA52984	7U29666
1206	Truck 3/4 T	Ford F-150	Akio Usuda	Long Beach	Quarterly	1FTRF12215NA09925	7476227
1207	Expedition	Ford SUV	Frank Garrett	Long Beach	Quarterly	1FMPU165X5LA26201	5LZU73
1038	Truck 1T	Ford F-350, lifgate	Yard	Long Beach	Quarterly		
1056	Truck, 1T	1997 Ford F250, fuel caddy	Yard	Long Beach	Quarterly	1FTHX25F6VEA77120	7L14267
1068	Truck 1T	Ford F-250 toolbox	Jose Salgado	Long Beach	Quarterly	1FTHX25F3EC36868	5R16811
1071	Truck 1T	Ford F-250 toolbox	Yard	Long Beach	Quarterly	1FTHX25F2VEC67030	5P51923
1099	Van	Chevy, AstroVan	Jose Mancia	Long Beach	Quarterly	1GCDM19W5XB150235	5Z77899
1103	Suburban	Chevrolet SUV 2500	T.Roloff	Long Beach	Quarterly	3GNGK26J6XG234855	5NMD541
1117	Van	Ford	Yard	Long Beach	Quarterly	1FBSS31F3YHA23829	4JPH287
1123	Truck 3/4T Ford F-250	Ford F-250, extracab, fuel caddy/t-boxes	Marine Use	Long Beach	Quarterly	1FTNX20F8YEE09671	7U36227
1133	Truck, 1T	Ford F-250, 4x4, crewcab/t boxes	John Farelas	Long Beach	Quarterly	1FTNX21F3YEE13142	6F64594
1208	Truck 1 T	Chevrolet	Juan Delgado	Long Beach	Quarterly		
1210	Truck 1 Ton F-350	Ford F-350, crewcab, fuel caddy, t/boxes	Ray Sanchez	Long Beach	Quarterly		8G26614
1214	Truck 1 Ton F-250	Ford F-250 crewcab, fuel caddy, t/boxes	David Ramos	Long Beach	Quarterly		

LT. VEHICLES TO 1 TON, 4W

ID#	Identification	Specification	Storage	Home Base	Maintained	VIN #	LICENSE #
1094	Truck 1T	Ford F-250 crewcab, fuel caddy/t-boxes	Ernie Villarreal	Long Beach	Quarterly	1FTSW31F1XEB88231	7L14396
1121	Truck 1T Ford F-250	Ford	Yard	Long Beach	Quarterly		
1130	Excursion F-350	Ford F350 SUV	Justin Peters	Long Beach	Quarterly	1FMSU41F1YEE02028	4MW5849
1170	Truck 1T Ford F-350	F-350, crew cab 4x4	Will Canto	Long Beach	Quarterly		
1191	Truck 1T Ford F-350	Ford F-350, crewcab, 4x4	Ken Woodhall	Long Beach	Quarterly		
1124	Truck 1T	F250, crewcab	Chris Barrientos	Long Beach	Quarterly	1FTNX20F6YEE09670	7Z35526
2114	ER Rig - Support Ambulance	Navistar E440	Yard	Long Beach	Quarterly	1HTSLABM5TH286331	7R19293

SUPER DUTY/UTILITY/BOX BED

ID#	Identification	Specification	Storage	Home Base	Maintained	VIN #	LICENSE #
1008	Truck 1 1/2 T	Ford Super Duty, fuel caddy/press wash	Yard	Long Beach	Quarterly	2FDLF47M6NCA18154	6D07702
1122	1999 Flat Bed Crew/Gear Truck - F450	Ford F-450 Quad Cab stakebed no lift	Yard	Long Beach	Quarterly	1FDXW46FXXEE53776	7K91878
1147	1999 Flat Bed Gear Truck - F450	Ford F-450 Single Cab stakebed w/liftgate	Yard	Long Beach	Quarterly	1FDXF46FXXEE19966	8E28742
1197	Flat Bed Crew/Gear Truck - F550	Ford F550 - 4x4	Yard	Long Beach	Quarterly		
1201	Flat Bed Crew/Gear Truck - F550	Ford F550 - 4x4 w/lift gate	Yard	Long Beach	Quarterly		
2101	Flat Bed Crew/Gear Truck - F550		Yard	Long Beach	Quarterly		
2118	Flat Bed Crew/Gear Truck - F550	Ford F550 - 4x4 w/lift gate	Yard	Long Beach	Quarterly		
1059	Truck 1 1/2T	Ford, stakebed	Yard	Long Beach	Quarterly		
1076	HAZMAT Response Unit	Chev/step van	Yard	Ventura	Quarterly		5R16811
1113	Flat Bed Gear Truck	Ford F-550, stakebed, 4x4	Riverside Satellite Site	Long Beach	Quarterly		
1167		Ford Utility Bed	Juan Ortiz	Long Beach	Quarterly		
2143	26,000 GVWR Flatbed Truck	Freightliner, Pressure Washer/Air Comp.	Yard	Long Beach	Quarterly	1FV3HJAC81HG81068	6D92586

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HEAVY DUTY TRUCKS/TRAILERS

HEAVY TRUCKS/TRACTORS (REQUIRING CDL/DOT)

ID#	Identification	Specification	Storage	Home Base	Maintained	VIN #	LICENSE #
2011	Tractor w/ pump	Freightliner	Yard	Long Beach	Quarterly	2FUYDSYBXNV478075	9A38662
2035	Tractor w/ pump	Freightliner	Yard	Long Beach	Quarterly	2FUYDSB4NV478072	9A02707
2036	Tractor w/ wet kit and pump						
2040	Tractor	Freightliner	Yard	Alameda	Quarterly	2FUYDSBINV478076	9B01840
2093	Tractor Roll Off	Volvo	Yard	Long Beach	Quarterly	4VGTDAJF4VN856419	7L79403
2115	Box Van	Freightliner FL70	Yard	Long Beach	Quarterly	1FVGHJAAXXHA55929	5U60324
2073	Tractor w/ wet kit	Freightliner	Yard	Long Beach	Quarterly		
2076	Tractor w/ wet kit	Peterbuilt	Yard	Ventura	Quarterly	1XPCD69XXRD361132	9B99770
2078	Tractor w/ wet kit	International	Yard	Long Beach	Quarterly	2HSFMAER3WC042697	

DUMP/BIN TRUCKS

ID#	Identification	Specification	Storage	Home Base	Maintained	VIN #	LICENSE #
2052	Dump Truck	Ford L 9000, 14 yd.	Yard	Long Beach	Quarterly	1FDZU90V3RVA45571	6A27280
2053	Dump Truck	Ford LTL 9000, 14yd.	Yard	Long Beach	Quarterly	1FDZU90LXPVA36927	4T18472
2061	Rocket Launcher Truck	Freightliner, with bin					
2071	Rocket Launcher Trailer	ESP					
3293	Rocket Launcher Trailer	2001 ESPG	Yard	Long Beach	Quarterly	1E9RS482711229172	4GY5832

FLATBED/UTILITY/CARGO

ID#	Identification	Specification	Storage	Home Base	Maintained	VIN #/SN	LICENSE #
3226	Trailer, Backhoe	Trail King	Yard	Long Beach	Quarterly	1TKC026224M115336	4EX1616
3372	Trailer, Backhoe	Trail King	Yard	Long Beach	Quarterly	1TKC026266M035783	4JY7124
3274	Carson End Dump Tailer	20' Carson	Yard	Long Beach	Quarterly	4HXDT122X7C122452	4HS9039
2001	Utility Dry Van Trailer	48x102	Yard	Long Beach	Quarterly	1UYVS2533PC925106	1VL4840
2065	Trailer, Spill Response	48x102	Yard	Long Beach	Quarterly		
3364	48' HAZ Waste Storage Trailer	48' Great Dane Trailer	Yard	Long Beach	Quarterly	1GRAA9628HS098716	4EL5124
3365	48' HAZ Waste Storage Trailer	48' Utility Trailers Van	Yard	Long Beach	Quarterly	1UYV22531WP644607	4HH2254
48117	Trailer, Spill Response	48x102	Yard	Ventura	Quarterly		
48117	Trailer, Spill Response	Fruehauf, 40'	Yard	Long Beach	Quarterly		
3056	Trailer, Spill Response	TRLMO 40'	Yard	Long Beach	Quarterly		
3058	Trailer, Spill Response	Fruehauf 45'	Yard	Long Beach	Quarterly		
3059	Trailer, Spill Response	Pines	Yard	Long Beach	Quarterly		
3093	Trailer, Spill Response	18',Dico, 1200' boom	Yard	Long Beach	Quarterly	4AGEU28D8NC016378	1VT4073
3101	Trailer, Spill Response, Carson 12' (mini me)	Carson 12'	Yard	Long Beach	Quarterly		
3111	Trailer, tilt bed	18'	Yard	Long Beach	Quarterly		
3117	Trailer, Boom/Skimmer/MTR	Pace 28'	Yard	Long Beach	Quarterly		
3118	Trailer, (2) Lund Skiffs/sorbents						
3120	Trailer, Incident Command, 24' pace trailer	24' Pace Trailer	Yard	Long Beach	Quarterly		
3126	Trailer, boom	Carson 20'	Yard	Long Beach	Quarterly		
3127	Trailer, boom	Big Tex, 20'	Yard	Long Beach	Quarterly		
3128	Trailer, boom	Carson 20'	Yard	Long Beach	Quarterly	16VCX2026X1D17590	4EX8100
3145	Trailer	Soughton, 48 x102	Yard	Long Beach	Quarterly		
3146	Trailer	53'	Yard	Long Beach	Quarterly		
3164	Roll-Off Trailer	ESP	Yard	Long Beach	Quarterly		
3176	Trailer Land Response	20' Pace Trailer	Riverside Satellite Site	Long Beach	Quarterly		
3177	Trailer, Technical Response	20' Pace Trailer	Yard	Long Beach	Quarterly		
6070	Trailer, Underground Response	SPCNS, boom, sandbags 18'	Yard	Long Beach	Quarterly		1AG5966
6071	Trailer, sorbents	Big Tex, sorbent, 20'	Yard	Long Beach	Quarterly		
6081	Trailer, boom Big Tex 20'	Big Tex, 20'	Yard	Long Beach	Quarterly		
OBR-1	40' Incident Command	40' trailer		Luisiana	Quarterly		
3278	Trailer, boom	40' trailer	Yard	Ventura	Quarterly	1S12E9489FD271732	4GC4548
6078	Trailer, Boston Whaler #6493	Boat trailer	Yard	Long Beach	Quarterly		
9162	Guzzler Ramps, Trailer	Ramps used for Guzzler	Yard	Long Beach	Quarterly	CA1022376	SE586096

NRC Environmental Resources

Long Beach COTP Zone

ROLL OFF BINS

ID#	Identification	Specification	Each (bbl)	Total (bbl)	Storage	Home Base
3259	Roll off bin	20y	20 yard	20 yard	West Lot	Long Beach
3260	Roll off bin	20y	20 yard	20 yard	West Lot	Long Beach
3261	Roll off bin	20y	20 yard	20 yard	West Lot	Long Beach
3262	Roll off bin	20y	20 yard	20 yard	West Lot	Long Beach
104	Roll off bin	30y	20 yard	20 yard	West Lot	Long Beach
100	Roll off bin	30y	20 yard	20 yard	West Lot	Long Beach
101	Roll off bin	30y	20 yard	20 yard	West Lot	Long Beach
103	Roll off bin	30y	20 yard	20 yard	West Lot	Long Beach
106	Roll off bin	18y	20 yard	20 yard	West Lot	Long Beach
106a	Roll off bin	20y	20 yard	20 yard	West Lot	Long Beach
3236	Roll off bin	20y	20 yard	20 yard	West Lot	Long Beach
5901	Roll off bin	40y OT	40 yard	Dry Strg	West Lot	Long Beach
5902	Roll off bin	40y OT	41 yard	Dry Strg	West Lot	Long Beach

Total bins	13

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NRC Environmental Resources

Long Beach COTP Zone

VAC TRUCKS AND TANKAGE

VACUUM TRUCKS/TRAILERS

ID#	Identification	Specification	Recovery BPD	Efficiency	EDRC	Liquid Storage bbls	Storage	Home Base	Maintained
SubVT	Vacuum Trailer	Certified, 120 bbl	3,430	10%	343	120	Vendor/TT	Long Beach	Use/Quarterly
SubVT	Vacuum Trailer	Certified, 120 bbl	3,430	10%	343	120	Vendor/TT	Long Beach	Use/Quarterly
SubVT	Vacuum Trailer	Certified, 120 bbl	3,430	10%	343	120	Vendor/TT	Long Beach	Use/Quarterly
SubVT	Vacuum Trailer	Certified, 120 bbl	3,430	10%	343	120	Vendor/TT	Long Beach	Use/Quarterly
SubVT	Vacuum Trailer	Certified, 120 bbl	3,430	10%	343	120	Vendor/TT	Long Beach	Use/Quarterly
SubVT	Vacuum Trailer	Certified, 120 bbl	3,430	10%	343	120	Vendor/TT	Long Beach	Use/Quarterly
2125	Vacuum Trailer	2002 Freightliner, 35 bbl	3,430	20%	686	35	Yard	Long Beach	Use/Quarterly
3035	Vacuum Trailer	Non Spec, 120 bbl	3,430	20%	686	120	Trailer	Long Beach	Use/Quarterly
3163	Vacuum Trailer	Pioneer, 130 bbls	3,430	20%	686	130	Trailer	San Diego	Use/Quarterly
3165	Vacuum Trailer	Pioneer, 120 bbls	3,430	20%	686	120	Trailer	San Diego	Use/Quarterly
3166	Vacuum Trailer	Certified, 120 bbl	3,430	20%	686	120	Trailer	Ventura	Use/Quarterly
3034	Vacuum Trailer	Certified, 120 bbl	3,430	20%	686	120	Trailer	Long Beach	Use/Quarterly
2069	Vacuum Truck	International, 70bbl	3,430	20%	686	70	Vehicle	Long Beach	Use/Quarterly
2039	Vacuum Truck	Guzzler 4816, Air Mover	3,430	20%	686	70	Vehicle	Long Beach	Use/Quarterly
3105	Vacuum Trailer	Petro Steel, 20bbl	2200	20%	225	20	Trailer	Long Beach	Use/Quarterly
3012	Vacuum Tailer	Certified, 130 bbl	3,430	20%	686	130	Trailer	Long Beach	Use/Quarterly
2081	Jetter						Vehicle		Use/Quarterly

Total EDRC	**8,457**
Total Liquid Storage BBL	**1,655**

TANKAGE / BARGES

ID#	Identification	Specification	Each (bbl)	Total (bbl)	Efficiency	Derated	Storage	Home Base	Maintained
	Barge Tankage	WT-30, 260x55x18	30,000	30,000	50%	15,000	Moorage	Long Beach	Quarterly
D919254	Barge Tankage	Foss 208, 208x50x13	16,530	16,530	50%	8,265	Moorage	Long Beach	Quarterly
589536	Barge Tankage	VBS 102, 195x35x12	10,100	10,100	50%	5,050	Moorage	Long Beach	Quarterly
589535	Barge Tankage	VBS 101, 195x35x18	10,100	10,100	50%	5,050	Moorage	Long Beach	Quarterly
506077	Barge Tankage	WT 25, 230x52x15	24,600	24,600	50%	12,300	Moorage	Long Beach	Quarterly
	Barge, Deck	Various					Moorage	Long Beach	Quarterly
	Portable Tank	Baker, 7 24hr response tanks	155	1,085	50%	543	Vendor	Southgate	Quarterly
	Portable Tank	Baker, 50 24hr response tanks	500	25,000	50%	12,500	Vendor	Southgate	Quarterly
	Portable Tank	Baker, 10 12hr response tanks	155	1,550	50%	775	Vendor	Southgate	Quarterly
	Portable Tank	Baker, 30 12hr response tanks	500	15,000	50%	7,500	Vendor	Southgate	Quarterly
ORB 5	Aluminum Barge	200 bbl	200	200			Ship Services L.A.	Long Beach	Quarterly

Total Derated BBL	**66,983**

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NRC Environmental Resources

Long Beach COTP Zone

DECONTAMINATION / SALVAGE

1", 2", 3" DIAPHRAM PUMPS

ID#	Identification	Specification	Capacity/Speed	Storage	Home Base	Maintained
4125-1	Pump, air diaphram	Wilden 3", M-15	240 gpm	Pump Trailer	Long Beach	Use/Annual
4125-2	Pump, air diaphram	Wilden 3", M-15	240 gpm	Pump Trailer	Long Beach	Use/Annual
4125-3	Pump, air diaphram	Wilden 3", M-15	240 gpm	Pump Trailer	Long Beach	Use/Annual
4125-4	Pump, air diaphram	Wilden 3", M-15	240 gpm	Pump Trailer	Long Beach	Use/Annual
4133	Pump, air diaphram	Wilden, 2", M-8	158 gpm	MTR Trailer #3117	Long Beach	Use/Annual
4125-5	Pump, air diaphram	Wilden 3", M-15	240 gpm	NRC Response Vessel	Long Beach	Each Use
4074	Pump, air diaphram	Wilden 2" acid	100 gpm	Riverside Satellite Site	Long Beach	Each Use
4213	Pump, air diaphram	Versamatic 1" acid	35 gpm	Pump Container	Long Beach	Each Use
4164-1	Pump, air diaphram	2"	260gpm	Marine Trailer #3117	Long Beach	Use/Annual
N/A	Pump, air diaphram	Wilden 2" Stainless	260gpm	Pump Container	Long Beach	Use/Annual
4164-3	Pump, air diaphram	2"	260gpm	N/A	Long Beach	Use/Annual
TBD	Pump, air diaphram	Wilden 2" Aluminum	260gpm	Marine Trailer #6070	Long Beach	Use/Annual

ID#	Identification	Specification	Capacity/Speed	Storage	Home Base	Maintained
4167-1	Pump, trash	4", QP		Container# 1	Long Beach	Use/Annual
4167-2	Pump, trash	4", QP		container#1	Long Beach	Use/Annual

Pump Strainers

ID#	Identification	Specification	Capacity/Speed	Storage	Home Base	Maintained
TBD	Eaton 2" Strainer	**2" SS**		MTR Trailer 3117	Long Beach	Use/Annual
TBD	Eaton 2" Strainer	**2" SS**		Truck 2143	Long Beach	Use/Annual

PRESSURE WASHERS

ID#	Identification	Specification	Capacity/Speed	Storage	Home Base	Maintained
5022	Steam/Pressure Washer	Mulsbary, trailered, 6000 psi, hot	6000psi	Trailer, Yard	Long Beach	Use/Annual
5032	Steam/Pressure Washer	Mulsbary, trailered, 6000 psi, hot	6000psi	Trailer, Yard	Long Beach	Use/Quarterly
5037	Pressure washer trailered single	Socus, hot, 3000 psi	3000 psi	Trailer	Long Beach	Each Use
5038	Pressure Washer trailered dual	Steam-x, 6000 psi	6000 psi	Trailer	Long Beach	Each Use
5044	Pressure washer trailered dual	2x2,200gal w/hose			Long Beach	Quarterly
5059	Pressure washer trailered dual	2x2,200gal w/hose			Long Beach	Quarterly
5041	Pressure washer trailered single	steam-x 3000 psi	3000 psi	trailer	Long Beach	Each Use
3353	PW 5083/5084 trailered dual	Alkota 5355J	2999 psi	Trailer, Yard		
3354	PW 5092/5093 trailered dual	Alkota 5305E & 4405F	3000 psi	trailer	Long Beach	Each Use
3355	PW 5094/5095 trailered dual	Ramteq CH Series	3000 psi	Riverside Satellite Site	Long Beach	Each Use
5088	Pressure Washer Hand Cart	Alkota 3305X4	3000 psi	Yard	Long Beach	Each Use
5089	Gas Powered PW Hand Cart	Honda Excell	2800 psi	Yard - Container #10	Long Beach	Each Use
5090	Gas Powered PW Hand Cart	Honda Excell	2800 psi	Yard - Container #10	Long Beach	Each Use
5091	Gas Powered PW Hand Cart	Honda Excell	2800 psi	Yard - Container #10	Long Beach	Each Use
5085	PW Hand Cart Mounted	All American Dominator Series	3000 psi	Yard	Long Beach	Each Use
5086	PW Hand Cart Mounted	All American Dominator Series	3000 psi	Yard	Long Beach	Each Use
5087	PW Hand Cart Mounted	All American Dominator Series	3000 psi	Yard	Long Beach	Each Use
5096	PW Truck Mounted on 2143	Landa MFG	3000 psi	Yard	Long Beach	Each Use
5097	PW Truck Mounted on 2143	Karcher	3000 psi	Yard	Long Beach	Each Use

COMPRESSORS

ID#	Identification	Specification	Capacity/Speed	Storage	Home Base	Maintained
7179	Compressor	Ingersoll/Rand 185CFM	185 CFM	Trailer	Long Beach	Each Use
7180	Compressor	Ingersoll/Rand 185CFM	185 CFM	Trailer	Long Beach	Each Use
LB	Blower	Horn		Warehouse	Long Beach	
LB	Blower	Copus, 150CFM	150CFM	Warehouse	Long Beach	
LB	Blower	Copus 150CFM	150CFM	Warehouse	Long Beach	

GENERATORS

ID#	Identification	Specification	Capacity/Speed	Storage	Home Base	Maintained
7025-1	Generator	3.7KW	3.7KW	Yard	Long Beach	Use/Quarterly
7025-2	Generator	3.7KW	3.7KW	Haz Response Trailer #1076	Long Beach	Use/Quarterly
7024	Generator	Honda 7.5KW	7.5KW	Spill Response Trailer	Long Beach	Use/Quarterly
7020	Generator	Kubota, 7.5 KW, diesel	7.5 KW	Yard	Long Beach	Each Use
9087	Light Tower			Yard	Long Beach	Use/Quarterly
9107	Light Tower			Yard	Long Beach	Use/Quarterly

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NRC Environmental Resources

Long Beach COTP Zone

BOOM / VESSELS

CONTAINMENT BOOM

ID#	Identification	Specification	Boom Length (ft.)	Home Base	Storage	Inland/Ocean
6312	Boom 8x12	Am. Marine	600	Foss 208 - Long Beach		Ocean
6312	Boom 8x12	Am. Marine	600	San Pedro Barge - Long Beach		Inland
6312	Boom 8x12	Am. Marine	600	WT 25 - Long Beach		Inland
6312	Boom 8x12	Am. Marine	600	WT 30 - Long Beach		Inland
6312	Boom 8x12	Am. Marine	1,200	FMC - Long Beach		Inland
6312	Boom 8x12	Am. Marine	1,500	Response Trailer 2066 - Anaheim	Kinder Morgan in Orange	Inland
6312	Boom 8x12	Am. Marine	1,600	Vessel Jonathan - Long Beach	Jonathan unit jon-1	Inland
6312	Boom 8x12	Am. Marine	1,800	Vessel 27' Monark Long Beach	Monark unit 6241	Inland
6312	Boom 8x12	Am. Marine	2,000	Trailer 3126 - Long Beach	Long Beach-green trailer	Inland
6312	Boom 12x18	Am.Marine	2,000	Trailer 2065 - Long Beach	Long Beach	Ocean
6313	Boom 42"	42" Containment System	2,000	Trailer 604 - Ventura	Ventura	Ocean
6313	Boom 42"	42" Containment System	2,000	Trailer 3278 - Long Beach	moved from long beach to ventura 6-4-07	Ocean
6313	Boom 42"	42" Containment System	2,000	Trailer 228844 - Long Beach	Long Beach	Ocean
6313	Boom 42"	42" Containment System	2,000	Trailer 31063 - Ventura	moved from long beach to ventura 6-4-07	Ocean
6313	Boom 42"	42" Inflatable Open Ocean Boom	2,500	Ship Services - Long Beach	Ship Services	Ocean
516	Sorbent Boom	Sorbents storage	0	Trailer 435 - Long Beach	Long Beach	
6312	Boom 8x12	Am. Marine	4,900	Trailer 3145 - Long Beach	Long Beach	Inland
6312	Boom 8x12	Am. Marine	2,000	Trailer 6081 - Ventura	Ventura	Inland
6312	Boom 8x12	Am. Marine/orange	800	Marine Response/MTR Trailer #3117	MTR trailer #3117 Long Beach	Inland
6312	Boom 8x12	Am. Marine	2,000	Trailer 3128 - Ventura	Port Hueneme	Inland
6312	Fence boom 24"	Seacor Environmental	3,500	Trailer #Keeb	Ventura	
6312	Boom 6x12	am. Marine	625	MTR trailer 6070	Long Beach	
		Total Boom Length (ft.)	35,625			

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SKIFFS

ID#	Identification	Specification	Capacity/Speed	Storage	Home Base	Maintained
6365-1	Skiff	Lund, 16'	20 knts	Trailer #3118	Long Beach	Use/Quarterly
6365-2	Skiff	Lund, 16'	20 knts	Trailer #3118	Long Beach	Use/Quarterly
6365-3	Skiff	Lund, 16'	20 knts	Trailer #3118	Long Beach	Use/Quarterly
6365-4	Skiff	Lund, 16'	20 knts	Trailer #3118	Long Beach	Quarterly
6380-1	Skiff	Valco, 12'		Trailer #6030	Long Beach	Use/Quarterly
6380-2	Skiff	Valco, 12'		Trailer #6030	Long Beach	Use/Quarterly
6380-3	Skiff	Valco, 12'		Trailer #6030	Long Beach	Use/Quarterly
6380-4	Skiff	Valco, 12'		Marine Response/MTR Trailer #3117	Long Beach	Use/Quarterly
6380-5	Skiff	Valco, 12'		Deckboat #6005	Long Beach	Use/Monthly
6380-6	Skiff	Valco, 12'		Deckboat #6005	Long Beach	Use/Quarterly
6243-1	Skiff	McGregor 10'		Rack Marine Yard	Long Beach	Use/Quarterly
6243-2	Skiff	Klamath12'		Rack Marine Yard	Long Beach	Use/Quarterly
6243-3	Skiff	Klamath12'		Rack Marine Yard	Long Beach	Use/Quarterly
6243-4	Skiff	Klamath12'		Rack Marine Yard	Long Beach	Use/Quarterly
		Total Support Vessels	**14**			

VESSELS

ID#	Identification	Specification	Capacity/Speed	Storage	Home Base	Maintained
6005	Response Vessel 28'	Deckboat	18 knts	Moorage	Long Beach	Use/Quarterly
6030	Skimming Vessel 27'	Marco	18 knts	Moorage	Long Beach	Use/Monthly
6493	Response Vessel 22'	Boston Whaler	20 knts	Trailer	Long Beach	Use/Quarterly
6481	Response Vessel 27'	Grady White	30 knts	Trailer #6484/Shoreline Village	Long Beach	Use/Quarterly
6771	NRC Response	Kvichak 32'	15 knts	Moorage	Long Beach	Use/Quarterly
6010	18' Seasled	Munson	30 knts	Moorage	Long Beach	Use/Monthly
6241	Response Vessel 28'	Monark	30 knts	Moorage	Long Beach	Use/Monthly
6242	18' Seasled	Munson	30 knts	Moorage	Long Beach	Use/Monthly
JON-1	Workboat	Jonathan		Moorage	Long Beach	Use/Quarterly
		Total Response Vessels	**9**			

VESSEL TRAILERS

ID#	Identification	Specification	Storage	Home Base	Maintained
6346	Trailer	Big Tex	Long Beach	Long Beach	Quarterly
6207	Trailer, boat	EZ Loader, general utility	Long Beach	Long Beach	Quarterly
6078	Trailer, boat	EZ Loader, for boston whaler 6493	Long Beach	Long Beach	Quarterly
6030	Trailer, boat	Big Tex, skiffs, 18'	Long Beach	Long Beach	Quarterly
6069	Trailer, boat	EZ Loader	Long Beach	Long Beach	Quarterly
3118	Trailer, boat	Big Tex, skiff, 18'	Long Beach	Long Beach	Quarterly
6484	Trailer, boat	Sea Lion, for grady white 6481	Long Beach	Long Beach	Quarterly

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NRC Environmental Resources

Long Beach COTP Zone

SKIMMERS

ID#	Identification	Specification	Recovery BPD	Efficiency	EDRC	Storage	Home Base
6375	Brush/Drum Skimmer	Aqua-Guard/RBS-10	3600.00	95%	3,420	Trailer #3117	Long Beach
6303	Brush/Drum Skimmer	Aqua-Guard/RBS-20	7200.00	95%	6,840	NRC Response #6771	Long Beach
5465	Skimmer	CASCADE-5465	27325	20%	5,465	Ventura Yard, flatbed trailer #364	OST Ventura
PT 2	Skimmer	Crucial ORD-XP-347	1735	20%	347	OSRV Patriot II	Long Beach
4149	Wier Skimmer	Foilex 150	5,280	20%	1,056	Barge Ship Services	Long Beach
4767	Wier Skimmer	Foilex Mini	5,280	20%	1,056	Trailer #3117	Long Beach
6030	Belt Skimmer Vessel	Marco / 1C	4,971	74%	3,679	Moorage NRCES dock	Long Beach
MEG 3	Wier Skimmer	Megator 3	3,600	20%	720	Trailer #3117	Long Beach
RMOP-1	Rope Skimmer	OMI Mark	240	20%	48	Yard	Long Beach
RMOP-2	Rope Skimmer	OMI Mark	240	20%	48	Yard	Long Beach
RMOP-3	Rope Skimmer	OMI Mark	240.00	20%	48	Yard	Long Beach
RMOP-4	Rope Skimmer	OMI Mark	240	20%	48	Yard	Long Beach
RT-70	Drum Skimmer	Roto Drum 70	10,560	92%	9,715	Trailer #353	Long Beach
6178-1	Disc Skimmer	Vikoma/Kebab 600 E	1,370	20%	274	Container #3047	Long Beach
6178-2	Disc Skimmer	Vikoma/Kebab 600 E	1,370	20%	274	Container #3047	Long Beach
6304	Disc Skimmer	Vikoma/Komara 12K	2,400	95%	2,280	Yard	Long Beach
4150	Wier Skimmer	Foilex 150	5,280	20%	1,056	Trailer #353	Long Beach
6359-1	Wier Skimmer	Douglas Skimpac	2,400	95%	2,280	Ventura	Ventura
6359-2	Wier Skimmer	Douglas Skimpac	2,400	95%	2,280	Yard	Long Beach
	Total EDRC BPD	**40,934**					

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NRC Environmental Resources

Long Beach COTP Zone

HAZMAT / COMMUNICATION

MONITORING EQUIPMENT

ID#	Identification	Specification	Storage	Home Base	Maintained	Date Acquired
8085	Arizona Instruments	Jerome Meter		Mercury Meter	Dispatch	11/1/2003
	BRAUN	Digital Ear Thermometer	N/A	Digital thermometer (QTY 4)	Safety Office	11/1/2003
8052-1	BW Technology	Gas Alert Clip	H304-H039051	single gas personal clip (H2S)	Dispatch	11/1/2003
8052-2	BW Technology	Gas Alert Clip	H304-H039045	single gas personal clip (H2S)	Dispatch	11/1/2003
8052-3	BW Technology	Gas Alert Clip	H304-H039049	single gas personal clip (H2S)	Dispatch	11/1/2003
8052-4	BW Technology	Gas Alert Microclip	KA106-008882	Multi-gas personal clip (CO, H2S, O2, LEL)	Safety Office	11/1/2003
8052-5	BW Technology	Gas Alert Microclip	KA106-0028009	Multi-gas personal clip (CO, H2S, O2, LEL)	Safety Office	11/1/2003
8052-6	BW Technology	Gas Alert Microclip	KA106-009106	Multi-gas personal clip (CO, H2S, O2, LEL)	Safety Office	11/1/2003
8052-7	BW Technology	Gas Alert Microclip	KA106-0028132	Multi-gas personal clip (CO, H2S, O2, LEL)	Safety Office	11/1/2003
8052-8	BW Technology	Gas Alert Microclip	KA106-008877	Multi-gas personal clip (CO, H2S, O2, LEL)	Safety Office	11/1/2003
8052-9	BW Technology	Gas Alert Microclip	KA106-008936	Multi-gas personal clip (CO, H2S, O2, LEL)	Safety Office	11/1/2003
8052-10	BW Technology	Gas Alert Microclip	KA106-0020442	Multi-gas personal clip (CO, H2S, O2, LEL)	Safety Office	11/1/2003
8052-11	BW Technology	Gas Alert Microclip	KA106-0011933	Multi-gas personal clip (CO, H2S, O2, LEL)	Safety Office	11/1/2003
8052-12	BW Technology	Gas Alert Microclip	KA106-0020386	Multi-gas personal clip (CO, H2S, O2, LEL)	Safety Office	11/1/2003
8052-13	BW Technology	Gas Alert Microclip	KA106-0012627	Multi-gas personal clip (CO, H2S, O2, LEL)	Safety Office	11/1/2003
8052-14	BW Technology	Gas Alert Microclip	KA106-0011348	Multi-gas personal clip (CO, H2S, O2, LEL)	Safety Office	11/1/2003
8069-1	Lumidor / Zellweger Analytics	Micro Max Plus	2214	4 gas meter (CO, H2S, O2, LEL)	Maciel	11/1/2003
8069-2	Lumidor / Zellweger Analytics	Micro Max Pro	10794	4 gas meter (CO, H2S, O2, LEL)	Dispatch	11/1/2003
8069-3	Mine Safety Appliances (MSA)	Passport		PID	Dispatch	11/1/2003
	OMRON Healthcare, Inc.	HEM-637	N/A	Wrist blood pressure monitor w/ intellisense (QTY 4)	Safety Office	11/1/2003
8069-4	RAE Systems	Mini RAE	110-009650	PID	Dispatch	11/1/2003
8069-5	RAE Systems	Mini RAE	110-009671	PID	Woodhall	11/1/2003
8069-6	RAE Systems	Multi RAE	095-518535	4 gas meter (CO, H2S, O2, LEL) + PID	Garrett	11/1/2003
8069-7	RAE Systems	Multi RAE	095-513115	4 gas meter (CO, H2S, O2, LEL) + PID	Dispatch	11/1/2003
8069-8	RKI Instruments	Eagle	E44060	4 gas meter (CO, H2S, O2, LEL)	Dispatch	11/1/2003
8069-9	RKI Instruments	Eagle	E44063	4 gas meter (CO, H2S, O2, LEL)	Dispatch	11/1/2003
8069-10	RKI Instruments	Eagle	E44054	4 gas meter (CO, H2S, O2, LEL)	Woodhall	11/1/2003
8069-11	RKI Instruments	Eagle	E07064	4 gas meter (CO, H2S, O2, LEL)	Safety Office	11/1/2003
8069-12	RKI Instruments	Eagle	E47107	4 gas meter (CO, H2S, O2, LEL)	Dispatch	11/1/2003

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SAFETY EQUIPMENT

ID#	Identification	Specification	Storage	Home Base	Maintained	Date Acquired
9086	Allegro	8300 Vest	N/A	Vortex cooling vests (QTY 20)	Dispatch	
9085-1	DBI/Sala	Tripod - 8000010		9 ft. Aluminum Tripod; can withstand up to 5,000 lbs. of	Yard Container	
9085-2	DBI/Sala	Tripod - 8000010		9 ft. Aluminum Tripod; can withstand up to 5,000 lbs. of	Yard Container	
9085-3	DBI/Sala	Tripod - 8000010		9 ft. Aluminum Tripod; can withstand up to 5,000 lbs. of	Yard Container	
9066-1	Draeger	Hazmat Kit	N/A	Complete hazmat kit	Dispatch	
9066-2	Draeger	Hazmat Kit	N/A	Complete hazmat kit	Dispatch	
9066-3	Draeger	Hazmat Kit	N/A	Basic hazmat kit	Dispatch	
9066-3	Draeger	Hazmat Kit	N/A	Simultest kit	Dispatch	
	Guardian Equipment	AquaGuard G1540	N/A	Gravity-flow eye wash, 16 gallon portable	Yard Container	
8069-13	Industrial Scientific Corp.	ATX-612	0105377-105	4 gas meter (CO, H2S, O2, LEL)	Creighton	
	Lakeland Industries, Inc	LK-TK640W Level A Suits	N/A	(4) XL wide view front opening suits w/ Hansen pass thr	Yard Container	
	Lakeland Industries, Inc	LK-TK640W Level A Suits	N/A	(3) XXL wide view front opening suits w/ Hansen pass th	Yard Container	
	Lakeland Industries, Inc	LK-TK640W Level A Suits	N/A	(3) XXXL wide view front opening suits w/ Hansen pass	Yard Container	
	Lakeland Industries, Inc	TK-497 Level A Training Su	N/A	(2) XL Level A training suits	Safety Storage	
	Lakeland Industries, Inc	TK-497 Level A Training Su	N/A	(2) 2XL Level A training suits	Safety Storage	
	Lakeland Industries, Inc	TK-497 Level A Training Su	N/A	(2) 3XL Level A training suits	Safety Storage	
7112	Lifeair Respiratory Systems	L-505 EEBA	S/N-110603	2015psi/5min	Yard Container	
7112	Lifeair Respiratory Systems	L-505 EEBA	S/N-080304	2015psi/5min	Yard Container	
7112	Lifeair Respiratory Systems	L-505 EEBA	S/N-102914	2015psi/5min	Yard Container	
7112	Lifeair Respiratory Systems	L-505 EEBA	S/N-110568	2015psi/5min	Yard Container	
7112	Lifeair Respiratory Systems	L-505 EEBA	S/N-080268	2015psi/5min	Underground	
7112	Lifeair Respiratory Systems	L-505 EEBA	S/N-080316	2015psi/5min	Underground	
7112	Lifeair Respiratory Systems	L-505 EEBA	S/N-080331	2015psi/5min	Yard Container	
7112	Lifeair Respiratory Systems	L-505 EEBA	S/N-080341	2015psi/5min	Yard Container	
7112	Lifeair Respiratory Systems	L-505 EEBA	J20979	2015psi/5min	Yard Container	
7112	Lifeair Respiratory Systems	L-505 EEBA	S/N-071142	2015psi/5min	Yard Container	
7112	Lifeair Respiratory Systems	L-505 EEBA	S/N-110560	2015psi/5min	Yard Container	
7112	Lifeair Respiratory Systems	L-505 EEBA	S/N-071188	2015psi/5min	Yard Container	
7112	Lifeair Respiratory Systems	L-505 EEBA	S/N-080251	2015psi/5min	Yard Container	
7112	Lifeair Respiratory Systems	L-505 EEBA	S/N-102872	2015psi/5min	Yard Container	
7112	Lifeair Respiratory Systems	L-505 EEBA	S/N-071155	2015psi/5min	Yard Container	
7112	Lifeair Respiratory Systems	L-505 EEBA	S/N-080334	2015psi/5min	Yard Container	
7112	Lifeair Respiratory Systems	L-505 EEBA	S/N-071159	2015psi/5min	Yard Container	
7112	Lifeair Respiratory Systems	L-505 EEBA	S/N-071120	2015psi/5min	Yard Container	
SCBA 30	SCOTT Health & Safety	SCBA	WK368213	2216psi/30min - Spare Cylinder	Yard Container	
SCBA 30	SCOTT Health & Safety	SCBA	WK389665	2216psi/30min - Spare Cylinder	Yard Container	
SCBA 30	SCOTT Health & Safety	SCBA	T209649	2216psi/30min - Spare Cylinder	Yard Container	
SCBA 60	SCOTT Health & Safety	SCBA	OP14826	4500psi/60min - Spare Cylinder	Yard Container	
SCBA 60	SCOTT Health & Safety	SCBA	OP16530	4500psi/60min - Spare Cylinder	Yard Container	
SCBA 30	SCOTT Health & Safety	SCBA Air Pack 2.2	WK398327	2216psi/30 min	Yard Container	
SCBA 30	SCOTT Health & Safety	SCBA Air Pack 2.2	T226984	2216psi/30 min	Yard Container	
SCBA 60	SCOTT Health & Safety	SCBA Air Pack 4.5	OP49993	4500psi/60min	Tech.Rescue	
SCBA 60	SCOTT Health & Safety	SCBA Air Pack 4.5	OP46983	4500psi/60min	Tech.Rescue	
SCBA 60	SCOTT Health & Safety	SCBA Air Pack 4.5	OP46991	4500psi/60min	Tech.Rescue	
SCBA 60	SCOTT Health & Safety	SCBA Air Pack 4.5	OP48663	4500psi/60min	Yard Container	
SCBA 60	SCOTT Health & Safety	SCBA Air Pack 4.5	OP46980	4500psi/60min	Yard Container	
SCBA 60	SCOTT Health & Safety	SCBA Air Pack 4.5	59300060	4500psi/60min	Yard Container	
SCBA 60	SCOTT Health & Safety	SCBA Air Pack 4.5	29701064	4500psi/60min	Yard Container	
SCBA 60	SCOTT Health & Safety	SCBA Air Pack 4.5	5821822	4500psi/60min	Yard Container	
SCBA 60	SCOTT Health & Safety	SCBA Air Pack 4.5	8801159	4500psi/60min	Yard Container	
7112	SCOTT Health & Safety	Ska Pak	A27401	2216psi/5 min	Tech.Rescue	

7112	SCOTT Health & Safety	Ska Pak	A33890	2216psi/5 min	Tech.Rescue	
7112	SCOTT Health & Safety	Ska Pak	A071514	2216psi/5 min	Tech.Rescue	
7112	SCOTT Health & Safety	Ska Pak	A33970	2216psi/5 min	Tech.Rescue	
7112	SCOTT Health & Safety	Ska Pak	A05098	2216psi/5 min	Tech.Rescue	
7112	SCOTT Health & Safety	Ska Pak	A27312	2216psi/5min	Yard Container	
7112	SCOTT Health & Safety	Ska Pak	A076693	2216psi/5min	Yard Container	
7112	SCOTT Health & Safety	Ska Pak	A33996	2216psi/5min	Yard Container	
7112	SCOTT Health & Safety	Ska Pak	A33981	2216psi/5min	Yard Container	
7112	SCOTT Health & Safety	Ska Pak	A33906	2216 psi/5min	Yard Container	
7112	SCOTT Health & Safety	Ska Pak	A27252	2216psi/5min	Yard Container	
	TSI Incorporated	Portacount Plus 8200	80248010	respirator fit testor	Safety Office	
7090	Cascade Air System		yard trailer			

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MISCELLANEOUS ITEMS

ID#	Identification	Specification	Storage	Home Base	Maintained	Date Acquired	
3104	ATV trailer	hauls 6 x 4's	South Yard	Long Beach	N/A	91/1997	
A4134	Burning Unit	Oxygen/Acetylene	South Yard	Long Beach	N/A	1/15/2003	
A4135	Chipping Gun	Pneumatic	Cont #11	Alameda	N/A	1/15/2003	
A4136	Chain Saw	Gas, 18"	1130 (Excursion)	Long Beach	N/A	1/15/2003	
A4137	Chain Saw	Small Drills, Saws, Etc.	Yard Container	Long Beach	N/A	1/15/2003	
A4138	Sawzall (2)	Various	Yard Container	Long Beach	N/A	1/15/2003	
A4140	Hand Tools	Various	Cont. #3	Long Beach	N/A	1/15/2003	
4998	Truck mounted winch	Electric, 10,000 lb. capacity	Shop	Long Beach	Quarterly	1/15/2003	
9067	Wire Feeder - Welder	Portable Welding Unit	Ken Woodhall	Long Beach	N/A	1/15/2003	
6392	Decon Pool	20' x 100'	Yard	Long Beach	Quarterly	11/1/2003	
6392	Decon Pool	25"x50"	Yard	Long Beach	Quarterly	4/25/2007	
6392	Decon Pool	25'x50'	Yard	Long Beach	Quarterly	11/1/2003	
9080	ATV	Honda, 4x4	Yard	Long Beach	Quarterly	11/1/2003	
9081	ATV	Honda, 4x5	Yard	Long Beach	Quarterly	11/1/2003	
9082	ATV	Honda, 4x6	Yard	Long Beach	Quarterly	11/1/2003	
9163	Backhoe	2008 Joh Deere	Yard	Long Beach	Quarterly	9/8/2008	
9070	Backhoe	John Deere 710	Yard	Long Beach	Quarterly		
9165	Compact Track Loader	John Deere CT322	yard	Long Beach	Quarterly	9/8/2008	
9709	Vactor Ramps	15 Ton	Yard	Long Beach	Quarterly	1/15/2003	
NBMI-001	Boom Inflator	Leaf Blower	Cont #11	Long Beach	Quarterly	1/15/2003	
A9711	Multi-Purpose Saw	14" 2-Cycle	Con't #10	Alameda	Quarterly	1/16/2003	
9712	Chop Saw		Shop	Long Beach	Quarterly	1/15/2003	
6491	Water Buffalo	200 gal water trailer	Yard	Long Beach	Quarterly	Jun-06	
	Ratchet Straps	2"X27'	Yard Container	Long Beach	Quarterly		
	Roto Hammer	Hitatchi	Yard Container	Long Beach	Quarterly		
	Belt Sander	Black & Decker	Yard Container	Long Beach	Quarterly		
	18V Cordless Drill	Miluawkee	Yard Container	Long Beach	Quarterly		
9138	Forklift	Komatsu 25	Yard	Long Beach	Quarterly		
9137	Forklift	Caterpillar 40	Yard	Long Beach	Quarterly		
9135	Stainless Steel Tote, 350 Gal.	DOT 57 Design PSIG 9.5	Yard	Long Beach	Quarterly		
9136	Stainless Steel Tote, 350 Gal.	DOT 57 Design PSIG 9.6	Yard	Long Beach	Quarterly		

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Certificates for contractual services following this page:

- Clean Seas Certificate
- Clean Seas EMT Certificate
- Clean Seas L-96 Pipeline Certificate
- NRC Environmental Services (MSA) Contract

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CERTIFICATE OF CONTRACTUAL SERVICES

CLEAN SEAS, LLC

Issued to:

VENOCO, INC.

as a Member of Clean Seas, LLC for activities involving oil production and/or transportation of oil to facilities in or near the marine waters within the Clean Seas' Area of Response in accordance with the current Clean Seas Operating Agreement for ensuring the availability of the personnel and/or equipment on a 24-hour per day basis. The contractual services provided shall remain in effect from January 1, 2014, until properly terminated, or December 31, 2014, whichever shall first occur.

CLEAN SEAS, LLC
Carpinteria, California

By: _____

Name: G.E. Ikerd

Title: General Manager

Dated: January 3, 2014

CERTIFICATE OF CONTRACTUAL SERVICES

CLEAN SEAS, LLC

Issued to:

VENOCO, INC.

ELLWOOD ONSHORE FACILITY & OIL TRANSFER PIPELINE (L-96)

as a Shore Based Facility requested to be covered by Venoco, Inc., who is a Member of Clean Seas, LLC with activities involving the production and/or transportation of oil in or near the marine waters to facilities in the Clean Seas' Area of Response in accordance with the current Clean Seas Operating Agreement. The contractual services provided shall remain in effect from January 1, 2014 until properly terminated, or December 31, 2014 whichever shall first occur.

CLEAN SEAS, LLC
Carpinteria, California

By: _____

Name: G.E. Ikerd

Title: General Manager

Dated: January 3, 2014

CERTIFICATE OF CONTRACTUAL SERVICES

CLEAN SEAS, LLC

Issued to:

VENOCO, INC.

LINE 96

as a Shore Based Facility requested to be covered by Venoco, Inc., who is a Member of Clean Seas, LLC with activities involving the production and/or transportation of oil in or near the marine waters to facilities in the Clean Seas' Area of Response in accordance with the current Clean Seas Operating Agreement. The contractual services provided shall remain in effect from January 1, 2014 until properly terminated, or December 31, 2014 whichever shall first occur.

CLEAN SEAS, LLC
Carpinteria, California

By: _____

Name: G.E. Ikerd

Title: General Manager

Dated: January 3, 2014

MSA # VM 08114

MASTER SERVICE AGREEMENT
Covering Well Services and General Services for the Onshore and Offshore Areas of the United States of America

EFFECTIVE DATE: November 25, 2008

CONTRACTOR: NRC Environmental Services Inc

__ a Washington corporation
__ a division of _____
__ a _____ limited liability company
__ a partnership
__ doing business as _____

COMPANY: Venoco, Inc.

a Delaware corporation

Contractor's Representative

Name: Tom Hale (805-331-0126)
Title: NRC Manager

Physical Address
Pier D, Berth D47
Long Beach, California 90802

P.O. Box Address (if any)
_____
_____

Telephone: (562) 432-1304
Facsimile: (562) 432-1826
E-mail: thale@nrces.com

Company's Representative

Name: Greg Sobanski
Title: Contracts/Purchasing Coordinator

Physical Address
370 17th Street, Suite 3900
Denver, CO 80202

P.O. Box Address (if any)
_____
_____

Telephone: (303) 626-8300
Facsimile: (303) 626-8315
E-mail: greg.sobanski@venocoinc.com

CONSPICUOUS AND FAIR NOTICE

BOTH PARTIES AGREE THAT THIS STATEMENT COMPLIES WITH THE REQUIREMENT, KNOWN AS THE "EXPRESS NEGLIGENCE RULE," TO EXPRESSLY STATE IN A CONSPICUOUS MANNER TO AFFORD FAIR AND ADEQUATE NOTICE THAT THIS AGREEMENT HAS PROVISIONS REQUIRING ONE PARTY (THE INDEMNITOR) TO BE RESPONSIBLE FOR THE NEGLIGENCE, STRICT LIABILITY, OR OTHER FAULT OF ANOTHER PARTY (THE INDEMNITEE).

BOTH PARTIES REPRESENT TO EACH OTHER (1) THAT THEY HAVE CONSULTED AN ATTORNEY CONCERNING THIS AGREEMENT OR, IF THEY HAVE NOT CONSULTED AN ATTORNEY, THAT THEY WERE PROVIDED THE OPPORTUNITY AND HAD THE ABILITY TO SO CONSULT, BUT MADE AN INFORMED DECISION NOT TO DO SO, AND (2) THAT THEY FULLY UNDERSTAND THEIR RIGHTS AND OBLIGATIONS UNDER THIS AGREEMENT.

Initial Here

Contractor:

NRC Environmental Services

By: _____

Its: General Manager

Tax I.D. No.: 91-1572532

Company:

Venoco, Inc.

By: _____

Its: VP Sac Basin Ops.

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H.1 RESOURCE REQUIREMENT ANALYSIS

Determination of the planning volumes for on water/onshore recovery and the quantity of response resources necessary for the three-tiered response to a worst case discharge is provided in Appendix Q for OSPR, Appendix R for DOT/PHMSA, Appendix S for EPA, and T for USCG. Venoco is a member of Clean Seas, which has sufficient response resources to meet both the Federal and State response thresholds. Clean Seas is committed to maintaining its equipment in good working order such that it can perform according to specifications. In addition, Clean Seas has access to additional offshore resources which may be cascaded into its area from other cooperatives. Venoco also maintains a contract with NRC Environmental Services for onshore response, which will be activated, as needed.

In the event of a spill from Venoco's facilities, primary response would come from Venoco with Clean Seas' Southern OSRV capable of deploying boom within one hour. Clean Seas can initiate recovery within two hours of discovery of a spill. Its skimmer can be deployed in 5-to-6-foot seas, and can operate in 8-to-10-foot seas and 20-knot winds. Venoco would further rely on Clean Seas to provide secondary and tertiary oil spill response.

For an onshore spill, primary response would come from Venoco with NRC providing immediate response and clean-up capabilities, and Clean Seas providing additional resources and any on water response. Venoco can initiate spill assessment and initial response actions within one hour with NRC capable of responding within two hours to the furthest pipeline location.

H.2 TRANSPORTATION OF REQUIRED EQUIPMENT, PERSONNEL AND OTHER RESOURCES TO THE SPILL SITE

H.2.1 Personnel

- Company personnel on the response team will arrive by personal or Company vehicles or aircraft if out of the region.
- CS, NRC., and other contract cleanup companies will arrive by personal vehicle, Company vehicle, or aircraft and rental vehicles.

H.2.2 Equipment

- CS, NRC and other contract cleanup companies' response equipment will be transported (towed) to the spill site by trucks. The equipment is strategically stationed within their spheres of influence.
- OSRVs will provide all on-water transportation to the spill site, if necessary. CS' Southern OSRV is normally moored in Santa Barbara Harbor. This vessel has extensive oil spill response equipment onboard. Trained personnel operate and deploy equipment from the vessel.

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H.2.3 Transportation During Adverse Environmental Conditions

Adverse environmental conditions (i.e., weather, sea state, tides, wind currents) are not expected to affect the effort most of the year. Mild, wet winters and warm dry summers typify the climate. Winds are normally light to moderate. The currents along the West Coast are dominated by the southward flowing California Current with a mean speed of about 0.2-to-0.5 knots. Waves are usually less than 2 feet high and have periods of less than 9 seconds. Winter waves tend to be 6 feet or less. Heavy rains and flooding may impact primary and secondary roads, and reduce access to off-road locations.

During adverse weather periods when sea states, tides, winds, and/or currents are adverse, the transportation of personnel and equipment may be hampered or halted altogether. The presence of debris or other obstacles in the water, on roads and along the shoreline could restrict response efforts. The decision to deploy personnel and equipment in inclement weather will ultimately rest with the Unified Command; and with input from the Captains of the OSRVs and the Safety Officer.

While waiting for the adverse environmental condition(s) to subside, the Incident Commander and response personnel will prepare and plan for response operations. Activities may include monitoring the status of the spill, staging equipment and/or personnel at strategic areas that are safe to access, protecting sensitive areas that may be impacted, if safe to do so, and removing debris from potential impact areas.

H.3 PROCUREMENT AND RESPONSE TIMES FOR OIL SPILL RESPONSE ORGANIZATIONS (ACP 2008: Sec 5210.1)

Estimated procurement and response times for Clean Seas (CS) are provided in Table H-1. The Company, together with CS, has the necessary resources to provide the required three-tiered response to a worst case discharge. The times are approximate. Actual response times may vary due to sea/current conditions or activities engaged in at the time of the spill notification call (e.g. resupply, refueling, training, minor maintenance). Response times are based on average vessel speed of 10 knots, and allow 20 minutes to warm up the engines and get off the mooring buoy. Mobilization times for equipment and personnel of other response contractors are included in Section 5210.1 of the ACP. An equipment list is included in Appendix F of this Plan.

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Table H-1. Estimated Procurement and Response Times for Clean Seas.

OSRO	Location	Procurement Time for Containment Recovery, and Storage Equipment	Procurement Time for Equipment Transportation Vessels	Equipment Loadout Time	Travel Time to Deployment Site	Equipment Deployment Time
CS	Carpinteria	5-to-10 minutes	Included in equipment procurement	0-to-2.0 hours	1.0-to-3.0 hours	0.5 hours
Notes: Times provided are best estimates and may vary depending on weather and other circumstances. Procurement for equipment and vessel(s) is made with a single call to the OSRO.						

NRC branch office in Ventura Ca. allows them to respond efficiently in the event of an incident. Venoco will activate NRC to provide oil spill response, shoreline and on land cleanup services, NRC's response time to mobilize and travel to the spill scene is two hours or less.

NRC has extensive resources and response equipment stockpiled from Eureka to San Diego along the coast and through the Central Valley. Resources in Southern California are positioned in Long Beach/Los Angeles and San Diego.

A description of all oil spill transfer and disposal equipment is listed in Section F for Clean Seas and NRC Environmental.

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H.4 OIL SPILL TRAJECTORY MODELING USING GNOME

Oil Spill trajectory modeling was conducted using the NOAA GNOME model. GNOME is unique among trajectory models because it allows the user to see the uncertainty in each trajectory. For example, weather forecasts may be wrong in the wind speed, direction, or timing. GNOME takes this into account and provides two solutions to an oil spill scenario: (1) a “best guess” or forecast trajectory and (2) a “minimum regret” or uncertainty trajectory.

The “best guess” solution shows the model result with all of the input data assumed to be correct. However, models, observations, and forecasts are not always perfect. Consequently, GNOME has incorporated an understanding of uncertainties that can occur. The second solution allows the model to predict other possible trajectories that are less likely to occur, but which may have higher associated risks. GNOME calls the trajectory that incorporates these uncertainties the “minimum regret” solution because it gives the user information about areas that could be impacted if different input data were specified.

Both trajectories are represented by “splots”, which are statistically independent pieces of the modeled pollutant. They appear as small “pollutant particles” on a map when the spill trajectory is run. The “best guess” trajectory is represented by black “splots”; the “minimum regret” trajectory is represented by red “splots.”

Santa Barbara Channel (SBC) is a coastal area where the circulation is constantly changing. The local winds are highly variable, and the channel is located within the Southern California Bight, where cold, upwelled water meets warmer water from farther south. The current field here is complex, with eddies and meanders on the scale of 30 mi (50 km). As a result, currents along the southern islands and northern continental coast can often flow in the opposite directions or even at right angles to one another.

Oceanographers have defined three distinct circulation patterns that can occur within the Santa Barbara Channel:

1. UPWELLING STATE

The upwelling state is named for the upwelling of cold (approximately 11°C) subsurface waters near Pt. Conception that often accompanies this state. The upwelling state occurs primarily in spring, although it has also been observed in other seasons. In terms of the conceptual models of the momentum balance, the upwelling state occurs when strong (>10 m/s), persistent (several days or more), upwelling favorable (equatorward) winds overwhelm any poleward, along-shelf pressure gradient.

Currents: The most characteristic feature of the resulting flow field is southward flow at the western entrance to the SBC, which continues eastward from San Miguel to Santa Cruz and out the eastern SBC entrance. However, even during upwelling, the flow can be weakly (10 cm/s)

westward on the mainland coast of the SBC. While there can be a cyclonic (counterclockwise) recirculation in the western channel during upwelling, the southern limb of the circulation is almost always stronger than the northern limb. Weaker velocities tend to occur in the eastern SBC over the broad shelf between Port Hueneme and Santa Barbara and in the SMB within 5 km of the coast. Within the SMB, the strongest (20 cm/s) velocities are observed over the 100 m isobath between Purisima Pt. and Pt. Arguello, where strong southward velocities are observed. Very weak velocities (<10 cm/s) are often observed within 5 km of the shore in San Luis Obispo Bay and between Pt. Sal and Purisima Pt. During upwelling, velocity fluctuations (relative to the mean upwelling state) are strongest southwest of Pt. Conception. This may be an expression of the tendency for an upwelling jet to fluctuate in direction and speed during upwelling. The weakest fluctuations are found over the northeast SBC shelf between Santa Barbara and Ventura, as well as the above-mentioned nearshore regions (within 5 km) of the SMB coast.

Winds: During upwelling, the wind field tends to show strong velocities (10 m/s) from the northwest (to the southeast) south of Pt. Conception at NDBC 46054. Within the SMB, winds are generally onshore and equatorward. Within the eastern SBC, winds can be relatively weak.

Sea-Surface Temperatures: When available, satellite sea-surface temperature images often show cold water (11-12°C) between Pt. Arguello and Pt. Conception. Cooler water can be seen spreading southward from Pt. Conception past San Miguel Island and eastward from San Miguel towards the eastern entrance to the SBC.

2. CONVERGENT STATE

The convergent state is named for the convergence of southward flow west of Pt. Arguello with westward flow south of Pt. Conception. The convergent state occurs primarily in summer, although it has also been observed in other seasons. In terms of the conceptual models of the momentum balance, the convergent state tends to occur when upwelling favorable winds and a strong poleward, along-shelf pressure gradient exist.

Currents: The most characteristic feature of the resulting flow field is a strong cyclonic recirculation in the western SBC with about equal strength in the northern and southern limbs of the recirculation. During the convergent state, velocities in the western SBC are often 40 cm/s or more, up to 70 cm/s. While northwestward flow at the eastern entrance to the SBC often occurs during the convergent state, northeastward flow directly across the eastern entrance to the SBC can also occur. The convergent synoptic state averages are accompanied by southward flow in the SMB near the shore and off-shelf flow further away from the coast. The combination of westward flow at the northeast SBC entrance and southward flow along the SMB coast is associated with convergence and offshore flow southwest of Pt. Conception. Relative to the upwelling state, stronger velocities are observed in the western SBC and in most of the SMB. The highest velocity fluctuations are observed at the western entrance to the SBC. The lowest

velocity fluctuations are again found between Santa Barbara and Ventura and in San Luis Obispo Bay.

Winds: In the convergent state, the wind field can resemble the upwelling wind field, although this is not diagnostic; weak winds sometimes accompany the convergent state, but not always. The average winds at NDBC 46054 during convergence are nearly equal to those observed in upwelling, above 7 m/s from the northwest (to the southeast).

Sea-Surface Temperatures: In the convergent state, satellite sea-surface temperature images often show warm water (17-20°C) extending from the eastern SBC north and westward along the mainland coast. South of Pt. Conception, this warm water turns south and, in exceptionally clear images, a counterclockwise recirculation of warm water can often be discerned. Cold, upwelled waters are still present between Pt. Conception and Pt. Arguello, often with tongues of cold water reaching westward or southwestward.

3. RELAXATION STATE

The relaxation state is named for the time periods when winds off Pt. Conception "relax" from their usual equatorward direction. The relaxation state occurs primarily in fall and early winter. In terms of the conceptual models of the momentum balance, the relaxation state occurs when poleward, along-shelf pressure gradients overwhelm upwelling favorable or weak winds.

Currents: The most characteristic feature of the resulting flow field is a strong westward flow (>50 cm/s) through the SBC and into the SMB. Flow in the SMB is strongest along the mainland coast. Cyclonic recirculation in the western SBC is often present, but with a northern limb strengthened with respect to the southern limb. Poleward flow continues out the western entrance to the SBC into the SMB. Within the SMB, the strongest poleward averages are found offshore of the 100 m isobath, where there is generally an offshore, in addition to poleward, component of flow. Closer to shore in the SMB, the flow velocity averages are weaker poleward flow and, in some nearshore locations, southward flow.

The highest velocity fluctuations occur west of Pt. Conception in the region where the westward flow from the SBC is turning poleward into the SMB. A secondary maximum in the western SBC occurs where recirculating cyclonic flow rejoins the westward flow along the mainland coast. The lowest velocity fluctuations are again found between Santa Barbara and Ventura and in San Luis Obispo Bay.

Winds: Winds during relaxation tend to be either weak and variable or poleward. That is, weak or northwestward winds are usually seen at NDBC 46054 at the western entrance to SBC.

Sea-Surface Temperatures: Satellite sea-surface temperature images during relaxation will often show warm water (17-20°C) extending from Pt. Conception northwestward into the SMB.

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Example Runs

The worst case release of 6,500 bbls was used as the release size for all the modeling runs. All releases were assumed to occur from the mid-point of Platform Holly which is 34º 23'23.2" N and 119º 54'19.7" W. To be conservative, all releases were assumed to be non-weathering oil.

Three runs were made, one for each of the circulation patterns. Constant wind speed and directions were used based on the most likely case for each of the circulation patterns as presented below. Each scenario was run for 72 hours. In the event of an actual spill, GNOME can be run real time using real time data.

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I.1 INTRODUCTION (ACP 2008: Sec 3200 through 3240.9)

The feasibility of effectively implementing containment and recovery techniques is generally dependent on the size of the spill, the type of spill material, available logistical resources, implementation time, and environmental conditions in the spill area. The procession of each major stage of spill response operations from spill discovery to completion is shown in Figure I-1.

Venoco will rely both on Clean Seas' and NRC's equipment and expertise to contain and recover spilled oil. Equipment lists and contractual agreements are provided in Appendix F and G, respectively.

The Clean Seas maintains general containment and recovery operation practices, including primary containment and oil recovery techniques. The Area Contingency Plan (ACP), Section 3000, provides a description of various oil containment, recovery and removal methods available to the Unified Command System (UCS) during a spill response. Utilizing cooperative/contractor-owned equipment, the following methods for containing spilled oil and removing it from the environment will be used, if it is safe to do so.

I.2 OPEN-WATER RESPONSE AND CLEANUP STRATEGIES (ACP 2008: Sec 3230)

Should a spill occur from a platform, pipeline, or crew/supply vessel, rapid containment is vital to minimize the spread of oil. Containment booms that can be rapidly deployed are available from Clean Seas (see Appendix F for a listing of CS' equipment). Once a spill reaches the ocean, it will generally move in the direction of the wind and/or current. The spill could move offshore or along the shoreline.

I.2.1 Open-Water Cleanup

Oil removal/recovery in open water is accomplished through the use of skimming devices. Once the oil is contained, CS will provide the expertise and personnel for open water oil recovery. CS OSRVs the Mr. Clean III, Clean Ocean and Clean Sweep with associated Boom Support Vessels provide containment and recovery of the oil.

I.2.1.1 Open-Water Cleanup for Contained Spills

A floating skimmer placed inside the boomed area best cleans a spill that is fully contained by booms. The oil will tend to concentrate against the boom in the direction of the wind and current. The skimmer should be placed in this area and continually moved to skim the thickest area. When skimming becomes inefficient (after most of the spill has been removed, or for small spills; that is, spills less than one barrel), sorbent booms, pads, or rolls may be used. Loose sorbent materials should be avoided.

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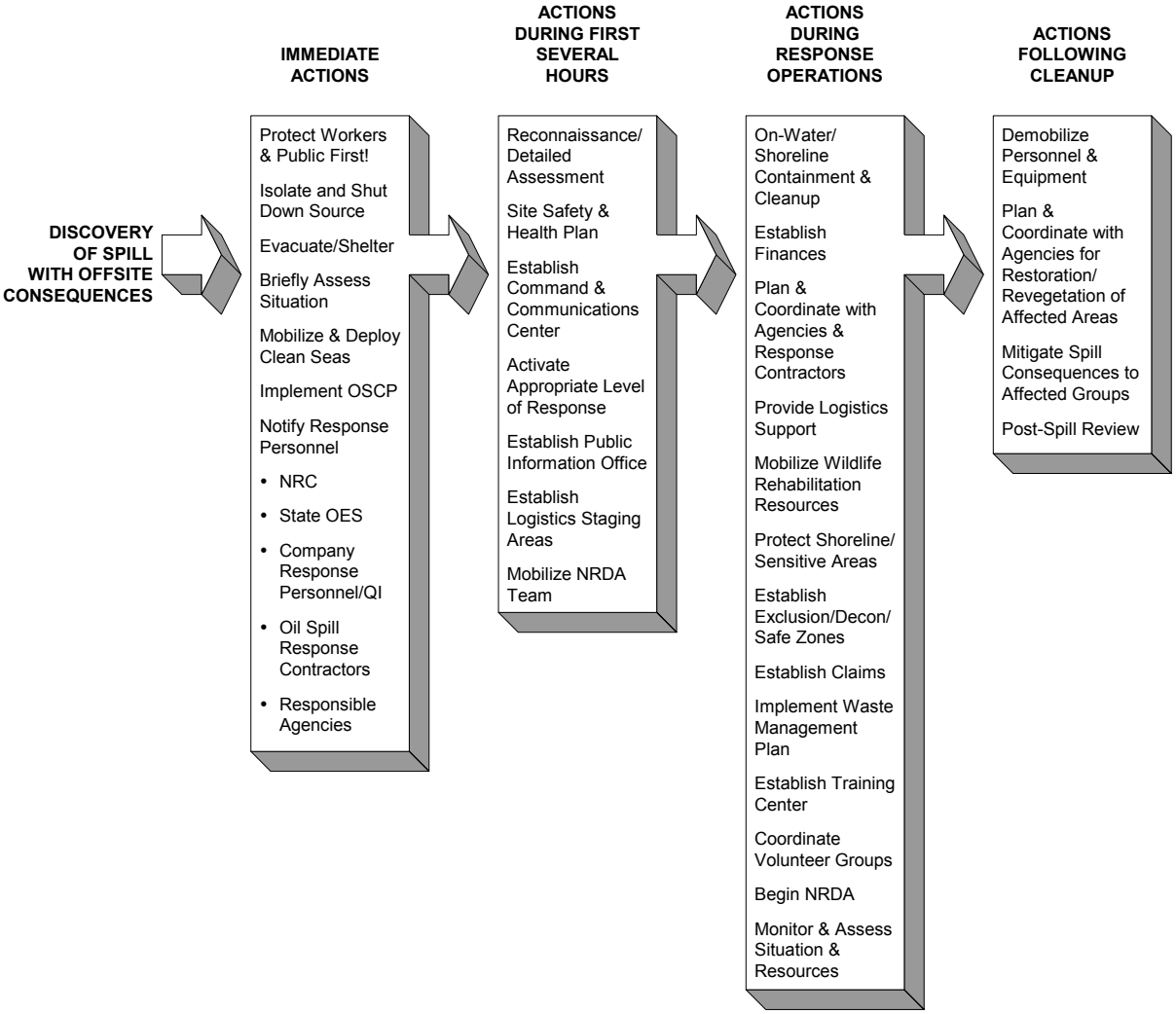
Figure I-1. Oil Spill Response Flowchart.

Note: Response actions implemented will depend on the magnitude and extent of the spill incident



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I.2.1.2 Open-Water Cleanup for Uncontained Spills

Uncontained spills form slicks which will continue to spread and move freely according to prevailing winds and currents. The primary method of recovering large, uncontained spills involves the use of deploying ocean boom. The boom is deployed in 1000' "U" shaped sections by boom boats directed by CS overflights. The boom boats collect and hold the oil until the CS skimming vessels arrive.

The skimming barriers are deployed in a "U" shape from both sides of the response vessel, with the outer ends of the barriers attached to outrigger booms. The booms are fixed to the rails of the vessel and secured by guy wires fore, aft, and vertically to a mast at the center of the vessel. Skimming speeds should not exceed 1-to-1.5 knots to avoid entrainment of oil under the barrier. Skimming should begin on the downwind side of the slick and move across the slick, staying on the downwind side.

Skimming equipment that can be used for open water skimming of uncontained spills, with booms, is available from CS' response vessels or storage locations.

I.3 SHORELINE RESPONSE AND CLEANUP STRATEGIES (ACP 2008: Sec 3240)

I.3.1 Areas of Potential Impact (ACP 2008: Sec 3812 & 9813)

Potential spill trajectories and spill pathways are discussed in Appendix Q.

I.3.2 Shoreline Protection

The ability to predict the direction and rate of movement of spilled oil is critical to identifying sensitive resources that may be impacted and determining the type of shoreline protection strategies to implement.

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The Planning Section is responsible for providing response operations with daily information on:

- Probable beach impact area(s).
- Protective booming to provide protection of sensitive resource areas.
- Wildlife sensitivity areas.
- Debris removal.
- Special access and equipment deployment requirements.
- Protective booming installations and maintenance.

Table I-1 summarizes the applicability and resource requirements for the following shoreline protection techniques:

- Diversion booming.
- Exclusion booming.
- Containment booming.
- Sorbent booms/barriers.
- Beach berming.
- Beach sumps.

The 11th Coast Guard District has developed specific plans and procedures for the placement of booms to protect sensitive areas. Additional information on sensitive areas is also provided in Appendix M.

In the event that an area or areas is/are threatened as a result of a spill, Venoco will rely on the expertise of CS to plan and implement shoreline protection response actions. The Company understands that all response actions are subject to approval of the Unified Command which includes, in addition to Venoco, the Federal On-Scene Coordinator, the State Incident Commander (DFG/OSPR), and the Local Government Incident Commander.

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Table I-1. Applicability and Resource Requirements for Shoreline Protection Techniques.

Response Technique	Applicability	Resource Requirements
Diversion Booming	• Low energy shorelines in currents exceeding one knot • Deflect/divert oil to/away from shoreline	• Curtain boom (approx. 1,500 ft, length depends on width of approaching slick and/or area of shoreline to be protected) • Boom deployment boat (shallow draft) • Anchor, tension cables, hand tools • Sorbents and plastic bags • 9 people
Exclusion Booming	• Entrance to harbors, marinas, breakwaters, inlets	• Curtain boom (1,000-to-1,500 ft) • Boom deployment boat (20 ft) • Anchor, tow lines, hand tools • Truck • Sorbents and plastic bags, pump and storage tanks • 9 people
Containment Booming	• Open water to surround approaching oil slick	• Containment boom • Boom deployment and tending boats • Anchor, tow lines, hand tools • Skimmer, pump and storage tanks • 9 people
Sorbent Booms/ Barriers	• Entrance to wetlands • Control entrance of oil into wetlands and movement of oils within wetlands	• Sorbent boom/barrier (4 times as long as width of the waterway when currents present) • Small boat • Fencing, pipe supports, cable sorbent, hand tools, plastic bags • 6 people
Beach Berming	• Mid-intertidal zone of a beach • Prevent spread of oil contam-ination to backshore areas • Only effective for 1 or 2 tidal cycles	• Motor grader • Bulldozer • Hand tools • 3 people
Beach Sumps	• Shoreline with some longshore drift, wave action cannot be extreme, small tidal range • Prevent oil migration down beaches	• Backhoe • Vacuum truck • Tank truck • Hand tools, suction hoses • 3 people

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I.3.3 Shoreline Cleanup (ACP 2008: Sec 3240)

Once a shoreline area is affected by spilled oil, it will be necessary to determine the most effective cleanup technique to use, while at the same time minimizing secondary environmental impacts. The technique selected will depend on a number of factors, including:

- Safety considerations
- Characteristics of the oil (e.g., degree of emulsification, weathering).
- Type of shoreline affected.
- Degree and extent of oiling of the affected shoreline.
- Accessibility of the shoreline.
- Sensitivity of the shoreline.

The ACP provides guidance on the types of cleanup techniques that could be applied to shorelines. The extent (in miles) of the different shoreline types from Santa Barbara to Port Hueneme, and Santa Cruz and Anacapa Island are summarized in Table I-2 and illustrated graphically in the maps in Appendix M.

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Table I-2. Shoreline ESI Type Summary.

Area Name	Total Miles	ESI Type[1] (Statute Miles)									
		1	2	3	4	5	6	7	8	9	10
Santa Barbara	9.0	0.6	1.4	3.7	1.4	1.0	0.9	0.0	0.0	0.0	0.0
Carpinteria	13.3	0.5	0.8	6.2	0.0	0.8	4.2	0.0	0.2	0.6	0.0
White Peak Ledge	3.2	0.0	0.9	0.9	0.0	0.6	0.8	0.0	0.0	0.0	0.0
Pitas Point	9.7	0.0	0.0	4.4	0.0	2.0	3.3	0.0	0.0	0.0	0.0
Ventura	13.3	0.0	0.0	1.3	3.5	4.8	3.3	0.0	0.4	0.0	0.0
Oxnard	17.0	0.0	0.0	0.0	8.1	0.0	3.5	0.0	5.3	0.1	0.0
Point Mugu	14.9	0.2	0.0	0.0	10.2	0.0	3.5	0.0	0.0	1.0	0.0
Mainland Subtotal	80.4	1.3	3.1	16.5	23.2	9.2	19.5	0.0	5.9	1.7	0.0
Santa Cruz Island	78.2	37.5	17.4	0.0	5.8	11.4	5.5	0.0	0.7	0.0	0.0
Anacapa Island	11.9	7.4	2.3	0.0	0.0	0.2	2.0	0.0	0.0	0.0	0.0
Island Subtotal	90.1	44.9	19.7	0.0	5.8	11.6	7.5	0.0	0.7	0/0	0.0
Total Miles	170.5	46.2	22.8	16.5	19.0	20.8	27.0	0.0	6.6	1.7	0.0

[1] Types:

		Persistence Potential
1	Exposed Wave-cut Cliffs, Seawalls, and Piers	Low
2	Exposed Wave-cut Platforms	Low
3	Fine to Medium-grained Sand Beaches	Low
4	Coarse-grained Sand to Gravel Beaches	Moderate
5	Mixed Sand and Gravel (or Shell Beaches	Low
6	Gravel Beaches and Rip-rap Structures	High
7	Exposed Tidal flats	Moderate
8	Sheltered Rocky Shores and Sheltered Manmade Structures	High
9	Sheltered Tidal Flats	Moderate
10	Salt Marshes	Very High

Reference: Based on OSPR Guidance Document.

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DFG/OSPR has also prepared a matrix (see Table I-3 below) showing the shoreline cleanup techniques to be used on the various shoreline types.

Table I-3. Cleanup Techniques and Shoreline Types.

Cleanup Technique[2]	Shoreline Types[1]									
	1	2	3	4	5	6	7	8	9	10
1. No Action	P	P	X	X	X	X	A	X	A	A
2. Manual Debris Removal	P	A	R	R	R	R	P	R	P	P
3. Passive Collection (sorbents)	R	R	R	R	R	R	R	R	R	R
4. Debris Removal with Heavy Equipment	X	X	A	A	A	P	X	A	X	A
5. Trenching (recovery wells)	X	X	P	P	P	P	X	X	X	X
6. Sediment Removal	X	X	S	P	P	P	X	X	X	X
7. Cold Water Flooding (deluge)	A	A	A	A	A	A	A	A	A	A
8. Cold Water Washing	X	X	X	X	X	X	X	X	X	X
(a) Low Pressure (<50 psi)	A	A	X	P	P	A	X	A	X	P
(b) High Pressure (50-100 psi)	A	X	X	P	P	A	X	X	X	X
9. Warm Water Washing (ambient to 90°F)	A	A	X	P	P	A	X	A	X	X
10. Hot Water Pressure Washing (>90°F)	A	X	X	X	X	P	X	X	X	X
11. Slurry Sandblasting	A	X	X	X	X	P	X	X	X	X
12. Vacuum	A	A	A	A	A	A	A	A	A	A
13. Cutting Vegetation[3]	X	X	X	X	X	X	X	P	X	P
14. Chemical Treatment[4]	X	X	X	X	X	X	X	X	X	X
(a) Oil Stabilization	X	X	P	P	P	X	P	X	X	X
(b) Protection of Beaches	X	P	P	P	P	P	X	P	X	X
(c) Cleaning of Beaches	X	P	P	P	P	P	X	P	X	X
15. Burning[4]	A	A	A	A	A	P	X	X	X	P
16. Nutrient Enhancement	X	X	A	A	A	X	P	A	A	P
17. Microbial Action[4]	X	X	A	A	A	X	P	A	A	P
18. Sediment Reworking[4]	X	X	A	P	P	P	X	X	X	X
19. Shore Removal and Replacement[4]	X	X	P	P	P	X	X	X	X	X

[1] See Table I-2, for shoreline types.

[2] Key:

R Recommended. May be preferred alternative. Method that best achieves the goal of minimizing destruction or injury to the environment.

A Applicable. Variable and possibly useful but may result in limited adverse effects to the environment.

P Possible. Effectiveness and possible harm to the environment would have to be carefully evaluated.

X Do not use.

[3] Cutting will depend upon the time of year. Consider only if re-oiling of birds is possible.

[4] Requires State approval of all cases. RRT approval also required for federalized spills.

Reference: Based on OSPR Guidance Document.

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A summary of the resources required to implement these cleanup techniques is provided in Table I-4.

Table I-4. Resource Requirements for Shoreline Cleanup Techniques.

Cleanup Technique	Resource Requirements
Manual Debris Removal	• Debris boxes, plastic bags, bins, hand tools (rakes, shovels, hand pumps • Light vehicle, shallow craft, helicopter • 10-to-100 people per mile • 1-to-3 supervisors per mile
Passive Collection (Sorbents)	• Snare boom • Fencing, pipe supports, cable, sorbent, hand tools, plastic bags • Small boat • 6 people
Sediment/Debris/Shore Removal with Heavy Equipment	• Dump trucks • Motor graders • Bulldozers • Front-end loaders • 1 equipment operator for each piece of equipment • 1 supervisor
Trenching	• Motor graders • Bulldozers • Dump trucks • 1 equipment operator for each piece of equipment • 1 supervisor
Shoreline Washing – Low Pressure (cold/warm water)	• Low pressure flushing unit • Seawater supply • Vacuum system • Sorbent pads • Storage for contained oil • Light vehicle • 2 boats • 3 operators per site
Shoreline Washing – High Pressure (cold water)	• High pressure flushing unit • Seawater supply • Vacuum system and 100 ft of boom • Sorbent pads • Storage for contained oil • Water heaters, power supply, header base, intake hoses • Vehicles • 2 small boats • 3 operators per site
Shoreline Washing – High Pressure (warm water)	• High pressure hot water pumps • 1,000-to-6,000 ft of boom • Light and heavy oil skimmers • 400-to-2,000 ft of hose of various diameters • 3 operators per site

Table I-4. Resource Requirements for Shoreline Cleanup Techniques.

Cleanup Technique	Resource Requirements
Slurry Sandblasting	• Sandblasting unit • Compressor • Sand supply truck • Front-end loader • Sand • Light vehicle, shallow craft, helicopter • 5-to-8 people
Vacuum Pumping	• Vacuum truck with suction hoses • Suction head, pump, storage tanks • Power source for portable units • 2-to-3 people per unit
Vegetative Cutting	• Cutting tools, collecting tools, plastic or burlap bags, rolls of ground cover • Light vehicle, shallow craft, helicopter • 5 crews of 10 workers each (4 workers with cutting tools and 6 with collecting tools) • 1 supervisor

Irrespective of the shoreline cleanup technique employed, the following general principles should be observed:

- Proper safety procedures should be followed. All workers must receive safety training, including appropriate HAZWOPER training in accordance with OSHA regulations.
- Oil trapped in booms should be picked up prior to the next tidal cycle.
- All food, trash, and waste should be removed from the shoreline daily, if possible, to minimize attracting scavengers into the contaminated area.
- All state and federal laws/policies, pertaining to wildlife protection and collection of live and dead animal parts from protected species, should be observed.
- Sensitive areas should be clearly delineated prior to deployment of equipment and personnel. Activity in a sensitive area should be restricted.
- All signs of human activity should be removed upon completion of treatment.
- Unaffected areas adjacent to shoreline treatment areas should be boomed off, where possible, to protect them from oiling during treatment operations.
- Impact to lower intertidal areas should be minimized. Sorbents should be employed below oiled upper beach faces to protect the lower intertidal zone from oiling.

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I.3.4 Restoration

Once cleanup has been completed, it may be necessary to restore areas impacted by a spill. Severe impacts include significant soil contamination, site disturbance that significantly alters the contour of the location, cleaning of contaminated vegetation, or removal of vegetation killed or seriously damaged by oil.

Typical restoration involves one or more of the following actions:

- Remove contaminated soil and dispose of it in an approved disposal site.
- Re-contour a site that was disturbed in cleanup activities, which may involve the importation of soil if substantial amounts have had to be removed.
- Wash vegetation to remove light oil residues.
- Cut and trim vegetation to remove more heavily contaminated foliage.
- Remove vegetation that is dead or not expected to recover.
- Re-seed or place replacement vegetation if a significant fraction of the existing ground cover was removed.
- Implement erosion control measures, such as applying jute mesh or hay bales, contour grading, seeding to stabilize slopes, applying rip-rap to erosion prone locations, etc.

Professional arborists, botanists, and/or landscape architects would be employed as appropriate to advise the Company in consultation with government agencies in the development and implementation of a Site Restoration Plan.

I.4 ON-LAND RESPONSE AND CLEANUP STRATEGIES

I.4.1 Source Control

Containment and control of an oil spill are the first and primary activities of any response effort. The object of source control is to stop the discharge, which may involve a range of activities, including:

- Closing a valve.
- Plugging a hole.
- Facility shutdown.

This is done to meet the primary goal of protection of the public, personnel, the environment, and property.

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Oil spill response and cleanup supplies are available at Ellwood Onshore Facility, Ellwood Pier and Platform Holly. Assistance is available from Clean Seas and NRC Environmental. Refer to Appendix F for equipment lists.

I.4.2 On-Land Containment and Recovery Strategies

General on-land response and recovery strategies are outlined below.

I.4.2.1 Earthen Berms or Dikes

Construct earthen berms, using whatever equipment is necessary to contain the oil in a readily accessible area. The collection point should allow vehicle access whenever possible.

I.4.2.2 Culverts

If an oil spill enters a small canal or dry waterway, a nearby downstream culvert can provide an efficient place to contain the spill. If the culvert has wing walls, it already restricts the channel and will provide good support for damming the flow. A solid covering can be used to block a pipe opening or box type opening. The contained oil can be removed using a vacuum truck and/or absorbent material.

I.4.2.2.1 Culverts: Upstream End

The following types of devices, materials, and installation strategies are suggested:

- For each culvert, a simple plywood panel of size sufficient to block the culvert and to fit flush with the culvert surface between the wing walls can be used.
- Stakes can be driven into the ground about three feet up-slope from the top of the culvert concrete. The panel can be lowered into place, with handling lines using the stakes as braces, and then fixed in position.
- A supply of about 20 sandbags would be needed. These sandbags can be placed upstream of the blocking panel to aid in holding it in place and sealing the edges.
- If water were flowing in the creek at the time of the oil spill, a space under the panel would be used to permit water to continue down the creek while the oil is blocked.

I.4.2.2.2 Culverts: Downstream End

Panels of the same size and structure as those prepared for culverts at the upstream end are suitable for the downstream end; however, supporting timbers may be needed to hold the panels over the ends of the culverts against the flowing oil.

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I.4.3 On-Land Cleanup Techniques

Terrestrial (on-land) cleanup techniques are provided in Table I-5.

Table I-5. Terrestrial Cleanup Techniques.

Technique	Equipment	Personnel	Other Resources	Unit Area
Containment/ Diversion Berming	bulldozer or grader or front end loader, vacuum truck	supervisor equip. operators 4-5 laborers	hoses, plastic liner, soil, sandbags, sorbents, warning tape, protective clothing, fuel & maintenance for equipment	each containment location
Interception Trench	backhoe, vacuum pump	supervisor equip. operators 2-3 laborers	hoses, visqueen/plastic liner, sorbents, storage containers, plastic bags, barrier supports, protective clothing, fuel & maintenance for vehicle	each containment location
Blocking Dams	bulldozer or backhoe or front end loader, pickup truck with tools, possible vacuum truck or pump, skimmer, dump truck(s) for removal	supervisor equip. operators 2-3 laborers	plastic liner, geotextiles, soil, sandbags, 3-4" underflow pipe, barrier supports, sorbents, storage bags, protective clothing, fuel & maintenance for equipment	each dam location
Culvert Blocking	backhoe or front end loader, pickup truck with tools	supervisor equip. operators 2-3 laborers	plywood, sheet metal, inflatable plugs (if available), soil, sandbags, lumber, hose and fittings, plastic bags, storage containers, protective clothing, fuel & maintenance for equipment	each culvert location
Manual Removal/ Vegetation Cutting	dump truck, debris box, possible pressure pump for washing vegetation	2 crews with 1 supervisor 5-10 laborers per crew	cutting tools, rakes, shovels, pitchforks, plastic bags, plastic sheeting, sorbent pads, protective clothing, fuel & maintenance for equipment	approx. 50 K sq. ft. (1+ acre) per 8-hr shift

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I.5 CREEK RESPONSE AND CLEANUP STRATEGIES

I.5.1 Blocking Creek Beds

An earthen dam or berm may be constructed downstream of the oil if the creek bed is dry. However, if the creek is flowing, then diversion booms, overflow booms, and/or water bypasses can be used.

With diversion booming, if water flow rate allows, intermittent berms can be placed in position with earthmoving equipment. The booms between the berms must permit water flowing in the creeks to escape under the oil and continue flowing. Allowing water to escape diminishes the extent that the collected oil spreads beyond the creek bed.

An overflow berm can be placed downstream if oil is contained upstream of another boom in a creek bed. If such a boom is placed in a creek bed, a water bypass must be made by which water can escape and flow in the creek.

I.5.2 Creek Cleanup Techniques

Steps required to cleanup a creek include:

- Remove contained oil using excelsior, absorbent pads, and vacuum truck as needed.
- Clean the banks and surrounding area in a manner acceptable to governmental authorities.
- Dispose of oil-soaked cleaning materials as required by law (see Appendix N, Waste Management and Disposal Plan).
- Implement government-approved restoration plan.

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J.1 INTRODUCTION

Physical removal of oil is the preferred method of response. However, equipment capability, weather and sea conditions, and the size and location of the spill may limit conventional mechanical recovery and removal.

The use of alternative countermeasures may be considered when the preferred recovery, cleanup, or remediation techniques are inadequate and the environmental benefit of their use outweighs any adverse effects. Alternative countermeasures include:

- Dispersants.
- *In-Situ* Burning.
- Bioremediation.
- Shoreline Cleaning Agents.

The use of dispersants and *in-situ* burning are typically used for large offshore discharges. The National Contingency Plan, Section 300.910 authorizes the use of dispersants on all waters threatened by the release or discharge of oil. Section 300.910 also authorizes the use of *in-situ* burning on a case-by-case basis, with approvals from federal and state agencies.

Due to the environmental sensitivity of the South Ellwood Field facilities' local offshore environs, the use of these non-mechanical methods is extremely unlikely. Dispersant use and *in-situ* burning are fully described (including applicable permits, approvals, and authorizations) in the ACP.

Information contained in this section of the Oil Spill Contingency Plan should be referenced and used to complete the Pre-Approval Zone Dispersant Use Checklist and Dispersant Assessment Worksheet in accordance with the California Dispersant Plan.

J.2 DISPERSANTS (ACP 2008: Sec 3270, Region IX Regional Contingency Plan, Appendix XII)

J.2.1 Application Methods

Dispersants are typically applied to offshore slicks to promote dispersion of oil into the water column as very small droplets. The amount of spilled oil that might otherwise enter sensitive areas and/or reach shore is decreased. In this way, dispersants can often eliminate or reduce potential impacts to sensitive natural resources and economic resources.

Dispersants offer advantages over skimming technology when addressing dispersible oils. These advantages include:

- Dispersants can be applied to offshore or remote areas where the use of skimming vessels may be limited or response times protracted.

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- Dispersants can be used more effectively in sea states where skimming vessels may not be able to operate.
- Aerial application of dispersants can more quickly address larger areas of spilled petroleum than skimming technology.
- Dispersants can be used in concert with mechanical skimming devises to increase the rate of surface oil removal.

Dispersant application equipment can be divided into three groups (according to the method of application) as follows:

1. Vessel Application Equipment.
2. Aerial Application Equipment.
3. Shoreline Application Equipment (rarely used).

Boat-mounted spray systems are very useful for small spills closer to land or in confined area. This is due to the relatively slow transit times, low coverage rate and limited swath width of vessel-based systems. These systems are normally the least costly and most easily procured application method.

Aerial application of dispersants is achieved through the use of rotary or fixed-wing aircraft. Fixed-winged applications incorporate the use of dedicated aircraft which have been specifically modified to apply dispersants or aircraft-of-opportunity equipped with the Aerial Dispersant Delivery System (ADDS)

For very small spills or in hard-to-reach areas, three-to-five gallon garden sprayers or portable pumps with hand-carried nozzle sprayers can be used to apply pre-mixed water-based dispersants.

Factors affecting dispersant and application method selection include:

- **Marine Conditions**. Sea conditions, temperature, water movement, depth, and salinity will determine which, if any dispersants can be used effectively. Marine conditions can also limit application methods. In Southern California, COREXIT 9500 and COREXIT 9527 are the dispersants stockpiled by MSRC and Clean Seas, respectively.
- **Biological Resources**. Dispersants should minimize ecological impacts. The effects of dispersing slicks into the water column must be evaluated against the impacts of allowing the oil to remain on the surface and recovered by mechanical means.

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- **Type and Condition of Oil**. Oils that are relatively fresh and still able to spread or film out further are best suited for dispersion. As viscosity increases and other effects of weathering occur over time, the effectiveness of dispersants is reduced.
- **Size and Location of Spill**. The amount of dispersant required and the distance between the application site and the staging area will determine the feasibility of various methods of application.
- **Response Resources**. The availability of application equipment and qualified contractors, the proximity of the staging areas, and approximate cost need to be considered when evaluating the dispersant response option. Its effectiveness and manpower and equipment requirements should be evaluated in comparison with those of mechanical recovery and *in-situ* burning.

Monitoring techniques used for dispersant operations include:

1. **Direct and Indirect Observation**. Direct observation by monitoring personnel provides a more realistic approach in a real spill. This can be accomplished by a boat or aircraft. Aircraft provide adequate spatial coverage, can readily be dispatched to the spill site, and are therefore a preferred platform for monitoring. Video taping is a simple, inexpensive and available technique that can be used from aircraft or boats to observe indirectly, as well as document the extent and configuration of a spill, how oil responds to dispersants, the effects of wind, waves, and currents, etc. The primary drawback, as in visual or photographic observation, is the dependence on natural lighting. Sunlight reflecting off water can reveal the shape of very thin slicks, but lack of contrast between oil and water on overcast days greatly reduces effectiveness of visual observations.
2. **Scientific Monitoring Techniques**. These techniques include infrared sensing, microwave sensing and radar sensing, and water column monitoring.

A working group of federal scientist and oil spill responders has developed the Special Monitoring of Advanced Response Technologies (SMART) program to monitor the effectiveness of alternative response technologies including dispersants. The program provides a process to gather information rapidly on the effectiveness of dispersant application and provide information to the UC in a timely manner. The SMART program consists of both visual observations (Tier 1) and on-site water column monitoring (Tier 2). In addition, the program can be expanded to examine the fate and transport of the dispersed oil (Tier 3). Once finalized, the program will provide a practical and cost effective approach to effectiveness monitoring and should be incorporated into the QAP program.

J.2.2 Dispersant Toxicity

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A recent review of dispersant toxicity studies suggests that the present generation of dispersants do not themselves present a significant threat to marine life. The primary threat to the environment comes from the dispersion of spilled oil constituents into the water column. However, studies show that the acute toxicity associated with dispersed oil is likely to be short term as the dispersed oil is typically diluted within hours to levels below those expected to produce impacts on the water column community. These findings, coupled with the potentially severe consequences to natural living resources when oil is on the water's surface or deposited within the productive intertidal regions, suggest that, when possible, the dispersion of oil may be the best choice after an oil spill has occurred.

J.2.3 COREXIT 9527 and COREXIT 9500

J.2.3.1 Physical and Chemical Properties

Both COREXIT 9527 and COREXIT 9500 are on the EPA National Contingency Plan Product Schedule and on the State of California list of licensed cleanup agents.

COREXIT 9527 is a blend of oxylate polymers, organic sulfonic acid salt, substituted fatty ester, and glycol ether. This product, developed in the 1980s, is a concentrated and highly effective oil dispersant for use on a wide range of oils. Its unique formulation provides a self-mixing dispersant that is biodegradable and of low toxicity.

COREXIT 9500 was developed in the 1990s and includes the same surfactants as COREXIT 9527 incorporated into a different solvent. A different solvent was used for the following reasons:

1. Prolonged exposure to COREXIT 9527 caused adverse health effects in some responders. These effects were attributed to its glycol ether solvent. Therefore, the solvent was replaced by a mixture of food-grade aliphatic hydrocarbons.
2. To extend the window of opportunity for dispersant use. The window of opportunity is limited by the effects of weathering on the chemical and physical properties of the spilled oil, especially the increase in oil viscosity.

COREXIT 9500 is a high-performance, biodegradable, low toxicity oil dispersant that is effective on a wide range of oils, including the heavier, more weathered oils, and emulsified oils.

A summary of the physical properties of COREXIT 9527 and COREXIT 9500 is provided below.

PHYSICAL PROPERTY	COREXIT 9527	COREXIT 9500
Specific Gravity at 60°F	0.98-1.02	0.949
pH	6.1	6.2
Flash Point	163°F	181.4°F
Pour Point	Less than -40°F	Less than -71°F

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Viscosity at 100°F	162 cst at 32°F	22.5 cst at 104°F
Solubility	Complete	Miscible

Both COREXIT 9527 and COREXIT 9500 display a low toxicity as illustrated by the laboratory test results provided below.

MATERIAL TESTED	SPECIES	LC 50 (ppm)
COREXIT 9527	*Menidia beryllina* *Mysidopsis bahia*	14.57 96-hr 24.14 48-hr
COREXIT 9500	*Menidia beryllina* *Mysidopsis bahia*	25.20 96-hr 32.23 48-hr
No. 2 Fuel Oil	*Menidia beryllina* *Mysidopsis bahia*	10.72 96-hr 16.12 48-hr
COREXIT 9527 & No. 2 Fuel Oil (1:10)	*Menidia beryllina* *Mysidopsis bahia*	4.49 96-hr 6.60 48-hr
COREXIT 9500 & No. 2 Fuel Oil (1:10)	*Menidia beryllina* *Mysidopsis bahia*	2.61 96-hr 3.40 48-hr
Reference Toxicant (DSS)	*Menidia beryllina* *Mysidopsis bahia*	7.07 96-hr 9.82 48-hr

Both COREXIT 9527 and COREXIT 9500 are packaged usually in 55-gallon, non-returnable, high-density, polyethylene drums. Bulk shipments are also available from Nalco in Sugar Land, TX (Exxon Chemical Company) upon request. The shelf life of unopened drums of both products is unlimited. Containers should always be capped when not in use to prevent contamination and evaporation of solvents. No unusual storage precautions are necessary. Storage temperatures for either product are:

1. Maximum storage temperature: 170°F
2. Minimum storage temperature: -30°F
3. Optimum storage temperature range: 40°F to 100°F

J.2.3.2 Efficacy of COREXIT 9527 and COREXIT 9500 on South Ellwood Crude

COREXIT 9527 and COREXIT 9500 are both effective crude oil from the South Ellwood Field. In addition, the oil has relatively low wax and asphaltene content leading to favorable dispersant effectiveness. As mentioned previously, COREXIT 9500 is effective on a wide range of oils, including the heavier, more weathered oils and emulsified oils. The product has been shown to be slightly more effective than COREXIT 9527 with high viscosity oils.

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J.2.3.3 Availability and Logistics of COREXIT 9527 and COREXIT 9500

Clean Seas has contracted with Aspen Helicopter of Oxnard, California for aerial application of dispersant from a helicopter. The helicopter can be called up, loaded at the Clean Seas Carpinteria Yard and onsite within approximately three hours. The application rate is approximately 5 gallons per acre and 110 gal per sortie. Twenty acres can be covered during each sortie. A sortie, which includes time to fuel and reload, takes approximately one hour. Clean Seas can run five-to-six sorties during daylight hours. Clean Seas maintains a volume of COREXIT at its yard in Carpinteria for use during a spill.

Sources for COREXIT 9527 are listed below.

Source	Location	Amount Available (approx. gallons)	Likely Transport Mode to Carpinteria Yard /Santa Barbara Airport
Clean Seas	Carpinteria, CA	17,450	Truck
MSRC	Everett, WA	14,190	Truck/Air
MSRC	Long Beach, CA (various sites)	12,870	Truck/Air
MSRC	Richmond, CA	9735	Truck/Air
Nalco (Exxon Chemical)	Sugar Land, TX	Continuous supply after 48 hours	Truck/Air

(MSRC Dispersant Program, inventory as of 9/19/11)

Additional product can be obtained from Nalco in Sugar Land, TX. MSRC has contracts for a C-130 dispersant aircraft based in Phoenix, AZ, as well as a King Air dispersant/spotter airplane based in Stennis, MS.

J.2.4 Resource Protection

The primary objective of oil spill abatement and cleanup is to reduce the effect of spilled oil on the environment. However, equipment capability, weather, sea conditions, and spill magnitude may limit mechanical recovery. Use of chemical, oil spill cleanup agents may be considered when the preferred recovery techniques are inadequate and the environmental benefit of chemical use outweighs its adverse effects. The following guidelines will be observed in dispersant use:

1. Dispersants will be used only when authorized. The authorization process requires that information be provided on a FOSC Checklist and Support Information form (refer to ACP).
2. Only accepted, approved or licensed products will be used.
3. Dispersants will be used only at authorized concentrations.

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4. Dispersant will be used only in calibrated delivery systems that will be operated by qualified individuals.
5. Dispersants will be used only in locations authorized by the FOSC.
6. Venoco will work closely with regulatory agencies in monitoring and documenting dispersant use operations.

J.2.5 Approval Processes for Dispersant Use in Waters off California (ACP 2008: Sec 3270 and Regional Contingency Plan, Appendix XII)

The California Dispersant Plan (CDP) provides an approval process which is a combination of the "pre-approved" Quick Approval Zone (QAZ) process for waters 15 nautical miles or more off the coast of California and the State's draft Dispersant Use Decision Process (DUDP) for use of dispersants in state waters. It provides a mechanism to the Unified Command (UC) to expedite the dispersant use decision. This is significant in that the window of opportunity for effective dispersant use can be very narrow. This accelerated review process, conducted by the Planning Section of the UC, is designed to provide the UC with sufficient information to determine if a dispersant use request should be made, and to provide members of the RRT with sufficient information to approve or disprove within two hours of its receipt. If the results support dispersant use, the FOSC will contact the RRT, provide information as required, and obtain a dispersant use decision.

Both the UC and RRT in taking such action must accept the following conditions:

1. The use of dispersants represents an acceptable risk to the environment.
2. The selected dispersant will have an acceptable level of effectiveness on the spilled oil.
3. Dispersant application will not disperse all the oil.
4. Mechanical or other methods will be required to address the remaining oil.

The geographical boundaries of the "pre-approved" QAZ are those marine waters off the coast of California, which occur between the lines drawn perpendicular to the Oregon/California border to a point 15 nautical miles from the California/Mexico border. Offshore, the QAZ extends seaward to the western most limits of the Exclusive Economic Zone. Inshore, the QAZ is limited to those waters beyond the depth of 60 feet, and a distance of 0.5 miles from the mainland and island shorelines or kelp beds. In addition, dispersant use is excluded from a one-mile radius around the mouths of rivers having significant salmon and steelhead trout runs during periods of adult and smolt migration. The use of dispersant in marine sanctuaries will require considerable coordination with the Sanctuary Managers and their staff who will be requested to participate in the planning process.

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To ensure a streamlined operation, the UC and the Alternative Response Technology Unit of the UC Planning Section with assistance from OSPR will utilize the information-gathering and decision-making process using the checklists and procedures found in Section I and II of the California Dispersant Plan. Information on biological resources at risk and dispersant effectiveness will be obtained from the OSPR database. Results of the QAP review, supporting information, and dispersant use recommendation will be summarized on the FOSC Checklist. Copies of the Checklist and Support Information for the QAP are found in the ACP.

J.2.6 References

Chen, Andrie, C.T. 1998. Exxon Planning Guide for Oil Spill Response Equipment and Vessels.

National Research Council. 1989. Using Oil Dispersants on the Sea. Committee on the Effectiveness of Oil Spill Dispersants, Marine Board, Commission on Engineering and Technical Systems. National Academy Press, Washington, D.C. 335 pp.

Region IX Regional Contingency Plan. 2006. Appendix XII.

United States Coast Guard and Office of Oil Spill Prevention and Response. Area Contingency Plan Los Angeles/Long Beach (Northern/Southern Sector).

J.3 *IN-SITU* BURNING (ACP 2008: Sec 3280, Region IX Regional Contingency Plan, App. XIII)

J.3.1 Application Method

Burning has distinct advantages over other oil spill countermeasures. It offers the potential to rapidly convert large quantities of oil into its primary combustion products with a small percentage of other unburned and residue products. This technique could be most effective in dealing with a large spill at sea and in removing large quantities of oil from the marine environment before it comes ashore. Although limited by the ability to contain oil, *in-situ* burning might be the best option in areas where it is imperative to remove large quantities of oil quickly to protect on-water resources.

Typically, *in-situ* burning involves burning a certain thickness of oil (i.e., >2 mm but preferably several cm) within a fireproof boom. *In-situ* burning systems are typically composed of:

- Fire-resistant containment boom specifically designed to be heat-resistant and fire-resistant. This boom permits the collection of significant quantities of oil at thicknesses that allow self-sustained combustion.
- Conventional boom and towing cable used to aid in containment and collection of spilled oil, but kept away from burning oil. It may be about three times longer than the fire-resistant boom and attached to its ends.

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- Oil ignition system used to ignite a pool of collected oil. Various alternatives include the Heli-torch (a helicopter-mounted gelled gasoline unit), burning rafts, and timed ignition devices.
- Support subsystems include boom tow vessels to collect and direct fragmented oil slicks into the mouth of the fire-resistant boom, monitoring vessels to ensure safety of operations, safety equipment, skimming vessels, and aircraft to monitor spill conditions.

Fire-resistant booms are available from a number of boom manufacturers and are sold in a range of sizes from 18 in (46 cm) for calm water use up to 43 in (109 cm) for open ocean use. Fire-resistant booms function generally like conventional booms, and therefore their selection criteria should include construction features, in addition to overall height, which allow optimum application in the sea conditions where their use is anticipated.

The oil-removal (or elimination) rates for *in-situ* burning can be quite high compared to mechanical removal (e.g., 80-to-90% for film 2-to-10 mm thick and 98-to-99% for film 10-to-100 mm thick); however, the success of burning depends on a number of factors. Factors that inhibit combustion include:

1. Insufficient film thickness (<1-to-2 mm).
2. Aged oil with low volatile content.
3. Emulsification. Ignition is difficult if water contents is >15-to-20 %. Wicking agents may be required if water content is >50 %.
4. Adverse weather conditions such as clouds, rain, poor visibility, and/or winds (in excess of 12 mph).
5. Adverse sea conditions such as waves exceeding 1 m and/or strong currents.
6. Oil submersion and or entrainment.
7. Vapor loss.

Factors that promote combustion include:

1. Oil layer thickness >2-to-3 mm.
2. Fresh oil with high volatile content.
3. High oil-to-water ratio (e.g., low emulsification with water, presence of wicking agent or combustion promoters).
4. Favorable weather conditions (i.e., sunny, warm, light winds, and good visibility).
5. Favorable sea conditions (i.e., calm to light seas, no current).

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In-situ burning may be possible if personnel and equipment are available on short notice and can be dispatched to the spill within a relatively narrow "window of opportunity". This "window" may consist of only of only a few hours to a day or two, depending on the nature of the spill, the characteristics of the oil, and the prevailing wind and sea conditions at the spill site. The proximity of the oil to be burned to shorelines, sensitive natural resources, population centers, etc., will also play an important role in determining the practicality and the time available for *in-situ* burning.

Currently, MSRC has 500 feet of fire-resistant boom with a 400-ft guide in El Segundo, CA and 500 feet of fire-resistant boom with a 400-ft guide in Port Angeles, WA.

J.3.2 Resource Protection

Use of *in-situ* burning may be considered when preferred techniques are inadequate and the environmental benefit of *in-situ* burning outweighs its adverse effects. A decision to conduct an *in-situ* burn should address the following:

- Burning operation must be timed and coordinated with other spill response operations and in conjunction with regulatory agencies.
- Health and safety of response personnel and the public.
- The threat posed to nearby facilities (e.g., terminals, marinas, and piers).
- Public concerns (e.g., air quality, disruption of normal activities).
- Environmental impacts to sensitive habitats and natural resources.
- Disposal of combustion products (e.g., soot, burn residue, and debris).
- Recovery or elimination of oil by other means (i.e., mechanical or non-mechanical).

If *in-situ* burning is used, the following guidelines will be adopted to protect area resources:

1. *In-situ* burning will not be used without authorization. The authorization process requires that information be provided on a checklist that recognizes resources at risk from mechanical and non-mechanical measures (for a copy of the checklist, refer to the ACP).
2. Only accepted, approved or licensed products and methods will be utilized.
3. *In-situ* burning will be carried out by qualified individuals and only in locations authorized by the FOSC.
4. Venoco will work closely with regulatory agencies in monitoring and documentation of the *in-situ* burning operations.

J.3.3 Permits, Approvals, Or Authorizations (ACP 2008: Sec 3280)

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Use of *in-situ* burning may be considered by the FOSC when the preferred recovery techniques are inadequate and *in-situ* burning will lessen the environmental impacts of the spill. The National Contingency Plan (§300.910) authorizes the FOSC, with concurrence of the EPA representative to the RRT and as appropriate, with the concurrence of the Sate representative to the RRT (In the case of California, the Governor has delegated this role to the Administrator of OSPR.) with jurisdiction over navigable waters threatened by the release of discharge of oil and, in consultation with the DOC and DOI natural resource trustees, when practicable, to authorize the use of *in-situ* burning on a case-by-case basis.

A Preapproval Zone (35-to-200 miles off the California coast and the areas around special jurisdictions, such as marine sanctuaries, natural parks, national wildlife refuges), has been designated in a Letter of Agreement (LOA) among the USCG, EPA, DOC, and DOI. The FOSC must determine if conditions are met to authorize an *in-situ* burn as delineated by the LOA and notify the RRT and CDF&G representing the State of California.

J.3.4 References

Chen, Andrie, C.T. 1998. Exxon Planning Guide for Oil Spill Response Equipment and Vessels.

Region IX Regional Contingency Plan. 2006. Appendix XII.

United States Coast Guard and Office of Oil Spill Prevention and Response. Area Contingency Plan Los Angeles/Long Beach (Northern/Southern Sector).

J.4 BIOREMEDIATION (ACP 2008: Sec 3290, Region IX Regional Contingency Plan, Appendix XIV)

Bioremediation is a treatment technology that enhances existing biological processes to accelerate the decomposition of petroleum hydrocarbons and some hazardous wastes. Section 300.910 of the NCP authorizes the use of biological additives for the dispersion/abatement of oil spills.

Shoreline treatment by nutrient enhancement can significantly increase degradation rates of oil when compared to untreated shoreline areas. However, the technology is time-consuming and probably best suited to the treatment of specific types of shorelines and marsh habitats. Currently, bioremediation should be viewed as a polishing agent for the final stages of cleanup, rather than as a primary response tool, especially considering the slow degradation rates.

J.5 SHORELINE CLEANING AGENTS (ACP 2008: Sec 3240)

Shoreline cleaning agents applied to shorelines generally are designed either to prevent adherence (stranding) of oil or to release already stranded oil. Section 300.910 of the NCP authorizes the use of chemical agents to respond to discharges of oil. The efficiency of mechanical cleanup operations may be enhanced by the use of shoreline cleaning agents by

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assisting with the re-floating of oil or preventing its subsequent stranding. However, the potential for toxic responses in indigenous fauna or flora to the cleaning agent must be considered. Shoreline cleaning agents often remain undiluted for prolonged periods of time and consequently can have a greater impact upon the indigenous biological and geological resources.

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K.1 SPILL RESPONSE TRAINING AND DRILLS OVERVIEW

Venoco's Training/Drill program has been developed to ensure facility personnel are prepared to perform their response duties and to be in compliance with State and Federal requirements. Training levels have been developed to provide a tailor curriculum for defined levels of response capabilities, which are designated for each individual depending on his or her specific job description and stated response role. This program is designed to train personnel so that they carry out their responsibilities and duties associated with immediate and sustained response to an incident.

The training of Venoco's response organization in the prompt and effective response to an oil spill/emergency incident is an integral part of the Company's environmental, health, and safety policies. The Company has developed a multi-faceted training program for the members of its response organization. The program consists of classroom instruction, field briefings, exercises, tabletop drills of the response team and equipment deployment drills involving Venoco personnel and Clean Seas' response equipment.

The program of spill response drills is designed to comply with the National Preparedness for Response Exercise Program (NPREP) and to test notification procedures, to exercise equipment, to practice response techniques, and to maintain a high level of readiness. These drills also serve to determine whether the response plan will function as intended and where modifications need to be made. The Venoco Safety Manager plans and carries out the drill programs as well as evaluates response exercises to ensure that the exercise met the required objectives, and that the exercise performance demonstrated the effectiveness of the plan.

Key components of the training and drill programs are addressed below.

- Members of the response organization are trained in their job positions.
- Safety training as required by federal and state health and safety laws is provided for all persons, including non-permanent responders, likely to be engaged in oil spill response.
- Drills are conducted to ensure that the plan functions in an oil spill/emergency.
- Drill frequencies are defined in accordance with NPREP guidelines and are designed to exercise either individual components of the plan or the entire response plan.
- Training and drill records (certificates, attendance records, and evaluations) are maintained for three years and all such documentation is made available to the regulatory agencies upon request.

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K.2 TRAINING PROGRAM

K.2.1 Operational Risk Reduction

Training is an essential part of Venoco's operations. Venoco instructs its employees annually in the safe and efficient operation and maintenance of the crude oil pipelines and associated facilities, in emergency response, and in awareness of all applicable laws, rules, and regulations. All employees are provided with comprehensive on-the-job training covering all operating procedures (routine/abnormal) and the proper maintenance of equipment that will be associated with their job position. Each employee receives formal training in the properties and hazards of the chemical products associated with the pipeline system as part of the Hazard Communication and Right-To-Know Program. Training is also conducted at monthly safety meetings that may include but not be limited to discussions on pollution prevention regulations and procedures, internal Company policies, operations, maintenance and repair procedures, emergency response procedures, and accident/failure review and analyses.

Venoco's operations risk reduction training includes the following subjects:

Spill Prevention and Control (Frequency: Annually). In this program, the participant learns to identify potential spill sources, to properly use response equipment, to protect sensitive areas, and to determine the appropriate cleanup techniques for the various types of oil that may be spilled. Boat safety and handling are also covered. This training also satisfies the requirements of OPA 90 Awareness and Response.

Hazard Communication (Frequency: Annually). Right-To-Know training instructs personnel in the hazards of the products they handle, and how to obtain and read Material Safety Data Sheets (MSDS), Material Safety Data Bulletins (MSDB), and container labels. Employees are informed of the location of the MSDS library at the facility.

Incipient Fire Fighting (Frequency: Annually). Employees are given training on fixed fire extinguishing system(s) if installed at the facility and the operation of portable fire extinguishers. Personnel who may be required to activate a fixed system are instructed on when that might be required, the safe operation of the equipment, and a description of how the system works. Training also includes how to activate the system manually in the event automatic activation fails. Portable extinguisher training includes an explanation of the classes of fire, hydrocarbon chemistry, and how to activate and discharge a dry chemical extinguisher.

Personal Protective Equipment (Frequency: Annually). Employees required to use personal protective equipment are trained how to wear the equipment properly and how to inspect it to determine when it needs to be replaced.

Lockout/Tagout (Frequency: Annually). Describes the lockout and tagout process and reviews the procedures to assist facility personnel in preventing the unexpected energization, start-up or release of stored energy while performing maintenance, adjustments and installation work on equipment. Trains the

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employee to recognize situations in which the lockout/tagout requirement applies and to correctly follow the lockout/tagout policy.

Confined Spaces (Frequency: Annually). Explains the definition of a confined space, and describes the potential hazards which could be encountered. Describes how to use an atmospheric monitor. Identifies the safe conditions for work in the confined space, including atmospheric monitoring, ventilation, and wearing required PPE.

Hot Work (Frequency: Annually). Explains the definition of hot work. Provides guidance in performing hot work. Instructions for generating and utilizing hot work permits are also addressed.

Respiratory Protection (Frequency: Annually). Provides employees respiratory protection from airborne, workplace contaminants when such contaminants cannot be controlled by engineering measures.

Hydrogen Sulfide (Frequency: Annually). Employees are informed of the possible health effects associated with H_2S exposure, provided an understanding of safe operating procedures, and the use of PPE associated with H_2S.

First Aid/CPR (Frequency: Bi-Annually). Prepare employees to handle medical emergencies until professional medical care arrives.

K.2.2 Spill Response Safety Training

OPA 90 Awareness (Frequency: Semiannually). Response personnel are provided general information regarding the background and requirements of OPA 90 and the purpose of the oil spill contingency plan. A review covers how the plan is organized, what information it contains, and how it should be used. Personnel responsibilities under the plan emphasize notification and reporting procedures.

OPA 90 Response (Frequency: Annually). Response personnel are instructed in their duties regarding the response management system, discharge assessment, control and containment, the protection of sensitive areas, and material recovery and disposal. NPREP exercises are used to provide facility personnel with practical training experience, and evaluations of the exercises identify response actions that can be improved with further training.

Management of Major Spill Incidents (Frequency: Annually). This program is designed to teach participants emergency operations for managing major oil spill responses. It focuses on management aspects of spill response activities and includes training in locations, intended use, deployment strategies, and the operational and logistical requirements of response equipment, spill reporting procedures, oil spill trajectory analysis and predicting spill movement. Based upon actual spill experiences of the petroleum industry, this program helps participants anticipate the situations that may arise during large spills and the means to handle them.

Hazardous Waste Operations and Emergency Response (Frequency: Annually). Employees are trained to the level of HAZWOPER necessary to perform their emergency response duties.

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First Responder/Awareness: Employees are trained to recognize an emergency situation, and to understand and implement emergency procedures.

First Responder/Operations: Employees are instructed to initiate spill containment from a safe distance. Training covers basic hazard and risk assessment techniques and hazmat terminology, how to select and use personal protective equipment, how to perform control, containment, and confinement operations, and how to implement basic decontamination measures.

HazMat Technician: Employees receive advanced, specialized training in order to aggressively respond to a hazardous material spill to contain and alleviate the condition. Training includes respirator training, decontamination procedures, hydrocarbon chemistry, personal protective equipment, and operation of air monitoring equipment.

HazMat Specialist: Employees receive advanced, specialized training in order to respond to a hazardous material spill. They respond with and provide support to HazMat Technicians. In addition to training equal to that of the HazMat Technician, they receive specific instruction concerning the substances they may be called upon to contain. Training also includes how to implement the local emergency response plan; awareness of the state emergency response plan; understanding the classification, identification and verification of known and unknown materials by using advanced survey instruments and equipment, chemical, radiological, and toxicological terminology, and in-depth hazard and risk techniques; and ability to select and use proper specialized chemical personal protective equipment, to perform specialized control, containment, and/or confinement operations, to determine and implement decontamination procedures, and to develop a site safety and control plan.

Incident Commander: Trained to assume control of an incident. Includes Venoco's incident command system, how to implement the facility's response plan, the associated risks of employees working in chemical protective clothing, decontamination procedures, how to implement the local emergency response plan, and knowledge of the state emergency response plan and of the Federal Regional Response Team.

First Aid and CPR Training (Frequency: Biennially). Courses in first aid or cardio-pulmonary resuscitation. Initial training course is followed up with an annual refresher for both first aid and CPR.

Hazardous Materials Transportation (Frequency: Annually). Training is provided to "HAZMAT Employees" who perform hazardous materials transportation activities. Training includes general awareness and familiarization of the DOT regulations, function-specific training applicable to the job duties the employee performs, and general safety training to address emergency response information, personal protection, and methods and procedures for avoiding accidents.

Specialized training, when applicable, is provided to employees on hearing conservation, forklifts, safety permitting, and other topics as new regulations develop. Any new employee who could engage in spill or

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leak response is given appropriate training and orientation, as well as on-the-job supervision until the new employee can demonstrate competency to the satisfaction of his/her supervisor.

Table K-1. Training Program Matrix.

Position	Training							
	Hazwoper	CPR/ First Aid	ICS	OPA 90 Awareness	OPA 90 Response	Oil Spill Prevention & Control	Manage-ment of a Spill	Hazard Communi-cations
Qualified Individual	•		•	•	•	•	•	•
Incident Commander	•		•	•	•	•	•	•
Safety Officer	•	•	•	•	•			•
Legal Advisor			•	•				
Planning Section Chief	•		•	•				
Operations Section Chief	•		•	•	•			•
Logistics Section Chief	•		•	•				
Finance Section Chief			•	•				

K.2.3 HAZWOPER Compliance

If a clean-up operation is required and third party personnel are needed, Venoco will use fully qualified response contractors/cooperatives to perform the work. If contractors/co-ops sub-contract to labor pools, documentation as to the training of casual laborers will be required. At the time clean-up operations are initiated, documentation from the contractor/co-op regarding the HAZWOPER qualification of their personnel will be obtained. Each contractor must provide a letter to the facility annually, which states that their personnel are properly trained. Prior to entry to the affected site, Venoco personnel review the following information with contractor management, casual laborers or volunteers:

Hazard Communication:

- Material adverse health characteristics.
- Material reactivity characteristics.
- Material flammability, explosivity characteristics.
- General site characteristics.
- Potential worksite personal safety hazards.
- Location of first aid assistance.
- Decontamination facility, if required.

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Personal Protective Equipment:

- PPE requirements as identified by the material being handled and the activities being performed.
- Location where they will be working.
- Work they will perform.
- Lines of authority.

K.2.4 Response Team Training

Response personnel participate in the Facility Response Training Program discussed in Section K.2.2. The Immediate Response Team works with Clean Seas in semi-annual field exercises to develop and maintain a high level of response preparedness. A field briefing occurs prior to each exercise to review:

- Venoco's response teams.
- The roles and responsibilities of the members of the onsite response personnel.
- Immediate response procedures.
- Internal and external notification requirements and procedures.
- Clean Seas' response equipment and response strategies.
- Health and safety considerations.

The response training program ensures that:

- All Venoco response personnel know:
  - Their responsibilities under the plan;
  - The name and address of, and the procedures for contacting Venoco on a 24-hour basis; and
  - The name of and procedures for contacting the Qualified Individual on a 24-hour basis.
- Reporting personnel know:
  - The content of the Fact Sheet;
  - The toll-free telephone number of NRC and CA OES; and
  - The notification process.
- Persons engaged in response activities know:
  - The characteristics and hazards of the oil discharged;
  - The conditions that are likely to worsen in emergencies, including the consequences of facility malfunctions/failures, and the appropriate corrective actions;
  - The steps necessary to control any accidental discharge of oil and to minimize the potential for fire, explosion, toxicity, or environmental damage; and
  - The proper fire fighting procedures and the use of fire and safety equipment.

K.2.5 Use and Training of Volunteers and Temporary Help

All persons, including casual laborers and volunteers, who respond to oil spills in any capacity, as deemed appropriate by the FOSC, must receive training in compliance with 29 CFR 1910, Subpart L and

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29 CFR 1910.12(q). Venoco will not use volunteers in a response but rather refer any volunteers to the State Agency Coordinator through the State Incident Commander (OSPR). Volunteers may be used as deemed appropriate by the State Agency Coordinator (Section 8574.3 of the Government Code). It should be noted that volunteer workers are recognized as employees of the State during oil spill cleanup operations and are covered by Worker's Compensation benefits under Section 3350 *et seq*. of the Labor Code.

K.3 DRILLS

K.3.1 NPREP

Venoco will conduct drills to further improve response personnel preparedness. The drill exercise program is developed in accordance with the comprehensive National Preparedness for Response Exercise Program (NPREP) document that represents a cooperative effort on the part of federal agencies, state, and industry to develop a consistent set of exercise guidelines which conform to OPA 90. The drills will be designed to test all components of the facilities. Table K-2 depicts the minimum triennial cycle of exercises at the facility, according to NPREP guidelines.

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Table K-2. NPREP Response Exercise Program.

NPREP Exercises		
Total Number	**Frequency**	**Exercise Type/Description**
4	Quarterly	**QI Notification Exercise** **Scope:** Exercise communication between facility personnel and the QI(s) and/or the designated alternate(s). At least once a year, one of the notification exercises should be conducted during non-business hours. **Objective:** Contact must be made with a QI or designated alternate, as identified in the plan. **General:** All personnel receiving notification shall respond to the notification and verify the receipt of the notification. Personnel who do not respond should be contacted to determine whether or not they received the notification.
2	Semiannual	**Equipment Deployment Exercise (Clean Seas)** **Scope:** Deploy and operate facility equipment identified in the response plan. This equipment would be either (1) minimum amount for deployment or (2) the equipment necessary to respond to an average most probable spill, whichever is less. **Objective:** Demonstrate ability of CS to deploy and operate equipment. **General:** The facility may take credit for equipment deployed in an actual spill or training as long as activities are properly documented.
1	Annual	**Spill Management / Command Post Team Tabletop Exercise** **Scope:** Exercise the spill management team's organization, communication, and decision-making in managing a spill response. Each team identified in the plan (i.e., if different teams for different size spills) is required to conduct an annual tabletop exercise. **Objective:** Exercise the response team in a review of: knowledge of the plan, proper notifications, communication systems, ability to access an OSRO, coordination of internal spill response personnel, team transitions. **General:** A minimum of one tabletop exercise in a triennial cycle will involve simulation of the worst case discharge scenario.
1	Annual	**Unannounced Exercise:** this exercise may take the place of a required tabletop or an equipment deployment exercise.
1	Annual	**Equipment Deployment Exercise (with OSRO equipment)** **Scope:** Deploy and operate facility equipment identified in the response plan. This equipment would be minimum amount for deployment. **Objective:** Demonstrate ability of personnel to deploy and operate equipment. **General:** The facility may take credit for equipment deployed in an actual spill or training as long as activities are properly documented.
1 (max.)	Once every 3 years	**Government-Initiated Unannounced Exercise:** an unannounced drill may be called at any time. With satisfactory performance during the drill, another unannounced drill will not be called within 36 months. **Scope:** Exercise would involve response to average most probable discharge and equipment deployment. **Objective:** Conduct proper notifications and demonstrate that the response is: timely, conducted with adequate amount of equipment and properly conducted.

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Table K-2. NPREP Response Exercise Program.

NPREP Exercises		
Total Number	**Frequency**	**Exercise Type/Description**
		General: The facility may take credit for an actual spill as long as activities are properly documented
Note: *Venoco is a member of Clean Seas (CS). CS' drill and exercise program assures that shoreline protection strategies for all potentially impacted sensitive areas identified in the plan are exercised.* *Each component of the plan must be exercised at least once in the triennial cycle.*		

K.3.2 Evaluation And Credit

To receive appropriate evaluation and credit for drills and exercises, the criteria described in Section 820.01 of the California Oil Spill Contingency Plans Regulations must be followed. Section 820.01 is provided below in their entirety.

Note that the regulations also allow credit for actual spills, exercises conducted elsewhere by the management team, other exercises conducted by the Company's resources (e.g., OSROs), etc. provided that the necessary criteria are met.

820.01 Drills and Exercises - Evaluation and Credit

(a) Exercises shall be designed to exercise either individual components of the plan, as described in 820.01(c), or the entire response plan. Such exercises, individually or in combination, shall ensure that the entire plan is exercised at least once every three years. Any number of components may be tested during the exercises required by Sections 817.02(k)(1), 817.03(k)(1), 818.02(l)(1) and 818.03(l)(1).

(b) To receive credit from OSPR for an exercise, the following notification requirements must be met:

(1) The owner/operator shall invite the Administrator to participate in both the equipment deployment exercises and the management team tabletop exercises and shall submit written notification including, but not limited to, the following information: company name, address, marine facility/vessel name, OSPR contingency plan number, point of contact, phone/FAX number, type of exercise, date, time and location of exercise, sensitive sites being tested, exercise scenario description, objectives to be tested, and other participants in the drill. The owner/operator may use the OSPR Exercise Notification Form (FG OSPR 1964, 3/10/97) or a document that includes the same information as the Notification Form, for this purpose.

(2) The Administrator shall be given the following advance notice:

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EXERCISE TYPE	MINIMUM NOTIFICATION REQUIRED
Tabletop Exercise, In-State	30 days
Tabletop Exercise, Out-of-State	90 days
Equipment Deployment Exercise	30 days
Full Scale Combination Exercise	60 days
Area Exercise	120 days
Internal Unannounced Exercise	30 days

(c) The Administrator shall determine if the elements of the plan were adequately tested by the exercise scenario and the response of the participants. The Administrator shall give credit for all exercise objectives successfully met during the exercise. Objectives not successfully met during the exercise will not receive credit and must be exercised again within the three year cycle. Exercise objectives shall include, but not be limited to, the following (as set forth in Appendix B of the PREP guidelines):

(1) Notifications: Test the notification procedures identified in the contingency plan;

(2) Staff mobilization: Demonstrate the ability to assemble the spill response organization identified in the contingency plan;

(3) Unified Command: Demonstrate the ability of the spill response organization to form or interface with a Unified Command;

(4) Discharge Control: Demonstrate the ability of the spill response organization to control and stop the discharge at the source;

(5) Assessment: Demonstrate the ability of the spill response organization to provide an initial assessment of the discharge and provide continuing assessments of the effectiveness of the tactical operations;

(6) Containment: Demonstrate the ability of the spill response organization to contain the discharge at the source or in various locations for recovery operations;

(7) Recovery: Demonstrate the ability of the spill response organization to recover the discharged product;

(8) Protection: Demonstrate the ability of the spill response organization to protect the environmentally and economically sensitive areas identified in the approved Area Contingency Plans;

(9) Waste Management: Demonstrate the ability of the spill response organization to properly manage the recovered product and to develop a waste management plan for approval by the Unified Command. The plan will include appropriate procedures for obtaining permits and/or waivers, waste characterization, waste minimization, volumetric determination, and overall waste management and final disposition, as appropriate;

(10) Communications: Demonstrate the ability to establish an effective communications system for the response organization;

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(11) Transportation: Demonstrate the ability to provide effective multi-mode transportation both for execution of the discharge and support functions;

(12) Personnel Support: Demonstrate the ability to provide the necessary support of all personnel associated with the response;

(13) Equipment Maintenance and Support: Demonstrate the ability to maintain and support all equipment associated with the response;

(14) Procurement: Demonstrate the ability to establish an effective procurement system;

(15) Documentation: Demonstrate the ability of the spill response organization to document all operational and support aspects of the response and provide detailed records of decisions and actions taken. These documents shall be provided to the Administrator upon request.

(d) The owner/operator shall provide the following documentation in order to receive credit from OSPR for any exercise conducted:

(1) The contingency plan number;

(2) A list of all other participants and their roles, including contingency plan numbers if applicable;

(3) The objectives tested, as listed in (c) above;

(4) The ACP-listed environmentally sensitive site protection response strategies tested;

(5) Copies of documents created for the drill or exercise (such as the site safety plan and the incident action plan, if written);

(6) A list of the other regulatory agencies attending the drill or exercise, if any; and,

(7) An exercise evaluation or post-spill critique.

(8) For all exercises:

(A) Information to demonstrate whether the identified objectives as listed in subsection (c) above, have been met. The Evaluator Work Sheet (FG OSPR 1963, 2/9/98) or a form that includes the same information may be used to gather this information;

(B) Information of concern to the local Area Planning Committee including, but not limited to, the following: objectives tested, observations and description of successful positive action or statement of problem, and any recommendations for suggested action or improvement to Area Contingency Plans, marine facilities and vessel plans, response contractors, federal agencies, state agencies, local agencies, training or exercise programs. The USCG/OSPR Lessons Learned Reporting Form (ACP LL Rev. 2/98), or a form that includes the same information, may be used to gather this information.

(9) For all tabletop exercises:

(A) information including, but not limited to, the following: date of exercise, exercise or actual response; location; time started/time completed; the response plan scenario used; size of spill; evaluation of the spill management team's knowledge of the oil spill response plan; determination of proper notifications; evaluation of the communications system; ability to access contracted oil spill removal organizations; ability to coordinate spill response with On-

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Scene Coordinator, state and applicable agencies; and ability to access sensitive site and resource information in the Area Contingency Plan if referenced. The Spill Management Team/Tabletop Exercise Report (FG OSPR 1966, 5/7/97) or a form that includes the same in formation may be used to gather this information.

(10) For all equipment deployment exercises:

(A) information including, but not limited to, the following: date; identity of marine facility/vessel; locations); time started/completed; equipment ownership; a list of type and amount of all equipment deployed and number of support personnel employed; description of the exercise goals and a list of any Area Contingency Plan strategies tested, with a sketch of equipment deployments and booming strategies; if marine facility-owned equipment, was at least the amount of equipment deployed necessary to respond to the average most probable spill; was equipment deployed in its intended operating environment; was a representative sample of OSRO-owned equipment deployed; was the OSRO-owned equipment deployed in its intended operating environment; description of the marine facility's comprehensive training and equipment maintenance programs; did personnel responsible for equipment deployment actually deploy the equipment; and was deployed equipment operational. The Equipment Deployment Evaluation Form (FG OSPR 1965, 2/20/97), or a form that includes the same information, may be used to gather this information.

(e) The Administrator shall issue a report within 90 days to the owner/operator for any exercise attended by OSPR personnel, which evaluates the adequacy of the exercise scenario to test elements of the plan and its implementation, and the response of the participants. Any inadequacies noted in the Administrator's report must be addressed in writing by the owner/operator within 60 days of the receipt of the Administrator's report. The owner/operator's response shall outline remedies to the noted inadequacies including, but not limited to, any necessary changes to the plan, any changes in contracted or owned response resources, changes in or additions to training, and/or the need for additional drills or exercises. The owner/operator's response shall include a schedule for implementing the remedies.

(f) Protective Response Strategies for Environmentally Sensitive Sites

(1) Owner/operators are required to exercise protective response strategies for all ACP-listed environmentally sensitive sites within the area identified as impacted in their Off-site/Environmental Consequence Analysis for their reasonable worst case spill. Owner/operators are required to submit a schedule, with in 60 days of the effective date of this subchapter, for exercising the protective response strategies. Owner/operators are required to demonstrate to the Administrator that these areas have been tested, either with owner/operator owned equipment or through an OSRO under contract with the owner/operator.

(A) Each schedule shall be approved or denied within 180 days after receipt by the Administrator.

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(B) The Administrator shall determine whether each schedule adequately assures that the shoreline protection strategies for all environmentally sensitive sites identified as potentially impacted will be exercise. If it is determined that a schedule is inadequate, it will be returned to the submitter with a written explanation of deficiencies and, if practicable, suggested modifications or alternatives.

(C) Upon notification of a schedule's deficiencies, the submitter will have 90 days to submit a new or modified schedule. Such a re-submittal shall be treated as a new submittal and processed according to the provisions of this section.

(2) The Administrator may approve an overall schedule to exercise the protection strategies for an entire ACP area. Such a schedule may be submitted by the owner/operator or by an OSRO, individually or in some combination thereof, which covers the sensitive sites of the entire ACP area, or the sensitive sites identified in the owner/operator's off-site/environmental consequence analysis. A schedule to exercise the shoreline protection strategies for an entire ACP area may be approved by the Administrator, even if the exercises are not able to be completed in the triennial cycle. If the deployment of the shoreline protection strategy is not possible at a site due to statutory, regulatory, or health and safety reasons, the owner/operator must identify these sites, describe the reasons the strategies are not deployable in an exercise situation and what measures will be taken to assure the shoreline protection strategy for the site will function in an emergency. The owner/operator may proposed representative sites, in lieu of the sensitive sites in a given area, as long as the Administrator is assured that all sensitive sites for that area are able to be protected.

(g) The Administrator may call a drill or exercise, or conduct an inspection, to validate all or part of a contingency plan. This drill, exercise, or inspection may be announced or unannounced.

(h) Substitution

(1) In-State Exercises

In substitution for the exercises required by Subsections 817.02(k)(1)(A) through (C), 817.02(k)(1)(B) and (C), 818.02(l)(1)(C) and (D), and 818.03(l)(1)(B), the Administrator may accept an exercise conducted by the marine facility or vessel, and called by an agency other than the OSPR, if all of the following conditions are met:

(A) The exercise tests one or more of the following: the marine facility or vessel's spill management team and spill response organization; deployment of the facility or vessel's response equipment; or deployment of other response resources identified in the contingency plan; and

(B) The exercise is conducted with the U.S. Coast Guard, or another local, state or federal agency and the OSPR has been invited with the minimum notification required in Section 820.01(b)(2); and,

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(C) The owner/operator has received prior approval for the exercise substitution from the Administrator, and,

(D) The Administrator finds the exercise objectives and evaluation criteria equal to or exceeding those of the OSPR.

(2) Out-of-State Exercises

In substitution for the spill management team tabletop exercises, the Administrator may accept an exercise conducted by the vessel owner/operator outside of the State of California if the following conditions are met:

(A) The OSPR has been invited with the minimum notification required in Section 820.01(b)(2); and,

(B) The owner/operator has received prior approval for the exercise substitution from the Administrator; and,

(C) The Administrator finds the exercise objectives and evaluation criteria equal to or exceeding those of the OSPR.

(D) The only exercise that can be substituted under this provision is an exercise of the spill management team and a response management organization that is separate from the vessel operation itself.

(i) OSRO Exercises

An exercise of an OSRO's services may fulfill the equipment deployment exercise requirement of Section 817.02(k)(3) for any marine facility, or Section 818.02(l)(1)(D) for any vessel, that utilizes the OSRO's plan to fulfill the response requirements of the facility's or vessel's own plan. These exercises will not fulfill the semi-annual equipment deployment exercise requirement of marine facility-owned equipment pursuant to Section 817.02(k)(1)(B).

(j) Unannounced Exercises

An unannounced exercise may be used to satisfy the exercise requirements of this subsection under the following conditions:

(1) The owner/operator shall submit a written request to the administrator within 90 days after the unannounced exercise is conducted asking that the exercise be considered in substitution for one or more of the required exercises, and;

(2) the exercise tests one or more of the following: 1) the marine facility's or vessel's spill management team and spill response organization, 2) deployment of the facility's or vessel's response equipment, or 3) deployment of other response resources identified in the facility's or vessel's plan; and;

(3) for Internal Unannounced Exercises, the owner/operator shall comply with all requirements of Subsections 820.01(b) through (e); or

(4) for External Unannounced Exercises, the owner/operator shall comply with all the requirements of Subsections 820.01(c) through (e).

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(k) Actual Spill

(1) Actions taken in response to an actual spill may be considered for exercise credit upon request of the owner/operator if all of the following conditions are met:

(A) The OSPR receives the documentation, as appropriate, outlined in Section 820.01(d); and,

(B) The OSPR receives documentation of State OES oil spill notification, and the owner/operator provides all the information required on the OSPR Notification Form (FG OSPR Form 1964); and,

(C) Activation of the spill management team is successfully accomplished; and,

(D) OSPR or another regulatory agency responds to the spill. A written response/evaluation by the owner/operator may be accepted by OSPR in lieu of an agency report if an agency report is not prepared; and,

(E) the response was carried out in accordance with an approved contingency plan, the appropriate Area Contingency Plan, and/or in accordance with the directions of the Administrator or Federal On-Scene Coordinator; and

(F) The OSPR receives a report from the Responsible Party as to cause of the spill, and procedures or other measures adopted to prevent a similar reoccurrence.

K.4 RECORDKEEPING

K.4.1 Training Records

Venoco will maintain records sufficient to document training of its spill response team members. Venoco will maintain records documenting training of the response personnel for as long as they have assigned duties in the response plan. These records will be available for inspection upon request by Venoco management personnel, its Qualified Individual, and government agencies.

K.4.2 Drill Records

Records to document drills of its oil spill response organization and response resources identified in this plan are maintained for five years. All records will be made available for inspection upon request by the government agencies.

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L.1 INTRODUCTION

This Communications Plan has been developed for spill/emergency response operation. The plan addresses communication procedures, function, range, and redundancy/backup systems.

L.2 COMMUNICATIONS REQUIREMENTS

Effective and efficient communications systems are a central requirement for emergency response at every level. The **Communications Unit Leader** develops and maintains the communications network throughout the response effort.

Communications requirements fall into two basic categories:

- Primary communications necessary to carry out response operations.
- Secondary communications necessary to support response operations.

A comprehensive, integrated communications network must be established linking the Command Post(s) to field operations. Redundancy must be built into the network. All equipment must be carefully tracked when distributed.

L.3 EXISTING COMMUNCATIONS NETWORK

The existing communications network will link Venoco with its OSRO, local, state, and federal emergency responders, as well as adjacent platform operators in the Santa Barbara Channel via:

- Telephone system (cellular/land line).
- 2-way hand-held radios
- Facsimile transmissions.
- Contractor/Cooperative UHF and/or VHF marine radios.
- Internet e-mail.

A summary of the communications network is provided in Table L-1 on the following page.

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Table L-1. Venoco's Communications Network.

		RADIO SYSTEM[1]		
FACILITY/VESSEL	**TELEPHONE**	**TYPE/QUANTITY**	**CALL SIGN**	**FREQUENCY[2]**
Terminal	Table 2-16	FM/1 VHF Marine CH 16/1	KA 77456 VENOCO 262 "Marine Terminal"	49.12 156.950
Crew Boat - Doug C	Table 2-16	VHF Marine CH 16/1 UHF Repeater CH 1	Venoco 229	451.575 RX 456.575 TX
Barge Olympic Spirit	Table 2-16	FM/1 VHF Marine CH16/1 (CH 19)	WYQ 8032	49.12 156.950
Tug	Table 2-16	Single Side Band (2) VHF CH 16/1 (2)	WBP 2187	4125
Assist Vessels - Penguin Line Launch - Delilah	Table 2-16 Table 2-16	 Single Side Band (2), VHF CH 16/1 (2)	 WDD 7867	 4125
Ellwood Onshore Facility Ellwood Pier	Table 2-16 Table 2-16	FM/11 VHF Marine CH 16/1 Handhelds (22) FM/1	VENOCO 251 Base 5	49.12 Repeater451.575 RX; 456.575 TX 154.570 49.12
Platform Holly	Table 2-16	FM/3 Marine CH 16/1 Handhelds (14)	VENOCO 249 "Holly"	156.950 49.12 Simplex 451.575 TX & RX
Venoco Corporate	805 745-2100			
Satellite Phone	881632575245			

NOTES:
1. Radio system has a range of approximately ten miles.
2. Radio system may be used to communicate for shoreline, marine, and/or air operations (i.e., ground-to ground, ground-to-air, ground-to-sea, sea-to-sea, and sea-to-air).

L.4 EMERGENCY RESPONSE COMMUNICATIONS NETWORK

L.4.1 Supplemental Communications

During response to a major incident, Venoco's existing network will be supplemented as necessary to provide an effective network linking the command posts, staging areas, vehicles, and/or offshore vessels. Supplemental communications may include:

- Telephones (fixed/cellular).
- Fax machines.

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- Handheld radios.
- Personal computers and modems.
- Pagers.
- GTE / Nextel GOPAC system.
- Satellite phones may be required for remote SCAT or biology team communication, NRC Environmental maintains sat phones in their resource inventory.

For offshore response operations, additional frequencies (i.e., Channel 16 is monitored during routine operations) may also be used for communications with marine band radios. The FCC has assigned the following primary and secondary frequencies for oil spill response use:

- Primary Frequency 1 UHF 459.000/454.000 (T/R)
- Primary Frequency 2 UHF 454.000/454.000 (T/R)
- Secondary Frequency 1 VHF 159.480/158.445 (T/R)
- Secondary Frequency 2 VHF 158.445/158.445 (T/R)

Clean Seas' communications capabilities are described in table L-2. Venoco will be able to integrate its radio system with Clean Seas by placing a portable base station in the Clean Seas Mobile Communications Center and directing operations from there.

The primary communications system operates on UHF frequencies for command, coordination over distance, force development, and other supervisory functions during cleanup operations. Secondary communications operates on VHF frequencies and supports logistics (e.g., obtaining supplies, planning and staging equipment operations, interfacing with the land telephone system, receiving USCG information). A list of the standard VHF communication frequencies is provided in Table L-3.

TABLE L-2: OFFSHORE RESPONDERS' COMMUNICATIONS NETWORK

		RADIO SYSTEM		
FACILITY/VESSEL	**TELEPHONE**	**TYPE/QUANTITY**	**CALL SIGN**	**FREQUENCY**
Mr. Clean Ocean	805-455-5501	VHF Marine	WDE 7605	
Mr Clean III	805-455-5503	VHF Marine	WSA 2789	
Clean Seas Office	Table 2-17	VHF/1 UHF/1	WXY 609 WFL 588	
Clean Seas Yard	Table 2-17	VHF/1	WXY 610	
FCC Oil Spill Response Frequencies: Primary Frequency 1 Primary Frequency 2 Secondary Frequency 1		 UHF UHF VHF		 459.000/454.000 (T/R) 454.000/454.000 (T/R) 159.480/158.445 (T/R)

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TABLE L-2: OFFSHORE RESPONDERS' COMMUNICATIONS NETWORK			
	RADIO SYSTEM		
Secondary Frequency 2	VHF		158.445/158.445 (T/R)

Table L-3. Standard Marine VHF Voice Communication Frequencies.

Channel No.	Ship Frequencies (MHz)		Usage
	Transmit	Receive	
1	156.050	156.050	Port operations and commercial
3	156.150	156.150	Port operations and commercial
5	156.250	156.250	Port operations
6	156.300	156.300	Intership safety
7	156.350	156.350	Commercial
8	156.400	156.400	Commercial
9	156.450	156.450	Commercial and non-commercial
10	156.500	156.500	Commercial
11	156.550	156.550	Commercial
12	156.600	156.600	Port operations
13	156.650	156.650	Navigational (bridge to bridge)
14	156.700	156.700	Port operations
15	156.750	156.750	Environmental
16	156.800	156.800	Distress, safety, calling
17	156.850	156.850	State control
18	156.900	156.900	Commercial
19	156.950	156.950	Commercial
20	157.000	157.000	Port operations
21	157.050	157.050	U.S. Government only
22	157.100	157.100	Coast Guard liaison
23	157.150	157.150	U.S. Government only
24	157.200	161.800	Public correspondence
25	157.250	161.850	Public correspondence
26	157.300	161.900	Public correspondence
27	157.350	161.950	Public correspondence
28	156.150	156.150	Public correspondence
65	156.300	156.300	Port operations
66	156.350	156.350	Port operations
67	156.375	156.375	Commercial
68	156.425	156.425	Non-commercial
69	156.475	156.475	Non-commercial
70	156.525	156.525	Only for distress or safety calling or

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Table L-3. Standard Marine VHF Voice Communication Frequencies.

Channel No.	Ship Frequencies (MHz)		Usage
	Transmit	Receive	
			general purpose calling using DSC
71	156.575	156.575	Non-commercial
72	156.625	156.625	Non-commercial
73	156.675	156.675	Port operations
74	156.725	156.725	Port operations
77	156.875	156.875	Port operations
78	156.925	156.925	Non-commercial
79	156.975	156.975	Commercial
80	157.025	157.025	Commercial
81	157.075	157.075	U.S. Government only
82	157.125	157.125	U.S. Government only
83	157.175	157.175	U.S. Government only
84	157.225	161.825	U.S. Government only
85	157.225	161.825	Public correspondence
86	157.325	161.925	Public correspondence
87	157.375	161.975	Public correspondence
88	157.425	157.425	Public correspondence
WX1	162.550	162.550	Weather (receive only)
WX2	162.400	162.400	Weather (receive only)
WX3	162.475	162.400	Weather (receive only)

L.4.2 Air Traffic

During the initial period of a large spill incident, air traffic will be limited to immediate response aircraft such as air logistics contractors and OSPR. Aircraft activity during this early stage will be coordinated by the Transportation Unit. The FAA will be notified by the Operations Section Chief or the **Transportation Unit Leader** as soon as it is practical. Such a request can also be made through the Federal On-Scene-Coordinator. The FAA may be requested at that time to approve an Emergency Restricted Area. The FAA will specify direction of flight and altitudes and issue advisories as needed to control media and other air traffic. Aircraft involved in spill response operations will be assigned a unique frequency; aircraft operating in the restricted area will be controlled on this frequency.

Other designated frequencies for air traffic communications that can be accessed in an oil spill include the Department of Fish and Game's multicom frequency at 122.925 MHz. In addition, the Flight Phone 40 can be used during an incident for communications.

L.4.3 Marine Traffic Control

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Vessels entering the cleanup area will be hailed on Channel 9, 10, or 16 and transferred to an operating marine channel (156-158 MHz) where they will be advised of the situation and informed of special conditions in the area. Vessels have VHF-FM radio telephones or hand-held radios that can be used for this purpose.

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M.1 INTRODUCTION

A number of sensitive and unique marine and coastal habitats occur along Southern California coastal area that could be affected by a spill event. These areas are recognized with respect to their economic and cultural importance and their environmental sensitivity by governmental agencies. An inventory of sensitive environmental areas in the Santa Barbara Channel is provided in Figure M-1. The Channel Islands are over 15 miles from the facilities but are included because of their significance environmentally, economically, and culturally.

M.2 ENVIRONMENTALLY SENSITIVE RESOURCES (ACP 2008: Sec 9812)

Environmentally sensitive resources include:

- Shoreline types and associated marine resources.
- Presence of migratory and resident marine birds.
- Mammal migration routes and breeding, nursery, stopover, haul-out, and population concentration areas by season.
- Presence of aquatic resources.
- Presence of natural terrestrial animals, and plant resources in marine and upland associated environments.
- Presence of state/federal-listed rare, threatened or endangered species.
- Commercial and recreational fisheries including aquaculture sites, kelp leases, and other harvest areas.

Sensitive resources are identified and mapped in Area Contingency Plan (ACP) for Los Angeles/Long Beach (Northern /Southern Sector).

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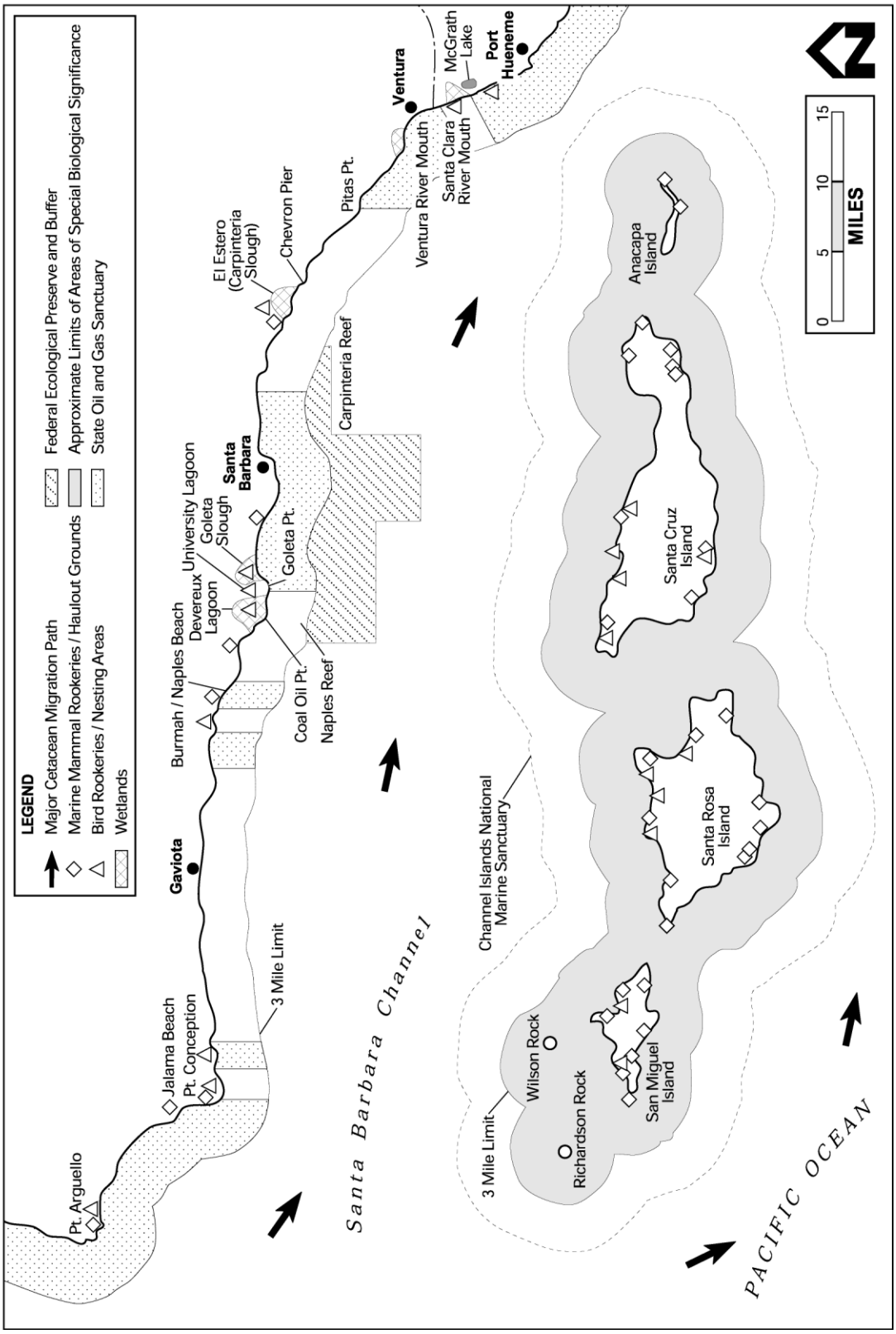
Figure M-1. Sensitive Resources in the Santa Barbara Channel.



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Sensitive sites identified on ACP maps are provided below in Table M-1.

Table M-1. Environmentally Sensitive Areas

Site No.	Sensitive Site Name
4-567-A	Point Conception/Government Point
4-570-A	Damsite Canyon Creek
4-572-B	San Augustine Creek
4-575-A	Arroyo El Bolito
4-580-A	Canada De Santa Anita
4-585-A	Canada Del Alegria
4-590-A	Canada Del Agua Caliente
4-605-C	Canada Del Alcatraz and Cementario Creek
4-601-A	Gaviota Creek
4-610-A	Refugio Creek
4-615-A	El Capitan Creek
4-620-A	Las Llagas
4-625-B	Naples, Dos Pueblos Creek
4-630-C	Eagle Canyon Creek
4-635-A	Tecolote Creek
4-640-A	Bell Canyon Creek
4-645-A	Devereux Slough
4-650-C	Goleta Point and Campus Lagoon
4-652-C	Goleta Beach
4-655-A	Goleta Slough
4-657-B	More Mesa/Goleta Rocks
4-660-A	Arroyo Burro Creek
4-662-C	Leadbetter Beach
4-665-A	Santa Barbara Harbor and Leadbetter Beach
4-670-A	Mission Creek; Laguna Channel
4-672-A	Sycamore Creek and Andree Clark Bird Refuge
4-674-A	Fernald Point Area
4-675-C	Summerland Beach
4-677-C	Loon Point and Elyse Creek
4-680-A	Arroyo Paredon Creek & Sandyland Area
4-685-A	Carpinteria Salt Marsh
4-690-A	Carpinteria Creek and State Beach
4-695-B	“Wave” Area, NW of Rincon Point
4-701-B	Rincon Point
4-705-C	Los Sauces Creek
4-711-C	Madranio Canyon
4-717-C	Javon Canyon
4-723-C	Padre Juan Canyon
4-729-C	A-Lease Canyon
4-735-C	Amphitheater Canyon
4-740-A	Ventura River
4-743-A	San Buenaventura State Beach
4-747-A	Ventura Harbor
4-750-A	Santa Clara River Estuary
4-761-A	McGrath State Beach, McGrath Lake
4-765-A	Mandalay State Beach
4-769-A	Oxnard State Beach
4-775-A	Channel Islands Harbor
4-780-A	Port of Hueneme

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Table M-1. Environmentally Sensitive Areas

Site No.	Sensitive Site Name
4-783-A	Ormand Beach Wetlands and State Beach
4-787-A	Laguna Point
4-790-A	Mugu Lagoon
4-800-A	San Miguel Island, Pt. Bennett Area
4-803-A	San Miguel Island, Castle Rock Area
4-806-A	San Miguel Island, Easy Simonton Cove
4-809-A	San Miguel Island, Harris Pt. To Bat Rock
4-812-A	San Miguel Island, Cuyler Harbor, East Side
4-813-A	San Miguel Island, Prince Island
4-815-A	San Miguel Island, Bay Point Area
4-818-A	San Miguel Island, South Side
4-820-A	Santa Rosa Island, West End
4-824-A	Santa Rosa Island, North Central Area
4-829-A	Santa Rosa Island, NE End
4-834-A	Santa Rosa Island, Lagoon (east Side)
4-839-A	Santa Rosa Island, SE End
4-844-A	Santa Rosa Island, Ford Point Area
4-848-A	Santa Rosa Island, South Point Area
4-850-A	Santa Cruz Island, Posa Anchorage
4-852-A	Santa Cruz Island, Christi Ranch Area
4-855-A	Santa Cruz Island, NW Area
4-858-A	Santa Cruz Island, Prisoners Harbor
4-861-A	Santa Cruz Island, Water Harbor Area
4-864-A	Santa Cruz Island, NE End
4-867-A	Santa Cruz Island, Sandstone Pt. Area
4-870-A	Santa Cruz Island, Valley Anchorage Area
4-873-A	Santa Cruz Island, Bowen Pt. To Coches Prietos
4-876-A	Santa Cruz Island, Willows Anchorage
4-878-A	Santa Cruz Island, Punta Arena Area and Gull Island
4-880-A	Anacapa Island

Using OSPR maps, sensitive areas are mapped and prioritized (Codes A, B, and C) according to an environmental sensitivity ranking. A Site Summary Sheet is provided for each sensitive site and includes information on the site's:

- Location: U.S.G.S. quad, longitude and latitude, Thomas Guide.
- Site Description.
- Seasonal and special resource concerns.
- Resources of primary concern.
- Cultural, historical and archeological sensitivities
- Trustee Agency/Local Expert contacts.

A second sheet for each sensitive area, the Site Strategy Sheet, specifically addresses protection, containment, and cleanup strategies, including recommended techniques, equipment considerations, and access and logistics information.

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Resources of concern in the area of Venoco's facilities and pipelines are summarized in Table M-2.

M.3 ECONOMIC AND CULTURAL RESOURCES (ACP 2008: Sec 9812, 9813, 9814)

Economic and cultural resources include:

- Public beaches, parks, marinas, boat ramps, and diving areas.
- Industrial and drinking water intakes, power plants, salt pond intakes.
- Offshore oil and gas leases and associated drilling platforms.
- Historical/archaeological sites.
- Areas of cultural or economic significance to Native Americans.
- Major waterways and vessel traffic patterns that are likely to be impacted.

The ACP contains a discussion of economically significant areas in a similar fashion as addressed for environmentally sensitive areas in Section M.2. Priority ranking codes D, E, and F are used to signify lower priorities for protection. The economic resources that may be affected, along with the appropriate priority ranking code for each resource, are summarized in Table M-3.

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Table M-2. Inventory of Potentially Affected Natural Resources.

INVENTORY OF POTENTIALLY AFFECTED NATURAL RESOURCES	
Marine Mammals Harbor Seal (pupping off Carpinteria) California Sea Lion Northern Elephant Seal ***Seabirds*** Brown Pelican (SE, FE) California Least Tern (SE, FE) Light Footed Clapper Rail (SE, FE) Belding's Savannah Sparrow (SE) Coastal California Gnatcatcher (FT) Western Snowy Plover (FT) Brandt's Cormorant Pelagic Cormorant Western Gull Pigeon Guillemot Red-necked Grebe Surf Scooter Black Skimmer Pacific Loon Red-throated Loon Common Loon Sandpipers Herons **Upland Birds** Northern Harrier (CSC) White-tailed Kite (SE) Golden Eagle (LC) Loggerhead Shrike (CSC) Coast Horned Lark (CSC) Lark Sparrow (LC) Grasshopper Sparrow (CSC) Yellow Warbler (CSC) Yellow Breasted Chat (CSC) Tricolored Blackbird (CSC) ***Fin Fish*** Tidewater Goby (FE) Steelhead Trout (FE) California Grunion (during spawning) Surf Perch Halibut Northern Anchovy Corbina White Sea Bass Bonita Thresher Shark Yellowtail California Barracuda Jack Mackeral **Coastal Upland Wildlife** Monarch Butterfly (CSC) California Red-legged frog (FE, SE) Badger (CSC)	***Shellfish*** Pismo Clam Abalone Spiny Lobster Crab Red Rock Shrimp ***Plants*** Salt Marsh Bird's Beak (FE, SE) Spartina Eelgrass Pickleweed **Upland Plants** Santa Barbara Honeysuckle ***Habitat/Reserves*** Point Conception to Ellwood Naples Reef Burmah Beach Tecolote Creek Coal Oil Point Devereux Slough and Lagoon University Lagoon Goleta Rocks/Slouch/Point Offshore City of Santa Barbara El Estero Lagoon Allesandro Lagoon – Ventura River Mouth Santa Clara River Estuary Natural Preserve Mugu Lagoon Lagoons Wetlands Creek mouths Dunes ***Channel Islands*** San Miguel Island Santa Rosa Island Santa Cruz Island Anacapa Island ***Key:*** *SE: State Endangered,* *FE: Federal Endangered;* *FT: Federal Threatened,* *CSC:Species of special concern in California,* *LC:Local Concern,* ***Sources:*** *ACP;* *OSPR Guidance Documents;* *CDFG Natural Diversity Database;* *MRS Biological Resources Survey For The Proposed Venoco Ellwood Pipeline Route*

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Table M-3. Inventory of Potentially Affected Economic Resources.

INVENTORY OF POTENTIALLY AFFECTED ECONOMIC RESOURCES	
Mariculture Areas – D[1] Port Hueneme Area – Stellar Biotechnologies Ormond Beach Area – C.I. Marine Resources Institute SB Harbor, Stearns Wharf – Eaglenet Sea Farms Santa Barbara – Henry's Sea Ranch, AB Tec, Pacific Seafood, Sea Ventures Ent. Inc., South Coast Shellfish Ellwood – Goleta – Neushul Mariculture Inc. Goleta-Dos Pueblos Cultured Abalone Conception Bay-Abalone Co. ***Water Intakes*** Edison Mandalay Bay Edison Ormond Beach City of Santa Barbara Sea Water Intake Marine Science Institute (UCSB) Sea Water System ***Parks – E***[1] Gaviota State Park Refugio State Beach Park El Capitan State Beach Park Santa Barbara Shores Beach Access Isla Vista Beach Goleta Beach County Park Arroyo Burro Beach West Beach Santa Barbara Stearns Wharf Chase Palm Park East Beach / Butterfly Beach Hammonds Beach Eucalyptus Lane Miramar Beach Lookout County Park Loon Point Carpinteria City & State Beaches Rincon Beach County Park Hobson County Park Rincon Parkway North (camping/picnicking) Faria County Park Rincon Parkway South (camping/picnicking) Emma K. Wood State Beach Ventura River Bicycle Path San Buenaventura State Beach Channel Islands National Park Headquarters McGrath State Beach Oxnard State Beach	***Parks – E***[1] Port Hueneme State Park Point Mugu State Park ***Marine Services & Commercial Fishing – E***[1] Santa Barbara Harbor Carpinteria Pier Ventura Harbor & Village Ventura Yacht Club Ventura Isle and West Marinas Vintage Marina Channel Islands Harbor Anacapa Isle Marina Bahia Cabrillo Yacht Landing Channel Islands Commercial Fishing Marina Channel Islands Marina and Landing Channel Islands Small Boat Marina Cisco Sportfishing Pacific Corinthian Marina Peninsula Yacht Anchorage ***Tourist Areas – F***[1] City of Santa Barbara Carpinteria Rincon Point (surfing) La Conchita Beach Mussel Shoals Beach Oil Piers Beach Solimar Beach Ventura Pier Oxnard Shores Hollywood Beach Silver Strand Ormond Beach ***Cultural Resources*** None identified (a cultural resource specialist would advise the spill response team as necessary)
Sources: *ACP, OSPR Guidance Documents*	

[1] ***Priority Rankings:***

D = Economic activities and resources which require high water quality for their operation or existence.

E = Facilities, businesses, or resources which directly use coastal or bay waters within their economic activity and which are at risk of oiling from a spill in marine waters.

F = Marine-associated facilities, businesses, and resources.

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This Plan does not attempt to identify the location of sites or areas of importance to Native Americans. Many coastal areas of significance to Native Americans are known or have been identified in the public literature; however, some are often confidential. Many confidential locations are held at regional Information Centers throughout the state and by local Native American organizations. There are numerous public agencies and individuals that should be contacted during a significant oil spill incident. Refer to the ACP 2008, Sections 9812.21 for the contact lists.

M.4 WILDLIFE CARE AND REHABILITATION (ACP 2008: Sec 3600-3640; Region IX Regional Contingency Plan – Section XXII Wildlife Response Plane for California June 2005)

M.4.1 Introduction

The protection, rescue, and rehabilitation of wildlife that are or may be endangered by a release of oil to the environment is a high-priority issue during the development and implementation of spill response procedures.

The activities involved in a wildlife response include:

- Protection.
- Rescue.
- Stabilization.
- Medical treatment.
- Transport.
- Cleaning.
- Rehabilitation and husbandry.
- Release.

Detail information on wildlife rescue and rehabilitation is included in the Federal Region IX Regional Contingency Plan, Sections XXII a and b.

M.4.2 Contacts

Wildlife resources are considered public resources and can only be managed, manipulated, or treated under the authority of the following trustee agencies:

- California Department of Fish and Game.
- U.S. Fish and Wildlife Service.
- National Marine Fisheries.

The federal permits required for hazing, collecting, or holding live animals are presented in Table M-4. Each of the trustee agencies has jurisdiction over specific wildlife resources. Many of

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the activities related to the protection, recovery, and/or rehabilitation of wildlife require either permits or permission of the trustee agencies.

Table M-4. Federal Permits Required.

FEDERAL PERMITS REQUIRED				
Wildlife Resource	U.S. Fish and Wildlife Service		National Marine Fisheries Service	
	Collect and Hold	Haze	Collect and Hold	Haze
Migratory Birds	Yes	No*	No	No
Sea Otters	Yes	Yes	No	No
Whales, Porpoises, Seals, And Sea Lions	No	No	Yes	Yes
Terrestrial Mammals, Fishes, And Non-Threatened Reptiles	No	No	No	No
Threatened Or Endangered Sea Turtles	No	No	Yes	Yes
* A USFWS permit is needed to haze species managed by the USFWS under the Endangered Species Act.				

The establishment and execution of an effective wildlife response therefore requires early communications between Venoco and the trustees. These communications should include:

- Scope and nature of the wildlife response.
- Identification of the wildlife responder.
- Identification of wildlife resources.
- Prioritization of actions.

Venoco has designated the California Oiled Wildlife Care Network (OWCN) as its wildlife responder. In the event of an oil spill to water, Venoco will ask OSPR, representing the State in the Unified Command, to make the call to activate the OWCN. (All activities of the Network, including rescue, triage, treatment, cleaning, rehabilitation, and release are subject to approval of the trustee representatives.)

M.5 MAPS OF SENSITIVE RESOURCES

OSPR and NOAA have prepared an Environmental Sensitivity Maps Index (ESI) Atlas for California. These maps are available to spill response and include information on:

- Shoreline Habitat Types.
- Human Use Features (e.g. access, boat camps, water intakes).
- Sensitive Biological Resources (including seasonal data).

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N.1 INTRODUCTION

Spilled oil and oil-contaminated materials recovered from water and/or land require proper handling. The management of oil and oil waste material, including recycling, treatment, storage, and disposal, must comply with the standards set forth in:

- 40 Code of Federal Regulations (CFR) Parts 261 and 265 as mandated by the Resource Conservation and Recovery Act (RCRA).
- California Code of Regulations Title 22, Division 4, Chapter 30.
- California Code of Regulations, Title 14, Division 1, Subdivision 4, Chapter 7, Subchapter 2, Determining Amount of Petroleum Hydrocarbons Recovered.

Spill response and cleanup procedures often produce contaminated materials that become wastes and need to be managed properly. These materials may be residue, contaminated soil or water, rinsings, absorbent and other debris. The oily materials must be characterized for proper handling. Waste handling procedures should be preceded by several steps with an overall objective of waste minimization, cost effectiveness, minimization of impact on unaffected areas or already cleaned areas, regulatory compliance, worker safety, and proper disposal. The person in charge of meeting these objectives is the **Decontamination Unit Leader**.

N.2 WASTE MINIMIZATION

Venoco's objective is to minimize, to the extent technically and economically feasible, the generation and disposal of waste from oil spill response operations. Venoco requires that all appropriate technically and economically feasible methods be utilized in order to reduce the overall volumes of waste generated and disposed of. The following practices and procedures have been adopted:

- Wastes will be carefully characterized to ensure that the appropriate waste treatment or disposal practices are employed.
- Land disposal of wastes will be considered to be the last resort. All other legally appropriate and available methods of waste handling will be investigated prior to disposal of waste to land.
- Recycling of wastes, whether onsite or offsite, will be considered for each waste stream.
- Onsite or offsite treatment of hazardous waste will be carefully evaluated to determine whether such treatment could reduce the hazardous characteristics of the waste without threatening the safety of employees. Treatment of hazardous waste in the field may not be realistic under most circumstances.
- All employees are encouraged to provide suggestions on ways to minimize waste generation and disposal and report them to the **Decontamination Unit Leader**.

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N.2.1 Debris Avoidance

It is generally not possible to avoid the generation of oily debris. **However, it is possible to minimize the generation of oily debris in the coastal zone if the anticipated area of oil impact is cleaned.**

Personnel can be deployed to remove debris from beach intertidal areas to above the high tide line in order to minimize oiling of stranded debris/trash. It is important to note that such crews are not likely to be certified as required under the Occupational Safety and Health Administration (OSHA) regulations in 29 CFR 1910.120 and can only perform this task prior to the stranding of spilled oil. A safety/industrial hygiene specialist should be consulted regarding the limitations of those crews and the effective establishment of exclusion zones in the area of beach impact.

N.2.2 Selection of Personal Protective Equipment

Depending upon climatic conditions and material compatibilities of personal protective equipment (PPE), waste can be minimized through the selection of reusable equipment, when possible. For instance, heavy gloves and boots can be decontaminated effectively and reuse can minimize the generation of oil-contaminated disposable gloves and boots, as long as the Safety Officer approves such equipment. Reusable rain gear may also be used instead of disposable suits, if approved. Such decisions should be made early in the response process in order to minimize generating containerized, contaminated PPE, which is generally disposed of at Class I (California hazardous waste) facilities.

N.2.3 Recovered Oil And Oily Waste

Both oil and oily water recovered from skimming operations should be offloaded to facilities where it can be recycled or managed within the established process and treatment streams. Such facilities may include warehouses, refineries, commercial reclaimers, and recyclers. These facilities can often provide temporary tank storage when necessary.

N.2.4 Sorbent Use/Reuse

Synthetic sorbents (i.e., pads, sweeps, booms) are standard response materials used to recover spilled oil. Their oleophilc, hydrophobic character makes them efficient at separating oil and water. They are also routinely used to recover oil from solid surfaces. Since oiled sorbent material often constitutes a substantial percentage of the oily solid waste generated during a response, opportunities for minimizing this waste volume should be considered.

Some sorbents are designed to be reusable or can be recycled onsite with inexpensive gear. Sorbent manufacturers' instructions should be followed regarding the limits of effective reuse for individual products. Sorbent sweeps and booms may be replaced with recyclable boom and other appropriate gear in circumstances where floating oil can be efficiently recovered without generating oiled sorbents. For example, in low energy shoreline areas with good access (e.g. harbors, bays, inlets), it may be possible

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to use containment booms and recover trapped oil with vacuum trucks instead of contaminating large volumes of sorbent.

N.2.5 Petroleum-Contaminated Soil Recycling And Reuse

Soils may be reused as daily landfill cover if after treatment they satisfy the waste profiling requirements of the State and commercial facilities. Oil/solid residuals may also be incorporated into construction materials. The costs and benefits of such recycling (less than $100 per ton and low future liability) versus disposal in a California Class I or II disposal facility (greater than $100 per ton and moderate-to-high liability) are substantial.

N.3 WASTE MANAGEMENT POLICIES

N.3.1 Disposal

Land disposal of waste, especially hazardous waste, is considered to be the least preferred method of waste disposition. Not only is land disposal of waste a costly option because of the many fees and taxes which must be paid, it is often the least environmentally sound method of dealing with waste.

N.3.2 Reuse and Recycling

Reuse and recycling of wastes are encouraged whenever appropriate and practicable. Many reuse and recycling activities of hazardous waste are strictly regulated. The **Decontamination Unit Leader** is responsible for the coordination of these activities.

N.3.3 Onsite Disposal

Onsite disposal of any waste is strictly prohibited unless specific approvals from the **Decontamination Unit Leader** and all appropriate agencies are obtained.

N.3.4 Storage

Storage of waste on designated sites is allowed while waste is being properly characterized, and pending proper treatment or disposal. Stockpiling of waste is an unacceptable waste management practice.

A temporary emergency permit for temporary storage facilities can also be issued by the California Department of Toxic Substances Control (DTSC) pursuant to 22 CCR §66263.18. The temporary facility/facilities should be available at an onshore location(s) nearest the recovery operation to temporarily store recovered petroleum products and contaminated materials and debris. Siting of the facility/facilities should be done with concurrence of DTSC and the Regional Water Quality Control Board.

N.3.5 Other Practices

Other waste management practices may be available and appropriate for wastes generated from spill response operations. These practices may include separation of petroleum and water, and extraction of oil from soil sorbents and booms using transportable treatment units, bioremediation of hydrocarbon

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contaminated soils, and other methods. The **Decontamination Unit Leader** is responsible for the coordination of these activities, including acquiring permits and/or agency approvals.

N.4 REGULATORY DEFINITION OF WASTES

N.4.1 Introduction

Hazardous waste in California is defined by both federal and state regulations. The basic definition of a hazardous waste is set by the federal regulations. The California definition parallels the federal but expands the hazardous waste definition to be even more stringent. The federal regulations also define restricted and acutely hazardous waste and California regulations define restricted, designated, and non-hazardous waste.

The Federal Resource Conservation and Recovery Act (RCRA) is the basic statutory framework for federal regulation of hazardous waste and covers the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was enacted in 1976 and it was most recently amended in 1984. RCRA is administered by the United States Environmental Protection Agency (EPA), Office of Solid Waste.

The California Hazardous Waste Control Law is the basic statutory framework for hazardous waste management in California. This program was originally enacted in 1972 and has been amended many times. This program is administered by the California Environmental Protection Agency (CalEPA), DTSC.

Proper classification and disposal of wastes are very important in order to avoid severe civil and criminal penalties, as well as to minimize future cleanup liabilities. Once petroleum products are spilled to navigable waters, they must be considered a hazardous waste until a waste classification is conducted. It is the generator's responsibility to properly classify the waste because handling, treatment, storage, transport, and disposal will depend on this classification.

N.4.2 Overview of Waste Categories

Wastes fall into one of the following general categories under federal and state regulatory schemes:

CATEGORY	STATE REGULATED	FEDERAL REGULATED
Hazardous Waste	X	X
California Hazardous Waste	X	
Extremely Hazardous Waste	X	
Restricted Hazardous Waste	X	X
Designated Waste	X	

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Non-Hazardous Waste	X	X

The category of the waste will generally determine which disposal option may be legally available.

N.4.3 Federal Hazardous Waste

In order for a substance to be considered a hazardous waste under RCRA, it must meet the following qualifications:

- The substance must be a solid waste (by definition, a solid waste can be a liquid).
- The substance must be discarded.
- The substance must not be specifically exempted or excluded.
- The substance must exhibit certain specific characteristics of a hazardous waste or be specifically listed as a hazardous waste.

Several categories of substances related to oil production operations are excluded or exempt from RCRA regulations including waste residue, waste in process lines, waste samples and recyclable materials. However, it is important to note that even though a waste may be exempted under RCRA, the state regulations may still apply.

RCRA defines the characteristics of a hazardous waste as ignitability, corrosivity, reactivity, and toxicity. If a substance shows one or more of these characteristics, it is classified as hazardous even if the waste is not otherwise specifically listed as a hazardous waste. Substances derived from hazardous wastes and mixtures of solids or liquids and hazardous waste are hazardous wastes.

The 1984 Hazardous and Solid Waste Amendments to RCRA essentially banned all RCRA hazardous waste from land disposal as of May 8, 1990, unless the wastes have been treated to a specific standard to reduce their toxicity. Once treated, the waste may be disposed of in a hazardous waste disposal facility.

40 CFR Part 261.3 defines hazardous waste and provides guidelines for characterizing spilled materials. The following questions should be considered in evaluating mixtures:

1. *Is the spill residue a RCRA-listed hazardous waste?* [261.3(c)(2)(i)]

   There are two ways a spill residue could be a RCRA-listed hazardous waste:

   - First, if any material spilled was itself a RCRA-listed hazardous material. According to the mixture rule, the resulting spilled residue is automatically a RCRA-listed hazardous waste, regardless of the amount of listed hazardous material contained in the residue.
   - Second, if the material spilled was a commercial chemical product listed in 40 CFR 261.33(e) or (f), any resulting residue that needs to be discarded is a RCRA-listed hazardous waste.

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As with any listed waste, or derivation from a listed waste, the spilled residue is a RCRA-listed hazardous waste unless de-listed by EPA and the California Department of Health Services.

2. *Is the spill a RCRA-characteristic waste?* [261.3(d)(1)]

   Does the spill residue exhibit any of the four defining characteristics? The spill residue is only hazardous if the residue exhibits a hazardous characteristic.

Decontamination Unit Leader should be consulted in the classification of RCRA waste streams and their ultimate disposal.

N.4.4 California Hazardous Waste

California regulations define hazardous waste as any waste which, due to its quantity, concentration, or physical, chemical or infectious characteristics, may either cause an increase in mortality or serious illness, or pose a substantial threat to health or the environment when improperly handled. All wastes defined as hazardous under RCRA are also defined by California as hazardous.

Additionally, a waste is hazardous if it meets any of the criteria for toxicity, ignitability, reactively, or corrosivity as defined by RCRA. California also adds criteria for persistence and bioaccumulation. A waste is hazardous if it contains a listed persistent and bioaccumulative substance in a concentration:

1. greater than the total threshold limit concentration (TTLC) or
2. greater than the soluble threshold limit concentration (STLC) as determined by the Wet Extraction Test.

Examples of California hazardous waste includes spent acids (corrosive), light oil tank bottoms (ignitable), contaminated soils (heavy metal concentration), and waste water (presence of a halogenated solvent such as carbon tetrachloride and TCE).

N.4.5 California Extremely Hazardous Waste

The category of extremely hazardous waste is defined as any hazardous waste or mixture of hazardous waste "which, if human exposure should occur, may likely result in death, disabling personal injury or serious illness." A list of chemicals that are considered to be extremely hazardous wastes is provided in 22 CCR Chapter 11, Appendix X. Additionally, a waste that meets the criteria in 22 CCR §§66261.110 and 66261.113 is an extremely hazardous waste. Examples of wastes potentially considered to be extremely hazardous wastes which may be found in oil production activities include, but are not limited to, chlorine, hydrogen sulfide, acrolein, mercury, polychlorinated biphenyl (PCBs), and hydrofluoric acid.

Additionally, requirements and restrictions apply to wastes defined as extremely hazardous waste. For example, a disposal permit is required for the disposal of extremely hazardous waste.

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N.4.6 California Restricted Hazardous Waste

As of May 8, 1990, all hazardous wastes in California were to be prohibited from land disposal without prior treatment to reduce their toxicity. However, various extensions of this deadline have been provided by the State. Before preparing to dispose of a hazardous waste, the land disposal status should be reviewed by **Decontamination Unit Leader**.

N.4.7 Non-Hazardous Waste

The State of California categorizes non-hazardous wastes into two categories for purpose of identifying disposal options. These categories are:

- Designated wastes.
- Non-hazardous solid wastes.

These categories are prescribed under the California Water Code and the requirements are enforced by the Regional Water Quality Control Board.

Designated waste is a non-hazardous waste that contains pollutants that could cause degradation of water quality or is a hazardous waste, which has been granted a variance from hazardous waste management requirements. Examples of designated wastes include oil production wastes such as heavy oil tank bottoms, produced water, and soil contaminated with hydrocarbons. These and other wastes may be considered non-hazardous if they have been tested/reviewed to be non-hazardous. If the waste is determined to be a designated waste, certain disposal restrictions may apply. For example, designated wastes may only be taken to an approved land disposal facility. It should be noted that onsite treatment may be available for designated waste rather than disposal at a landfill. For example, soil contaminated with hydrocarbons could be treated onsite through methods such as bioremediation, vapor extraction, and chemical treatment to render the waste non-designated.

Non-hazardous solid waste generally includes rubbish, trash, and inert wastes, such as concrete, which do not meet the criteria of hazardous or designated wastes. Non hazardous solid wastes must be taken to an approved solid waste disposal facility.

N.5 WASTE CLASSIFICATION

Proper waste classification is one of the most important steps in waste management. The objective of characterizing the waste is to ensure proper handling in accordance with federal and state regulatory requirements. The **Decontamination Unit Leader** will characterize the waste. (An unknown waste is treated as hazardous.) To profile a waste, the waste will be sampled (with duplicates taken) according to a prescribed sampling procedure and sent to a laboratory or Treatment, Storage, and Disposal Facility (TSDF) for analysis. (It is preferable to have the analysis conducted at a laboratory.) The laboratory must be certified by the State to analyze hazardous wastes, approved by Venoco, and utilize EPA or California-approved tests. Both EPA and California list specific tests (e.g., TCLP and WET) that must be

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used to characterize a waste stream. The analytic tests recommended for oil-contaminated soil and debris are as follows:

- Ignitability.
- CCR Title 22 Metals.
- Total Petroleum Hydrocarbons (EPA Method 418.1, Crude Contamination).
- Fuel Hydrocarbons (Modified EPA Method 8015, Product Contamination).
- B/T/X/E EPA Method 8020.
- Acute Aquatic Assay.

Additional tests may be required depending on the specific circumstance. These tests may include reactivity, TCLP for benzene, volatile organics, and semi-volatile organics. After the waste is analyzed, Venoco will send the analysis to an appropriate Treatment, Storage, and Disposal Facility (TSDF) for profiling.

N.6 WASTE HANDLING

A primary concern in the handling of recovered oil and oily debris is the prevention of contamination of previously unaffected areas or recontamination of areas already cleaned. This can be accomplished by using correct handling techniques.

Collection method and activities will be under the control of the Incident Commander. The **Decontamination Unit Leader** is responsible for management of waste and should be in constant communications with the Incident Commander. He will accomplish this task in coordination with Venoco's Corporate Water and Waste Coordinator.

Recovered oil should be placed in sealable containers such as five-gallon cans with lids or caps, 55-gallon drums, portable pillow tanks, and tank trucks or other containers that can be sealed to prevent spillage. If the spill is from a tank, the recovered oil may be pumped back into sound tanks of compatible material or the recovered oil tanks. Oily wastes should be placed in leak-proof containers to prevent leakage during handling and transportation. Double-walled plastic bags are convenient for this purpose. For larger materials or those which could perforate the bags, debris boxes or similar containers could be used as long as they are lined with plastic or made leak proof by some other means. Hazardous waste bins and lined, dump truck beds may also be used for collection of oily wastes.

Oily debris, whether it is vegetation, sediments, or other materials, should be placed in leak-proof containers during handling and transport. Plastic bags are convenient for this purpose. Bags should be clearly marked or color-coded to indicate the type of waste. Debris boxes or similar containers may also be used provided they are lined with plastic or rendered leak-proof by some other means.

Proper handling of oil and oily wastes is imperative to ensure personnel health and safety. Care will be taken to avoid contact with oily wastes. All persons handling or coming into contact with oily wastes will

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wear protective clothing such as rain suits, rubber boots, and gloves. A barrier cream may be applied to response person's hands prior to putting on gloves to further reduce the possibility of oil waste absorption. Safety goggles will be worn by persons involved in waste handling activities where splashing might occur. Any portion of the skin exposed to oily waste will be washed with soap and water.

N.7 TEMPORARY ONSITE STORAGE

N.7.1 Regulatory Requirements

To expedite removal of spilled oil, refined products, and contaminated material from marine waters during an emergency response, temporary storage sites may be erected at appropriate shore locations (22 CCR 66270.1(c) 3).

The transportation of oil and contaminated material to temporary storage sites during a response is exempt from handling and permitting requirements (22 CCR 66263.30 and/or 22 CCR 66263.43). The onsite California Environmental Protection Agency, Department of Toxic Substance Control (DTSC) representative or duty officer should be contacted for approval. If a Unified Command is established, OSPR will facilitate the contact with the DTSC through their liaison function.

Venoco will maintain responsibility for recovered oil and oily wastes generated during recovery operations. A temporary storage site may require an emergency permit from the California Coastal Commission (CCC) Oil Spill Program to respond to oil-spill-related matters along the coast. The program acts as a single point of contact, and requests for emergency permits should be directed to the CCC Oil spill Program staff.

Siting of the temporary facility must be done with the concurrence of the FOSC and State OSC, DTSC, the local RWQCB, and the local health, fire and emergency services departments. If a Unified Command is established, OSPR will facilitate the contact of state and local government agencies' non-command through their liaison function.

N.7.2 Storage Methods (ACP 2006: Sec 3230.4, 3240.11)

Response operations will generate large quantities of waste materials. Recovered oil may contain substantial quantities of water and debris. To facilitate subsequent transportation and disposal efforts, the water and debris should be separated from the oil. Segregating wastes according to type facilitates and reduces the costs of disposal. Non-hazardous wastes must be segregated and stored away from designated or hazardous waste. If non-hazardous waste becomes mixed with designated or hazardous waste, the entire waste will become a designated or hazardous waste.

The following factors should be considered in selecting a storage method:

- The type and volume of material to be contained.
- The type of contaminants present, if any.
- The duration of storage.

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- The environmental setting.
- Access.
- The time of year.
- The proximity to residential/recreational areas.

Non-hazardous waste should be stored in a manner that does not cause hygiene or safety problems, poor housekeeping, or nuisance conditions. The following considerations should be taken into account:

- Wastes that are subject to decay should be placed into appropriate roll-off bins or other trash receptacles covered to minimize odor.
- Solid non-hazardous wastes should be stored such that excessive dust will not create nuisances to the surrounding community.
- Solid non-hazardous or inert waste should be stockpiled so as not to create a safety problem.

The storage of designated and hazardous wastes should be given the same considerations in order to minimize the damage to health, safety, the environment, or property. All containers used to store these wastes should be suitable for storage of the specific wastes and be sound. The following practices should be observed:

- Oily debris should be stored in roll-off bins or dumpsters that are lined with plastic sheeting prior to use. To control free liquid accumulation in the containers, an inner lining of sorbent fabric should be used.
- Tanks should be sound and have sufficient shell strength. Closed tanks should have pressure controls such as vents to ensure that they do not collapse or rupture.
- Containers should be closed or fully covered during storage except when it is necessary to add or remove wastes.
- Any containers storing ignitable or reactive wastes should be stored at least 50 feet from the facility's property line.
- Incompatible wastes should not be stored in the same container or in an unwashed container that previously held an incompatible waste. Incompatible wastes stored in the same area should be separated by a wall or dike.
- There should be a containment system around the tanks to contain any leaks or spills and that will have the capacity to contain 100% of the contents of the single largest tank in the area.
- Containers should be stored in areas with sufficient containment capacity to handle precipitation from at least a 24-hour, 25-year storm plus 10% of the aggregate total volume being stored or the volume of the single largest container, whichever is greater.
- The base of a containment area should be of impervious materials and be free of cracks and gaps.

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- Storage areas should be inspected regularly to ensure that tanks, containers, bags, etc. are not leaking and are in good condition.
- If any liquid is spilled within the containment curbs or dikes, the liquid should be removed immediately.
- Hazardous wastes should not be stored in tanks with a capacity of more than 5,000 gallons. Hazardous wastes should be stored in compliance with the time-period and labeling requirements prescribed by law.

The volume of oil that can be recovered and dealt with effectively depends upon the storage capacity available. Segregation of different waste streams is required to determine the amount of liquid petroleum hydrocarbons recovered in accordance with State regulations (see Appendix N.8). A summary of temporary storage methods is provided in Table N-1. The option(s) selected will be subject to regulatory requirements and approvals.

Table N-1. Temporary Storage Methods.

Container	Onshore	Offshore	Solids	Liquids	Notes
Drums/Roll-off Bins	✓	✓	✓	✓	May require handling devices. Must be covered and clearly marked or coded.
Plastic Bags	✓	✓	✓		Must be clearly marked or coded.
Dump/Flat Bed Trucks	✓		✓		Must be lined and covered. Consider flammability of vapors at mufflers.
Tank Trucks	✓	✓		✓	Consider road access. Can be barge-mounted.
Barges		✓	✓	✓	Liquids only in tanks. Consider venting of tanks.
Storage Tanks	✓	✓		✓	May require special hoses or pumps for transfer.
Storage Bags	✓	✓		✓	May require special hoses or pumps for transfer. Care not to subject to excessive motion on vessel.
Pits	✓		✓	✓	Liners and berms required. Locate above high water mark, on level terrain, and away from streams.
Note: All storage containers arriving at a temporary storage site/staging area should be inspected prior to use.					

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N.7.3 Temporary Storage Sites/Staging Areas

Staging areas should be selected for use as a point of accumulation and temporary storage for oil spill-related wastes. These sites for wastes should be located with good access to the cleanup operations and to nearby streets and highways. Good storage sites are flat areas such as paved parking lots. Temporary storage sites should be selected and prepared to minimize contamination of surrounding areas from leaching oil. All area drains in the vicinity of a site should be identified and, in the event of a spill, all potentially affected drains should be diked.

Storage sites should not be located on or adjacent to ravines, gullies, streams, or the sides of hills, but will be located on areas with a minimum slope and above the high water mark. Access to the storage sites should be controlled and a five-mile-per-hour speed limit should be enforced within these sites. A spill control kit should be kept at each site. This kit includes a patch kit for potential leaking containers and a supply of sorbent and socks. Venoco has pre-identified the Ellwood Pier and Sandpiper Golf Course Parking lots and the northern end of the Ellwood Marine Terminal property as temporary waste storage sites/staging areas. Clean Seas maintains temporary storage capabilities in excess of 15,000 bbls. The selection of all site(s) are subject to regulatory requirements and approvals.

N.7.4 Container and Waste Tracking

The **Decontamination Unit Leader** will maintain a log tracking each container utilized (e.g. roll-off bin, fast tank, or other container) at the temporary storage sites/staging areas. The information entered into the log includes:

- Vendor name.
- Container type.
- Container's serial number.
- Internal tracking number.
- Delivery date.
- Pickup date.
- A brief description of the container's condition.

An internal tracking number is assigned sequentially according to container type (e.g., the first roll-off bin used will be assigned the number RB-001). This number indicates the destination on a Waste Tracking Form for each load of waste added to that container.

On a daily basis, the **Decontamination Unit Leader** will document the following daily and cumulative totals for each waste stream:

- Volume of waste received.

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- Volume of waste stored onsite.
- Volume of waste disposed, by disposal facility.

N.8 QUANTIFYING THE AMOUNT OF LIQUID HYDROCARBONS RECOVERED

As required by CCR Title 14, Division 1, Subdivision 4, Office of Oil Spill Prevention and Response Chapter 7 (Enforcement), Subchapter 2, Section 877-880, Venoco must determine the number of gallons of discharged liquid petroleum hydrocarbons that are recovered and properly disposed of. The term "disposed of" includes liquid petroleum hydrocarbon that is reprocessed, recycled, or otherwise utilized as an ingredient in the manufacture of petroleum products or other products.

The regulations specify in detail required sampling analyses and calculations for the following waste streams (each considered separately):

- Contaminated sediment.
- Boom and sorbents.
- Debris.
- Liquid petroleum hydrocarbons.

The total recovered petroleum hydrocarbons are the sum of the volume of petroleum hydrocarbons from the four waste streams (in gallons).

N.9 INITIAL TREATMENT OF TEMPORARILY STORED MATERIALS

Petroleum and petroleum-contaminated cleanup materials can potentially be treated at a temporary storage site. Treatment processes include:

- Separation of water from collected petroleum with the aid of a transportable treatment unit (TTU).
- Decantation of water off petroleum materials stored temporarily in tanks.

Any water generated through the separation of petroleum and water may be discharged to a sanitary sewer system. Discharging to the sanitary sewer system will require a permit from the local sanitation district, which will establish effluent requirements for the discharged water. Should the sanitation district not allow the discharge of water to its system, the recovered water could either be discharged to marine waters or transported offsite for disposal. The discharge of recovered water to State waters will require an NPDES permit from the local RWQCB.

A portable incinerator is another type of TTU available during a spill response for use with contaminated material. The use of an incinerator will require a permit from the local air quality agency. The potential use of any TTU and applicable regulatory standards must be discussed with DTSC.

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N.10 WASTE TRANSPORT

Recovered petroleum product that is not accepted at a refinery or recycling facility and contaminated material must be transported to an approved waste management facility. The type of waste management facility selected is based on the results of the waste characterization tests performed.

N.10.1 Hazardous Waste

Waste classified as hazardous under either federal or state regulations must be transported to a permitted or interim status hazardous waste facility. Hazardous waste must and will be transported by state-licensed hazardous waste transporters. The licensed hauler must have a U.S. EPA identification number and state transporter identification number. Prior to removal of the hazardous waste, a manifest (form DHS-8022A) must be prepared for recovered petroleum and other contaminated materials (22 CCR §§66263.20-66263.23). See also Section N.12, Waste Documentation.

N.10.2 Non-Hazardous Waste

Waste determined to be a non-hazardous but designated waste (23 CCR §2522) can be transported to a Class ll waste management facility. Manifesting of the waste is not required but a Bill of Lading is required for transportation. The appropriate RWQCB and local health department should be contacted to identify the appropriate waste management facility and any additional waste testing requirements.

Non-hazardous wastes are transported by non-hazardous waste licensed transporters. A list of approved transporters is provided in the Directory of Contacts (Section 2.5, Table 2-21).

A hazardous waste manifest must accompany each load of hazardous waste and a Venoco non-hazardous shipping paper will accompany each load of designated waste or non-hazardous waste. (See also Section N.12, Waste Documentation). Proper transportation of recovered oil and oily waste in accordance with Federal, State, and local regulations is the responsibility of the **Decontamination Unit Leader**.

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N.11 WASTE DISPOSAL

N.11.1 Waste Disposal Sites

The disposal, treatment, and recycling/reuse options legally available will depend on the classification of the waste. Inappropriate disposal, treatment, recycling/reuse is prohibited by law. Therefore, it is important to select the proper waste disposal options. Table N-2 summarizes the waste categories and the approved classes of facilities for each waste category.

Table N-2. Classification of Waste Facilities.

Waste Category	Approved Facilities
Hazardous Waste	Class I Hazardous Waste TSDF
Hazardous Waste Granted a Variance or Designated Waste	Class I Hazardous Waste TSDF or Class II Facility Permitted to Accept Designated Waste
Non-Hazardous Solid Waste	Class III – Landfill
Inert Waste	Landfills as approved by the Regional Quality Control Boards

Recycling, reuse, onsite or offsite treatment of wastes, which are classified as hazardous or designated, are reviewed on a case-by-case basis for approval. Recycling, reuse and onsite or offsite treatment of hazardous waste is encouraged where economically and technologically feasible. A list of disposal sites and recycling facilities for various categories of materials is provided in the Directory of Contacts (Section 2.5, Table 2-21).

N.11.2 Disposal Options

N.11.2.1 Crude Oil and Refined Petroleum Products

Under California law, material released or discharged to marine waters of the State is defined as waste. Once the final disposition of a specific waste is determined, the waste may be redefined as a product or material and may no longer be subject to waste management requirements.

Crude oil that is spilled into marine waters, recovered and transported to a refinery may be considered a product and may not be subject to hazardous waste management regulations [California Health and Safety Code (CHSC), 25943.2 (sic)]. The collected crude may be shipped to the refinery of the original destination or a refinery that can accept the spilled crude oil. Refined petroleum products that are recovered from marine waters may also be handled as product if they can be used for their regularly intended purpose (I.e., fuel, fuel oil, etc.) (CHSC 25250.3).

Recycling is another option by which recovered petroleum may be managed as a material (CHSC 25143.2). This option includes using petroleum in incineration as a fuel, as a substitute for raw materials feedstock, or as an ingredient used in the production of a product (e.g., asphalt).

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Recovered petroleum that is not accepted by a refinery or that cannot be recycled must be managed as a waste. In order to determine the appropriate method of management, the waste must be characterized by a State-certified laboratory to determine if the waste is hazardous or non-hazardous. The responsible party must have the waste properly characterized for disposition [Title 22, Section 66260.200(c) of the California Code of Regulations].

N.11.2.2 Decanting Of Water Separated From Recovered Oil At Sea

Oil recovered at sea typically contains significant amounts of seawater. In order to maintain the efficiency of the skimming process for recovery, this water must be separated/decanted from the oil and discharged back into the ocean during recovery operations. Separated seawater typically contains elevated levels of hydrocarbons and thus, the discharge of this material may constitute a discharge of a pollutant. Blanket permission has been granted to decant water into a contained area in a response area. The DFG, OSPR, and RWQCB have mutually agreed on this issue. The FOSC has always had the authority to allow decanting of recovered water; that is, the FOSC or designated representative may authorize discharge of separated/decanted water back into the catenary area of a boom/skimming system outside State waters (three miles) with the exception of NOAA marine sanctuary waters.

N.11.2.3 Contaminated Debris

Contaminated debris, including organic material, contaminated cleanup equipment, and other contaminated materials that cannot be recycled must be managed as a waste. The materials must also be characterized as hazardous or non-hazardous before the appropriate waste management option is determined.

N.11.2.4 Oiled Animal Carcasses

DFG should be notified of any dead or oiled wildlife, prior to taking any action. DFG should provide instructions on how to handle these animals and whom to notify. If permission is granted to collect dead animals, with the concurrence of DFG, the following steps should be taken:

- Photograph the animal.
- Place the carcass in a sealable bag with an identification tag.
- Note the date, time, location, condition of the animal, and the distance from the spill.
- Store the carcass on ice for up to 24 hours. Freeze if held longer.

If significant numbers of animals are affected, Venoco may choose to bring in a Technical Specialist to establish a group for handling examination, dispensation, disposal, and agency interactions.

Oiled animals and carcasses collected by others should be turned over to the DFG/OSPR representatives who are responsible for wildlife rehabilitation and collection of carcasses for Natural Resource Damage Assessment (NRDA) investigations. The identification and location of OSPR representatives can be

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provided by the Unified Command. The DFG will be responsible for the disposal of oil-contaminated carcasses.

N.12 WASTE DOCUMENTATION

Records regarding waste are extremely important. Not only is recordkeeping required by law for all hazardous wastes, the records also provide documentation that Venoco complied with all relevant laws and regulations regarding waste management. Records will also provide the basis for hazardous waste fee computation. Table N-3 provides a summary of the records that are maintained for waste activity. Required records are maintained in easily retrievable files. If, due to space constraints, records are archived in a warehouse or other storage facility, a log to file is maintained to allow for easy retrieval.

Table N-3. Waste Documentation.

Record	Required By	Retention Period
Laboratory Test Results (including Chain of Custody, Sampling Map, and Methodology	22 CCR §66262.40(c) 40 CFR §262.40(c)	3 years from date waste treated or disposed
Venoco Non-Hazardous Shipping Paper	Company Procedure	Indefinite period
Uniform Hazardous Waste Manifest – Not yet signed by the disposal or treatment facility	22 CCR §66262.40(a) 40 CFR §262.40(a)	3 years or until signed manifest from the disposal or treatment facility is received
Hazardous Waste Manifest – Signed by the disposal or treatment facility	22 CCR §66262.40(a) 40 CFR §262.40(a)	3 years minimum by law
Exception Report	22 CCR §66262.40(b) 40 CFR §262.40(b)	3 years from the due date of this report
Biennial Report	22 CCR §66262.40(b) 40 CFR §262.40(b)	3 years from the due date of the report (March 1 of each even-numbered year)
Waste Profile	Company Procedure	Indefinite period
Hazardous Waste Generator Fee Return Hazardous Waste Generator Disposal Fee Return	Company Procedure	Indefinite period
Extremely Hazardous Waste Disposal Permit	Company Procedure	Indefinite period
Incineration/Waste Destruction Certificate	Company Procedure	Indefinite period
Employee Training Records	22 CCR §66265.16(e) 40 CFR §265.16	For all current employees Former employee – 3 years

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O.1 APPLICABLE REGULATIONS

The Occupation Safety and Health Administration (OSHA) has promulgated two sets of regulations that are applicable to oil spill response operations. They are:

- Hazard communications regulations (29 CFR §1910.1200).
- Hazardous waste operations and emergency response (HAZWOPER) regulations (29 CFR §1910.120).

The hazard communications regulations require that workers be informed of any hazards associated with the materials they may come into contact with during the conduct of response operations. Hazardous waste operations and emergency response regulations require the preparation of a Site-Specific Safety and Health Plan and, that workers be properly trained to carry out response operations in a safe and healthful manner.

O.2 EMPLOYEE RESPONSIBILITIES

Each employee must have a positive attitude toward injury prevention and safety. The employee should believe that all injuries can be prevented and act accordingly. The employee is responsible for the following actions:

- Perform the job safely, for personal safety, safety of fellow workers, and protection of facilities. This includes the proper use of safety equipment and devices, as well as safe work practices.
- Report every injury, as well as unsafe conditions or practices (including contractors), to his/her supervisor.
- Participate in all safety meetings.
- Assist in reporting and investigating incidents, injuries, and potentially serious incidents.
- Review and become familiar with the contents of safety manuals, handbooks, and publications.

O.3 CONTRACTOR RESPONSIBILITIES

Contractors will take all necessary precautions for the safety of all persons on the work site. Contractors must comply with Venoco safety rules and regulations, and applicable federal, state, and local safety laws, rules, and regulations necessary to prevent injury to persons or damage to property. In addition, contractors must:

- Ensure that their employees are trained in Venoco safety rules and practices, and in job-specific procedures.
- Perform all work in a safe, workmanlike manner.

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- Provide required safety equipment for their employees.
- Report injuries, near misses and incidents, no matter how slight (including property damage) immediately (within 24 hours) to the Venoco supervisor or designated alternate.
- Operate valves or equipment without the Venoco supervisor's or designate alternate's approval, except in a life-threatening situation.
- Hold a pre-job safety meeting and other safety meetings as needed during the execution of the job.
- Communicate with the Venoco supervisor or designated alternate before beginning work.

O.4 CHAIN OF COMMAND

Overall responsibility for safety and health issues during response operations rests with the Incident Commander. The Safety Officer is responsible for safety and health matters. These safety-and-health-related activities are:

- Ensure that all response personnel receive the necessary level of training required under the HAZWOPER regulations.
- Ensure that all company safety policies, procedures, practices, and regulations are known and strictly adhered to during the conduct of response operations.
- Assist in personnel exposure monitoring.
- Prepare Site-Specific Safety and Health Plan.
- Ensure that there is an adequate supply of protective clothing and equipment for all personnel involved in response operations, and that personal protective equipment is properly utilized throughout operations.
- Ensure that all personnel are aware of, and take all appropriate actions to protect themselves from all situations that pose a threat to their safety and health.
- Suspend any activity that poses a threat to personal safety and health that cannot be avoided or mitigated through the use of protective clothing or the adoption of a safe operating procedure.
- Determine where first aid stations will be located, arrange for qualified staffing at these stations, see that adequate first aid supplies are available, and ensure that the locations of these stations are clearly posted.
- Maintain regular communications with emergency medical teams and first aid stations.
- Issue Safety and Health Bulletins, as appropriate.

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- Maintain a record of all job-related injuries, including their cause, nature, and any corrective actions taken.
- Serve as the principal point of contact for OSHA representatives assigned to monitor response operations.
- Ensure that decontamination stations are established and that all personnel are decontaminated before leaving their work stations during breaks and at the end of each shift (see Appendix P, Decontamination Procedures).

O.5 COORDINATION WITH GOVERNMENT AGENCIES

During the conduct of response operations, the Incident Commander will meet, on a regular basis, with the FOSC and the State Incident Commander. Safety and health considerations will be among the issues addressed at these meetings, particularly with regard to matters relating to incident-specific application of relevant safety and health laws, rules and regulations, policies, practice, and procedures.

The Safety Officer will coordinate Venoco's activities with federal and state safety and health personnel. Additionally, the Safety Officer will prepare Site Specific Safety and Health Plan(s) that will be kept onsite and will address the safety and health hazards of each phase of site operations and include requirements and procedures for worker protection. All site personnel will be required to read the plan and acknowledge that they are aware of and fully understand its contents in accordance with 29 CFR §1910.120. These forms (Site Safety Plan, Site Characterization, Safety Tailgate Meeting) are found in Appendix C, Forms.

O.6 PERSONAL PROTECTION EQUIPMENT REQUIREMENTS

O.6.1 Introduction

Personal protection equipment (PPE) appropriate to the exposure hazards of the emergency response incident must be worn at all times while potential or actual exposure exists. Prior to exposure, positive identification of the contaminants must be made. Until a positive identification is made, no entry in less than "Level B" protective devices shall be allowed.

The Safety Officer will prepare a Site Safety Plan based upon site assessment, monitoring results, and know of job tasks and processes.

O.6.2 PPE Level Definitions

The federal OSHA has defined four levels of PPE from Level A, providing the highest level of protection, to Level D, which is the minimal protection used for nuisance contamination. Federal OSHA requirements (29 CFR 1910.120(q)(10)) should be reviewed during HAZWOPER training to ensure familiarity with the proper PPE for potential hazardous material releases. Table O-1 provides the protective clothing required for the four levels of PPE.

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Table O-1. Personal Protection Equipment Requirements.

Clothing/Equipment	PPE Level[1]			
	A	B	C	D
Totally encapsulating chemical protective suit (TECPS)	•			
Chemical resistant clothing (i.e., overalls and long-sleeved jacket, hooded 1- or 2-piece chemical splash suit, or disposable chemical resistant clothing		•	•	
Coveralls				•
Pressure demand (positive pressure), full face SCBA or airline unit with escape SCBA	•	•		
Half face piece, air purifying respirator with appropriate canister or cartridges			•	
Inner chemical resistant gloves	•			
Inner and outer chemical resistant gloves		•	•	
Chemical resistant safety shoes/boots	•	•	•	
Safety shoes				•
Full-time two-way communications	•	•		
Safety glasses or chemical splash goggles				•
Hardhat		•	•	•

[1] Level A Use: When dealing with a release of highly concentrated H_2S material or extremely corrosive material.

Level B Use: When handling material requiring the greatest respiratory protection and skin protection, but not to TECPS standards.

Level C Use When handling material requiring chemical resistant clothing such as rubber boots, rain gear, safety glasses, and air purifying respirators.

Level D Use: Recommended for personnel responding to crude oil cleanup. Level D is appropriate only if there are no known or suspected air contaminants and no potential skin contact with hazardous materials.

When donning PPE, observe the following:

- No employee/contractor should conduct any operations in areas not directly visible to other personnel.
- Operations requiring entry to such areas will utilize the “buddy system” and the Safety Officer should be notified.
- Establish and maintain communications with your supervisor for the duration of such activities.
- Continue to monitor conditions, anticipate changes in:
  - Weather that may affect safety.

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  - Wind changes that could affect safe areas.
  - Temperature that may affect work conditions and worker safety. Be alert for signs of heat stress, heat rash, heat cramps, heat exhaustion, and heat stroke.
- During break or rest periods, remove PPE to facilitate cooling, as needed.
- All injuries, no matter how minor, must be reported to the Safety Officer as soon as possible, but no later than at the end of the shift.
- All requests for emergency or life-saving medical treatment are to be made through the 9-1-1 system.

PPE for Venoco employees is available at its facilities and aboard the various co-op vessels. For large-scale cleanup operations, PPE is available from various contractors. The Safety Officer will verify that contractors provide sufficient PPE for their workforce.

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P.1 INTRODUCTION (ACP 2008: Sec 3260)

During responses to spill incidents, decontamination of personnel, equipment, and the release site is essential for individual safety and to minimize movement of hazardous material into unaffected areas. To minimize the transfer of hazardous substances from the site as a result of response activities, contamination control and decontamination procedures are needed.

P.2 CONTAMINATION CONTROL

The Safety Officer will establish control at a contaminated response site to reduce the possibility of exposure to any contaminants including their transport by personnel and/or equipment from the site. Procedures include:

- Set up security and physical barriers (e.g., hazard tape, rope, road cones, or a combination of restraints) to exclude unnecessary personnel and visitors from the contaminated area.
- Minimize the number of personnel and equipment onsite consistent with effective operations.
- Establish work zones within the site to reduce the migration of hazardous substances.
- Establish control points to regulate access to work zones.

P.2.1 Work Zones and Access Control Points

Work zones will be used to prevent or reduce the migration of contamination from a site where operations occur. Access control points will be used to limit the movement of personnel and equipment between work zones and onto the site itself.

The Safety Officer will establish three contiguous work zones surrounding each separate contaminated area on the site where response operations will occur. These zones are:

- Zone 1: Exclusion Zone.
- Zone 2: Contamination Reduction Zone.
- Zone 3: Support Zone.

An example of a work zone plan is shown in Figure P-1 on the following page.

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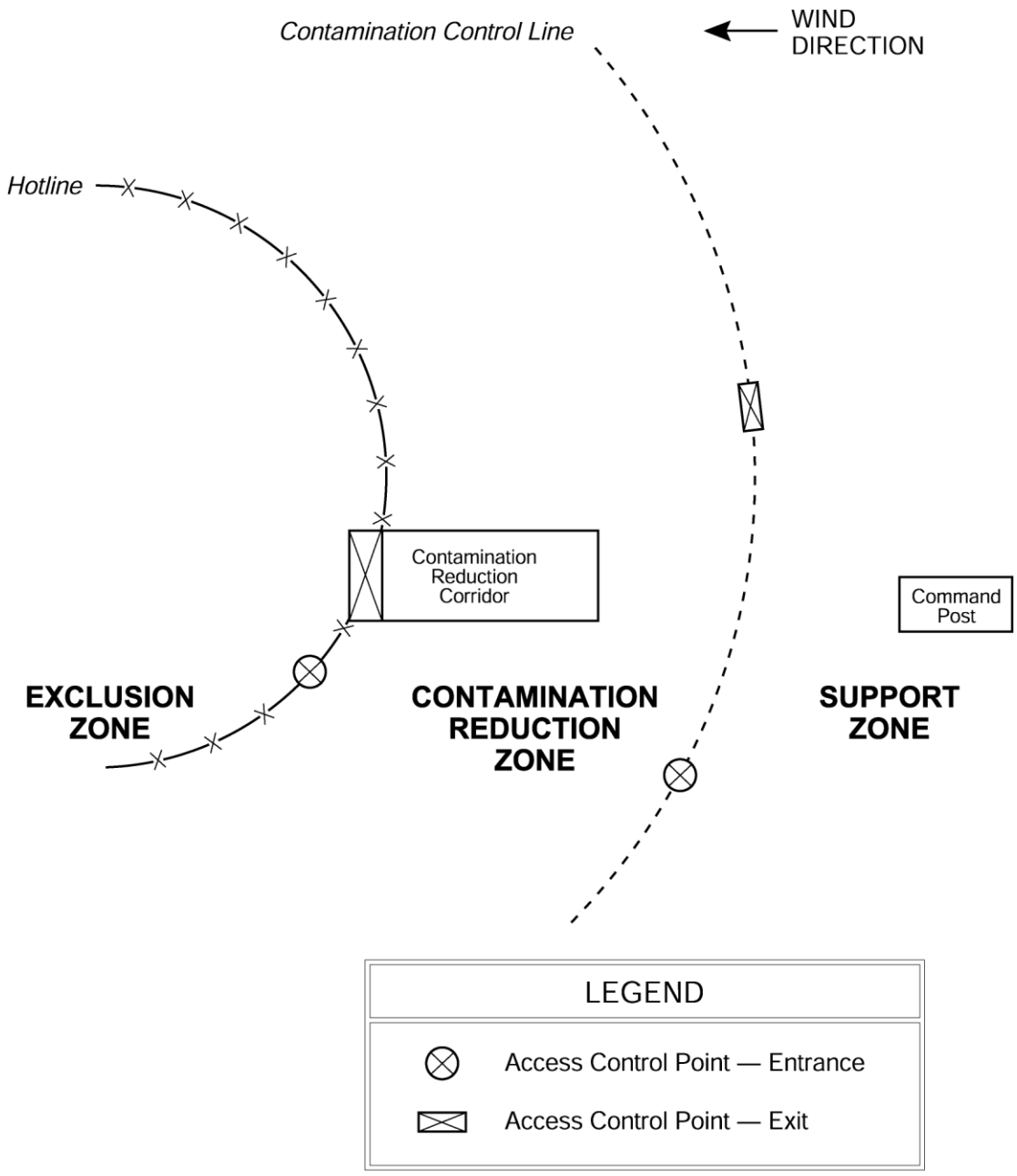
Figure P-1. Site Work Zones Layout.



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Movement of personnel and equipment into and out of the contaminated areas and between zones will be limited to access control points located upwind of the contaminated area. Refer to Table P-1 for work zone descriptions.

Table P-1. Work Zones and Access Control Points.

Zone	Type	Zone Location	Contamination Level	PPE	Access Control Point
1	Exclusion	Innermost or Hot Zone	Known or expected to occur	Specified level of protection	Must establish or located upwind of the contaminated area(s) along the outer boundary (i.e., the Hot Line)
2	Contamination Reduction or Warm Zone	Between the Exclusion and Support Zones	Clean Area: designed to provide a transition between Zones 1 and 3	Prescribed level of protection. Decontami-nation of PPE will occur at a series of stations	Entry and exit between Zones 2 and 3 will be restricted to access control points upwind of Zone 1 on the Contami-nation Control Line
3	Support or Cold Zone	Outermost: may include Field Command Post, transport vehicles, equipment, supplies, etc.	Clean Area	Normal work clothes, no contaminated clothing, equipment or supplies permitted	None: traffic will be restricted to authorized response personnel

The physical size of the zones will be determined by the:

- Nature of the released material.
- Climatic conditions of the area.
- Topography of the area.

The Hot Line (see Figure P-1) will be established initially:

- Visually surveying the immediate area of the release.
- Determining the location(s) of the involved hazardous substance(s).
- Studying monitoring data obtained during the initial site survey.

The boundary may be modified and adjusted over time, as more information becomes available.

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P.3 DECONTAMINATION

P.3.1 Overview

The Decontamination Unit Leader with assistance from the Safety Officer is responsible for routine decontamination procedures and emergency contamination procedures. Routine decon is the primary focus of this section; however, emergency decon procedures should be established and carried out if it is safe to do so.

In an emergency, the primary concern is to prevent loss of life or severe injury to site personnel. If immediate medical treatment is required to save a life, decon should be delayed until the victim is stabilized. Consider the following:

- If decon can be performed without interfering with essential lifesaving techniques or first aid, decon must be performed immediately.
- If an emergency due to a heat-related illness develops, protective clothing should be removed from the victim as soon as possible.
- During an emergency, provisions must also be made for protecting medical personnel and disposing of contaminated clothing and equipment.

P.3.2 Decontamination Area Site Setup

The Decontamination Unit Leader will select a level site at the edge of the Exclusion/Hot Zone where an entrance to the Exclusion Zone and an exit through the Contamination Reduction Zone/Warm Zone and into the Support/Cold Zone may be located (see Figure P-1). The site selected should be away from the travel of equipment and supplies and not of value or needed for any future activities during the response. Steps for the design of the area include:

1. Construct a low berm around the decon site. Lay a sheet of visqueen over the entire surface area and over the berm. Weight sheet with soil around the outside edge of the berm. An example of a decontamination area is shown in Figure P-2 on page P-6.
2. Arrange all equipment in a fashion commensurate with the level of protection (e.g., Level D through A). Figure P-3 on page P-7 represents decontamination levels associated with Level A protection.
3. Lay down sorbent pads at decon entrance and near all tubs, buckets, and paths of travel where liquids may be tracked or deposited.
4. Set marker stakes and tape off decon area consistent with marking used for Exclusion/Hot Zone.
5. Post entrance and exit signs.

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6. Label all waste containers appropriately. Have containers for contaminated debris and uncontaminated wrappings or trash (refer to Appendix N, Waste Management and Disposal Plan).

7. Set up boot washing tubs or pools, tub #1 containing Simple Green or other biodegradable soap and tub #2 containing clear water. An optional tub may also be used between tubs #1 and #2 with a milder soap concentration. Provide scrub brushes in each tub.

8. Set up a glove washing area on a table, bucket #1 containing soap and bucket #2 containing clear water. An optional bucket may also be used between, buckets #1 and #2 with a milder soap concentration. Provide rags or towels on the table.

9. If SCBAs are used in the Exclusion/Hot Zone, set up one bucket with mild bleach solution for mask washing, one with soap for mask washing, one for rinse, and have wipes or towel available.

10. Organize extra equipment and store neatly.

11. Take inventory of all PPE and decon equipment upon mobilization of decon. Log all PPE and equipment as it is resupplied or used on the response. Take inventory of PPE and decon equipment upon demobilization. Create a report of PPE used and status of equipment inventory at the end of the response.

12. **KEEP DECON AREA NEAT AND CLEAN AT ALL TIMES!**

The number of stations will depend on the amount and type of PPE. The maximum number of decontamination stations will be required for Level A protections. Decontamination procedures for lower levels of protection will consist of fewer decontamination stages for the amount of equipment worn or involve the elimination of wash and rinse stations when disposing of clothing.

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Figure P-2. Decontamination Area Layout.

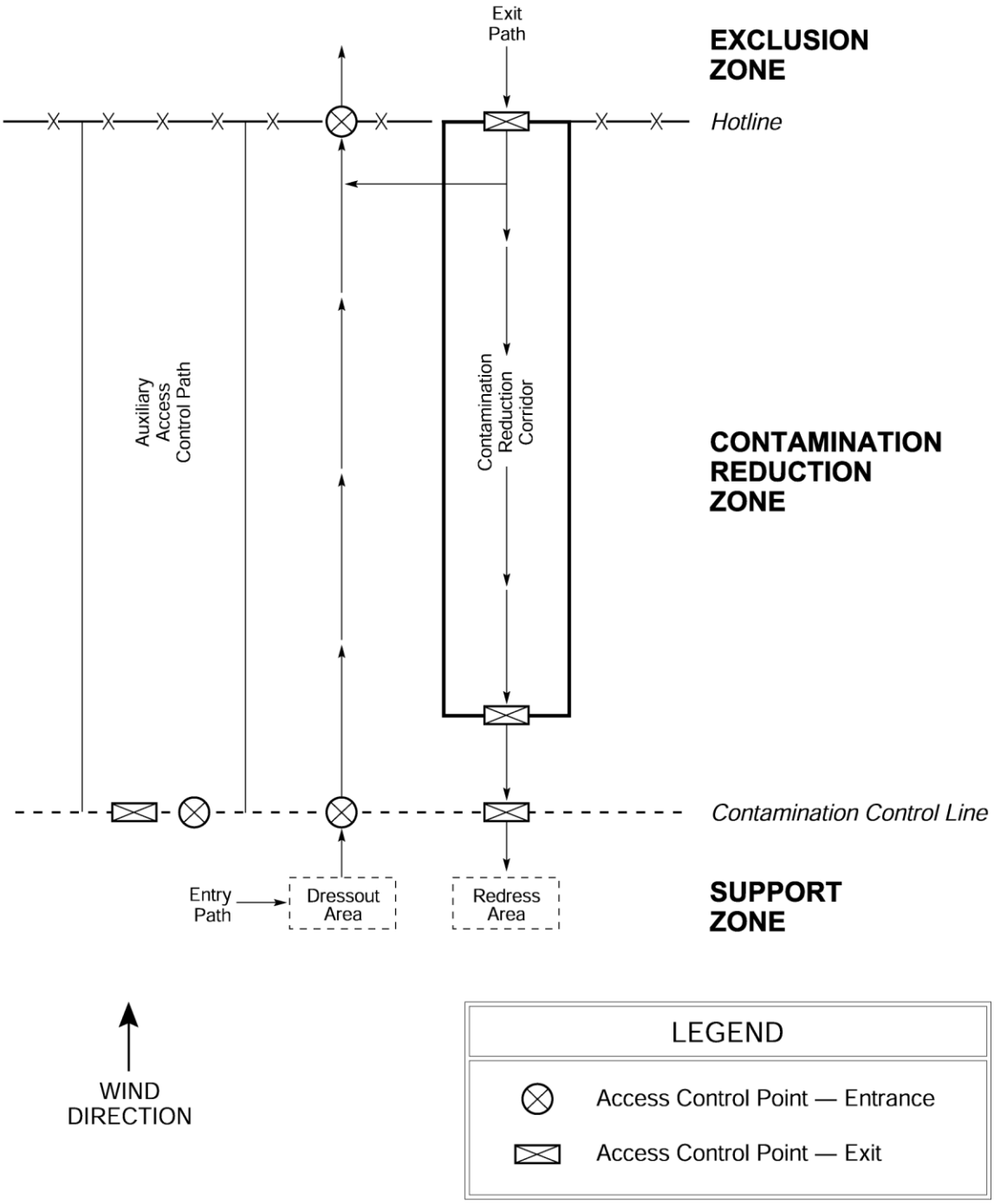

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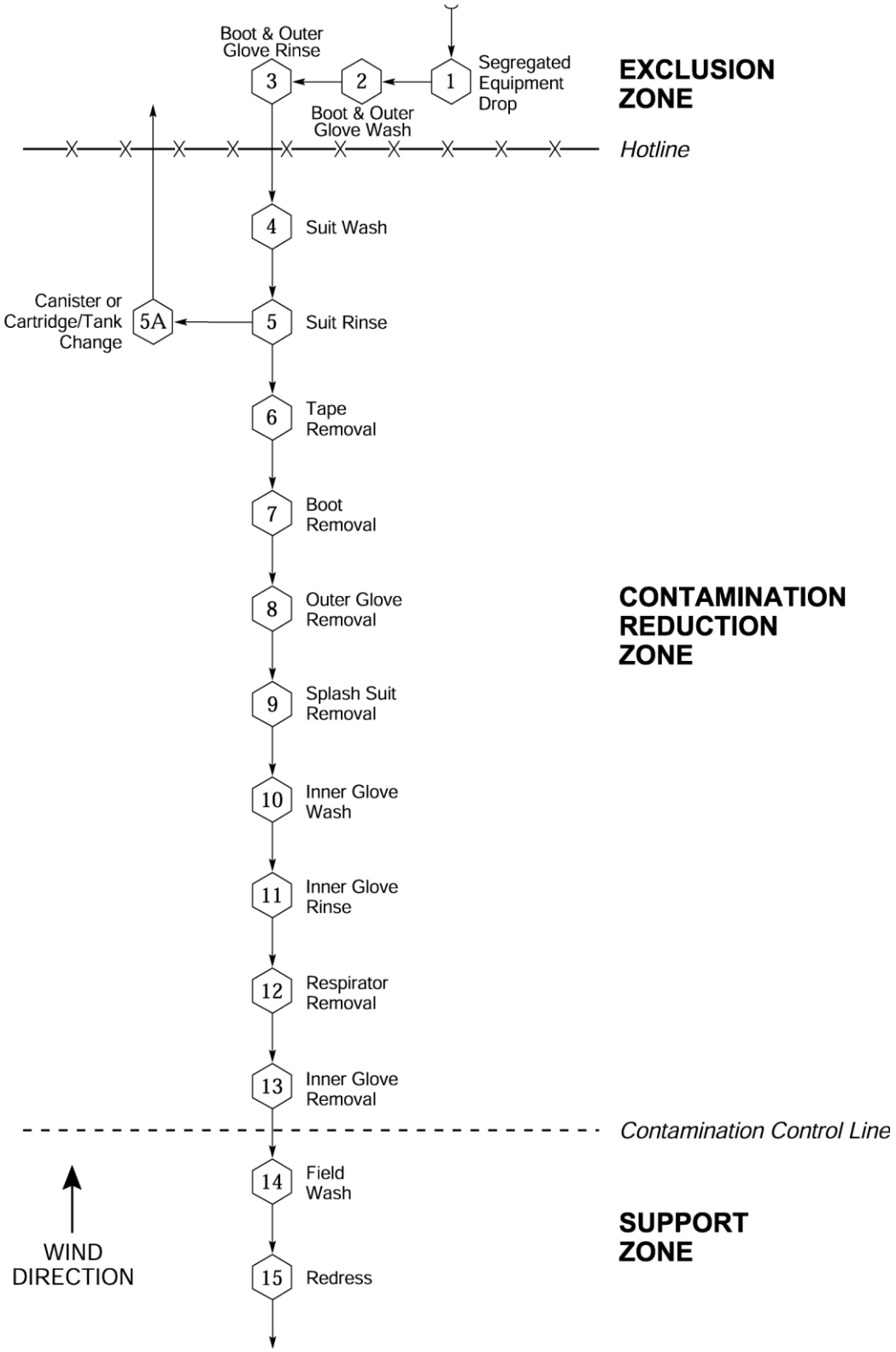
Figure P-3. Contamination Reduction Zone Layout.



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P.3.3 Standard Decontamination Procedures for PPE Up To and Including Level B

Enter Decontamination Area from Exclusion/Hot Zone entrance and proceed through the following steps and stations:

1. Clean boots in Tub #1 using scrub brush.
2. Rinse boots in Tub #2 using scrub brush.
3. Clean gloves in Bucket #1.
4. Rinse gloves in Bucket #2.
5. Have Decon Technician (in PPE) remove tape from gloves, boots, and Tyvek suits.
6. Have Decon Technician remove outer gloves (leave inner gloves on).
7. Have Decon Technician remove SCBA (if worn and when decon area is verified to be below PEL exposure limits).
8. Have Decon Technician unzip Tyvek suit and assist removal of boots first, then Tyvek suit. Step into own shoes when clear of boots and suit.
9. If applicable, wash SCBA mask in Bucket #3 and rinse in Bucket #4. Dry mask.
10. Remove inner gloves, being careful not to touch outer surfaces.
11. Have Decon Technician deposit all throwaway PPE items in appropriate DOT drum.
12. Have Decon Technician stow all reusable PPE items neatly in temporary storage and made ready for reuse.
13. Depart through designated exit to Support/Cold Zone.

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Q.1 INTRODUCTION

The following appendix includes information required by Title 14 CCR 817.02 that has not been addressed in Sections One and Two and Appendices A through P of this Plan. A cross-reference index (Table CR-2) is included at the front of the plan that identifies the location of information required by the above-mentioned regulations. OSPR regulations apply to the following Venoco Inc. South Ellwood Field facilities: Platform Holly, Beachfront Lease, Ellwood Pier, and Ellwood Onshore Facility; and to the Ellwood Pipeline Inc. – Line 96 Pipeline. Beachfront Lease is currently shut in. Future operations for the lease include modifications to the existing facilities. This plan will be modified when startup of Beachfront Lease is approved. The Ellwood Marine Terminal has been taken out of service, loading lines removed, offshore pipeline evacuated of oil and onshore storage tanks emptied.

Q.2 CERTIFICATE OF FINANCIAL RESPONSIBILITY (COFR)

The certificates of financial responsibility are provided in the front of this plan.

Q.3 RISK AND HAZARD ANALYSIS

Q.3.1 Significant Spill History

Section 817.02(c)(1)(A) of the California Code of Regulations, Title 14, Division 1, Subdivision 4, Chapter 2 defines a significant spill as one that had a deleterious impact on the local environment, or caused the physical layout of the facility or the facility's operations procedures to be modified.

Facility	Spill History
Ellwood Onshore Facility	No reportable spill reaching marine waters in over 10 years.
Ellwood Pier	No reportable spill reaching marine waters in over 10 years.
Platform Holly	1 reportable spill reaching marine waters occurred June 2009.
Beachfront Lease	No reportable spill reaching marine waters in over 10 years.
Ellwood Pipeline Inc. – Line 96 Pipeline	No reportable spill reaching marine waters in over 10 years.

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Q.3.2 Methodology

A number of risk analyses have been conducted on the South Ellwood Field facilities. These are listed below.

- Quantitative Risk Assessment (QRA) for Venoco's Platform Holly and Ellwood Facility, June 2000.
- Process Hazards Analysis (PHA) for Ellwood Facilities, February 2000.
- Revalidation of the Hazard and Operability Study of the Ellwood Onshore Facility, May 2014.
- Revalidation of the Hazard and Operability Study of the Holly Offshore Platform, June 2004.
- Risk Assessment of the Ellwood Liquid Pipeline Operations, August 2004.

The 2000 PHA and subsequent revalidations of the Ellwood and Platform Holly HAZOPs was conducted in accordance with OSHA PSM (29 CFR 1910.119). The analysis utilized both the "Checklist" and "Hazard Operability (Hazop)" methodologies in accordance with the American Institute of Chemical Engineers "Guidelines for Hazard Evaluation Procedures," Second Edition. An experienced team from Venoco, the consultants hired to assist in the conduct of the analysis (Arthur D. Little and ioMosaic), and State Lands took part in the analysis.

The equipment was divided into nine categories: pipelines, loading hose, pumps, pressure vessels, tanks/containers, pig receivers, loading rack, crane, and containment/drain system; and the nodes, as categorized for analysis purposes, are listed in Table Q 2.

A unique Hazard Analysis Checklist was developed for each category. The checklist form (worksheet) provided for three responses to each question: yes, no, or not applicable and contained boxes for each question to record the following information: potential hazard, safeguards in place to prevent the potential hazard from occurring, any remaining hazards after considering the safeguards, recommendations to mitigate any remaining hazards, and remarks. Information available and utilized during the conduct of the risk and hazard analysis included P&IDs and plot plans.

All personnel participating in the risk and hazard analysis visited the facility during the conduct of the risk and hazard analysis. A summary of the experience of the participants follows.

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Q.3.3 Analysis

Q.3.3.1 Hazards Identified

Potential impacts were classified as defined below.

Risk Category	Impact and Required Action
1	Severe injury, significant property damage, offsite impacts imminent, mitigation required immediately
2	Severe injury, engineering controls required, mitigate within six months
3	Operating problem, acceptable with administrative controls in place
4	No mitigation required

The 2000 PHA identified a number of potential impacts, with 12 being Risk Category 1. The revalidation conducted in 2004 identified a few additional potential impacts but verified that there were no Risk Category 1 impacts remaining.

Q.3.3.2 Mitigation Plan

The recommendations listed in the PHA and Revalidation formed the basis for the plan for mitigating the potential impacts identified.

Q.3.3.3 Remaining Risk

Ellwood Pier

The potential for a spill cannot be completely eliminated. The most likely remaining risk is from the loss of a container being loaded onto the crew boat. The largest reasonable worst case spill is 11.9 bbl of diesel.

Platform Holly

The potential for a release cannot be completely eliminated, even with the implementation of the recommended mitigation measures. The platform is equipped with adequate containment to prevent leaks from reaching the ocean. It is possible, although unlikely, that a process upset or leak of the subsea pipeline to shore could occur.

Ellwood Pipeline Inc. – Line 96 Pipeline

Although it is felt that the potential for a leak or rupture has been mitigated to the maximum extent feasible, a small potential for a release exists. The greatest remaining risk to the Line 96 Pipeline is from third party damage. Venoco belongs to Underground Service Alert and patrols the

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pipeline route on a frequent basis; however, it is still possible that a third party could damage the pipeline, resulting in a leak.

Q.3.4 Documentation

The documentation and materials (P&IDs, diagrams, etc.) used in the risk and hazard analysis are maintained at Venoco's offices. The point of contact and mailing address are:

Walt McCarty
Venoco, Inc.
7979 Hollister Ave.
Goleta, CA 93117

(805) 961-2312

Q.4 OFFSITE CONSEQUENCE ANALYSIS

Q.4.1 Trajectory Analysis

A 1000-bbl/day spill trajectory analysis was conducted for Platform Holly and has been assumed to be representative of this worst case spill. The following is a brief discussion of this trajectory analysis.

An envelope of possible spill trajectories was calculated for the near shore facility located offshore of Coal Oil Point. The trajectory analysis considered oil transport by the wind and tidal currents, and spreading of the oil by physical processes such as gravity, surface tension, and tidal dispersion. Immediately after release of the oil, spreading of the spill would occur primarily from physical spreading processes. Within the first 12 hours, the 500 bbls would be expected to occupy a patch approximately 1 nautical mile in diameter. By three days, the spill patch would be approximately 5 nautical miles in diameter.

Transport of the spill away from the source would be due primarily to longshore coastal currents and wind-induced surface drift. The direction and strength of this transport varies seasonally and with the direction, strength, and persistence of local winds. Westward transport, which would be expected when the westward flowing coastal current is strongest (spring and summer) and/or when the winds are from the east and southeast, could move the spill within 5 miles of Point Conception after one day and to Point Arguello after two days. At this point, the spill would either move northward, reaching Purisima Point after three days, or move southward away from the coastline. During periods when the westward coastal current is weak (fall and winter) and when westerly winds are present, the spill would move eastward along the coast, reaching Rincon after one day and Port Hueneme after three days. Santa Ana wind conditions combined with weak coastal currents would cause spill transport to the south, across the Santa Barbara Channel.

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Within three days, the spill could move across the channel to the islands of San Miguel, Santa Rosa, Santa Cruz, and Anacapa.

These spill trajectory envelopes represent the outer perimeter of shoreline areas that could receive oil in the event of any spill. The envelopes are based on regional extremes of climate, tide, current, and wind and assume pessimistic dispersion and other adverse weather conditions. These trajectory envelopes do not represent the trajectory of any one spill.

Q.5 GENERAL TOXICITY, PERSISTENCE, AND SEASONAL EFFECTS OF CRUDE OIL

Q.5.1 Toxicity

In general, oil can be toxic to biological resources. Oil contamination of intertidal areas, waterfowl, and fur-bearing mammals can be severe. The following summarizes the potential toxicity from the oil to biological resources:

Wildlife

Wildlife is susceptible to significant injury and mortality from contact with oil spills. In general, the degree of sensitivity to oil spills is based on habitat location and behavioral characteristics. For example, most waterfowl and shorebirds, particularly diving birds are very sensitive to oil spills due to their extensive use of the water, whereas terrestrial birds may nest near the water but have a low sensitivity to oil spills if they do not frequent shoreline areas. Similarly, animals that frequent coastal areas or stream beds may be impacted by oil spills if they feed on vegetation or dead animals along the shoreline or upland areas that could become oiled.

Wildlife impacts may result from the physical effects of the oil on their fur or feathers or through ingestion during preening or scavenging. Selected marine mammals (e.g. sea otters and fur seals) and birds (primarily waterfowl) rely on their fur or feathers for insulation and buoyancy, which can be adversely affected if they become oiled. Significantly oiled sea otters, fur seals, or birds can perish from hypothermia and exhaustion, or may become sick from ingestion of the oil while preening. The effects of ingestion vary depending on the toxicity of the oil. In general, the lighter the crude oil or petroleum product, the more toxic it is to wildlife.

Finfish and Shellfish

The sensitivity of various fish species to oil spills typically depends on their growth stage (juveniles are generally much more sensitive than adults), their feeding or migration habits, and the type of oil. Species that frequent shallow or near-surface areas are often exposed to higher concentrations of dissolved hydrocarbons than those that reside primarily in deeper waters. Lighter crude oils and refined petroleum products have a greater impact on fish than heavier oils due to their generally greater solubility and higher concentrations of toxic compounds.

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Kelp and Eelgrass Beds

Kelp and eelgrass beds are valuable habitats for numerous finfish and shellfish. Eelgrass is much less abundant than kelp but is used as spawning grounds for some fish and as an important sanctuary for a number of planktonic organisms. Eelgrass is very susceptible to the toxic and physical effects of oil spills. Kelp beds serve as habitats and sanctuaries for a number of finfish, shellfish, and other marine organisms but are less susceptible to the effects of oil spills. Kelp fronds and blades are covered with mucous that inhibits the oil from sticking; although a kelp forest canopy can trap substantial quantities of oil, resulting in the mortality of many its inhabitants. The effect of the oil is generally short-term due to kelp's rapid growth rate.

Q.5.2 Persistence

In general, the longer the oil is expected to persist on a shoreline, the higher the priority for protection. Long-term oil persistence can present chronic toxicity effects, as well as affecting the natural sediment erosional and depositional processes. The potential persistence or residence time of stranded oil on a shoreline is primarily dependent on the:

- Degree of impact.
- Type of shoreline sediments.
- Level of exposure to the elements.

In general, higher degrees of impact, coarser, well-sorted sediments, and lower levels of exposure to wind, waves, currents, and tidal flushing will increase the residence time of the oil on the shoreline. Coarser-grained sediments usually permit the oil to penetrate deeper into the shoreline but can also allow for greater tidal flushing and natural degradation. Finer-grained sediments typically inhibit penetration, but if oil does become incorporated into the sediments, residence time will increase.

Lower level of exposure, such as in protected inlets of bays, will increase the residence time due to the decreased natural abrasion caused by sediment movements and flushing action by wind, waves, and tides. Protected areas may also be shaded and calm, which could inhibit evaporation and photo-oxidation. A general guideline on the potential persistence of oil on various shoreline types is shown in Table I-2.

Q.5.3 Seasonal Effects

The primary seasonal effect on biological resources is whether the specific resource is present at the time of the spill. This is especially true of birds and mammals. Seasonal distribution of wildlife along the coast is provided for the ESI maps. Plants may be affected differently depending on the timing of the spill relative to the plant's growing season. In general, oiling during the dormant winter season has the lowest impact; whereas oiling of vegetation during the summer growing season has longer effects.

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Q.6 ON-WATER CONTAINMENT AND RECOVERY

Q.6.1 Reasonable Worst Case Discharge

Ellwood Pipeline Inc. – Line 96 Pipeline

Basis for the reasonable worst case discharge assumes the rupturing of the pipeline between Dos Pueblos Canyon and Las Llagas Canyon during transfer of oil. The proposed pipeline flow rate is 271 bph. Pipeline mainline valves will fully close in 90 seconds and inline check valve will prevent backflow. An additional 3.13 BBLS will flow in the 90 seconds it takes to fully close the valves.

Given:

- $Tmax_{discover} + Tmax_{ESD}$ = 1.5 min = 0.025 hr
- Q max = 271 bph
- Line Segment = 6-in line for 4,551 ft at 0.0357 bbl/ft.

Calculation:

Worst-Case Discharge = $(Tmax_{discover} + Tmax_{ESD})$ (Qmax) + Vol_{pipe}

(0.025 hr) (271 bph) + (4,551 ft) (0.0357 bbl/ft) = ***169 bbl***

Worst Case Discharge: 169 bbl. (Group 3).

Ellwood Onshore Facility

Basis for the reasonable worst case discharge assumes the rupturing of the oil shipping tank and failure of the containment area resulting in the loss of the entire contents of the 3,000-bbl tank.

Given: shipping tank is 3,000 bbl (Group 3).

Worst Case Discharge: 3,000 bbl.

Ellwood Pier

The worst case discharge from Ellwood Pier assumes the rupture of the largest container loaded onto the crewboat and 100% loss of its contents.

Given: largest container loaded is 500 gallons of diesel.

Worst Case Discharge: 11.9 bbl (Group 1).

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Platform Holly

Calculation of the reasonable worst-case discharge for Platform Holly takes into consideration:

- total tank storage and flow line capacity; plus
- that portion of the total flowline capacity which could be lost during a spill, taking into account the availability and location of the emergency shut-off controls and the effect of hydrostatic pressure. Basis for the reasonable worst-case discharge includes the rupturing of the 16,010-foot pipeline from Platform Holly to the Ellwood Onshore Facility; plus
- the amount of additional spillage that could reasonably be expected to enter marine waters during emergency shut-off, transfer or pumping operations if a hose or pipeline ruptures or becomes disconnected, or some other incident occurs which could cause or increase the size of an oil spill. The calculation may take into consideration other safety devices, emergency reaction times and maximum transfer rates; plus
- the daily production volume for 30 days from an uncontrolled blowout of the highest capacity well associated with the marine facility. In determining the daily discharge rate, the reservoir characteristics, casing/production tubing sizes, and historical production and reservoir pressure data shall be taken into consideration..
- Additionally, during active well drilling the daily volume for 30 days from an uncontrolled blowout of a well is considered for the marine facility. In determining the daily discharge rate, the reservoir characteristics, casing/production tubing sizes, and historical production and reservoir pressure data shall be taken into consideration.

Tank/vessel storage – The total capacity of all tanks and vessels on the platform is 716 bbl (see Table Q-1).

Table Q-1. Platform Holly Tank and Vessel Volumes.

Vessel	Orientation		Dimensions		Flammable Liquid			
			Diameter	Length	Working Height	Max Volume	Working Volume	
		Contents	Ft	Ft	Ft	Ft^3	Ft^3	BBL
V-103	Horizontal	O.O.S	4.0	20.0	2.0	251.3	125.7	22.4
V-104	Horizontal	Emulsion	4.0	20.0	2.0	251.3	125.7	22.4
V-105	Horizontal	Emulsion	4.0	20.0	2.0	251.3	125.7	22.4
V-106	Horizontal	Emulsion	4.0	15.0	2.0	188.5	94.2	16.8
V-107	Horizontal	Emulsion	6.5	20.0	3.3	663.7	331.8	59.1
V-108	Horizontal	Emulsion	6.5	20.0	3.3	663.7	331.8	59.1
V-109	Horizontal	Emulsion	6.0	20.0	3.0	565.5	282.7	50.4
V-110	Horizontal	Emulsion	6.0	20.0	3.0	565.5	282.7	50.4

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V-100	Vertical	Condensate	3.0	12.0	1.0	84.8	7.1	1.3
V-101	Vertical	Condensate	3.0	12.0	1.0	84.8	7.1	1.3
V-123	Vertical	Condensate	4.0	2.0	1.0	25.1	12.6	2.2
V-113	Vertical	Condensate	4.0	9.5	1.0	119.4	12.6	2.2
V-114	Vertical	Condensate	3.5	8.3	1.0	79.4	9.6	1.7
V-117	Vertical	Condensate	3.0	11.0	1.0	77.8	7.1	1.3
V-118	Vertical	Condensate	2.0	11.0	1.0	34.6	3.1	0.6
V-119	Vertical	Condensate	2.0	11.0	1.0	34.6	3.1	0.6
V-120	Vertical	Condensate	2.0	11.0	1.0	34.6	3.1	0.6
V-121	Vertical	Condensate	2.0	8.0	1.0	25.1	3.1	0.6
V-111A	Vertical	Condensate	1.5	6.0	1.0	10.6	1.8	0.3
V-111B	Vertical	Condensate	1.5	6.0	1.0	10.6	1.8	0.3
					TOTAL			**716 bbl**

Flowline capacity – The total flowline capacity has been estimated to be equal to 10% of the 716 bbl storage capacity which equals 72 bbls.

Pipeline worst-case discharge considering shutdown time, pumping losses, and draindown – The worst-case discharge for the pipeline to shore was calculated using the MMS Pipeline Oil Spill Volume Estimator. The default values for pipeline roughness (0.00015 ft.), and heat transfer coefficient (10 BTU/ft^3/hr/°F) were used in the modeling. The temperature of the seawater was assumed to be 50°F. The diameter of the release point was assumed to be equal to the diameter of the pipeline. In all cases it was assumed that the release would be detected and the pumps shutdown within two minutes. This allots 1 minute 15 seconds for detection and 45 seconds for closure.

The pipeline was separated into the following three segments for modeling purposes: Platform Holly riser bottom, the mid-point at sea bottom, and at near-shore location of the pipeline. All pipeline segments have an inside diameter (ID) of 6 in. Each segment is described below.

- Platform Holly Riser has a total length of 230 ft, with 23 ft being above sea level.
- Platform Holly Riser to the shoreline, a total length of 16,010 ft.
- Shoreline to the pig catcher at the Ellwood Onshore Facility, at total length of 940 ft. The pig catcher is at an elevation of 23 ft.

The fluid properties used in the modeling are as follows:

- Flow rate – 7500 bbl/day
- Gas density – 0.07 lb/scf (default)
- Oil density – 7.67 lb/gal
- Gas-to-oil ratio (GOR) – 0

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- Water cut – 25%
- MAOP – 650 psi
- Temp of oil when leaving Platform Holly - 130°F

The model calculated the worst case pipeline release to be approximately 23 bbls.

Uncontrolled release from well during production – Platform Holly production includes one or more flowing wells. In the event of a catastrophic well failure of the highest capacity well, this would result a release of approximately 1000 bbls/day for 30 days. This would result in a total release of 30,000 bbls.

Uncontrolled release from well during active drilling – In the event of a catastrophic well failure (blowout) during current active drilling a release from the well bore will result in an approximate release of 1000 bbls/day for thirty (30) days. For the purposes of response planning this will result in a total release of 30,000 bbls.

Hence, the worst-case release from Platform Holly is the sum of the following:

Total vol of platform tanks/vessels	716 bbl
Total vol of flowlines	72 bbl
Worst-case release from pipeline	23 bbl
Worst-case release from production well	30,000 bbl
Worst case release during active drilling	30,811 bbl
Worst Case Discharge (sum)	**30,811 bbl**

Q.6.2 Persistence And Emulsification Factors

Group 3 Crude – Shipping Tank at Ellwood Onshore Facility

Persistence Factor

= (Reasonable Worst Case Spill Volume) x (Persistence for Group 3 Crude)
= (3,000) x (0.5)
= 1,500 bbl

Emulsification Factor

= (Persistence Factor Volume) x (Emulsification Factor for Group 3 Crude)

= (1,500) x (2.0)

= 3,000 bbl

Group 1 Diesel – Ellwood Pier

Persistence Factor

= (Reasonable Worst Case Spill Volume) x (Persistence for Group 1 Diesel)

= (11.9) x (0.2)

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= 2.4 bbl

Emulsification Factor

= (Persistence Factor Volume) x (Emulsification Factor for Group 1 Diesel)
= (2.4) x (1.0)
= 2.4 bbl

Group 3 Crude – Platform Holly

Persistence Factor

= (Reasonable Worst Case Spill Volume) x (Persistence for Group 3 Crude)
= (30,811) x (0.5)
= 15,405 bbl

Emulsification Factor

= (Persistence Factor Volume) x (Emulsification Factor for Group 3 Crude)
= (15,405) x (2.0)
= 30,811 bbl

Q.6.3 On-Water Response Planning Volume

The OSPR Response Planning Volume is 30,811 bbl which is used to determine the amount of response equipment and services that must be under contract for the near-shore/inland environment.

Q.6.4 Response Capability Standard

According to the regulations, the total amount of on-water containment and recovery equipment and services required shall be the lesser amount necessary to address the response planning volume determined in Section 817(d)(2)(c) or the Daily Recovery Rate established in Section 817.02(d)(3)(B). With respect to the Santa Barbara Channel Area risk zone, the daily recovery rate is 3,125 bbl/day which is greater than 10% of Venoco's worst case discharge. Venoco must have 3,081 bbl/day of on-water containment capability mobilized and on-scene within two hours of notification.

Q.6.5 Non-Cascadable Equipment For On-Water Recovery

The amount of equipment that is non-cascadable outside of the Santa Barbara Channel for the Facilities and Pipelines is defined as: the total amount required will be the lesser of the amount necessary to address the Response Planning Volume or 10,000 bbl/day for the Santa Barbara Channel risk zone day (mobilized within 2 hours and on-scene within 12 hours). Clean Seas has nominated specific equipment to meet this requirement for its members and contract associates.

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Q.7 SHORELINE PROTECTION AND CLEAN-UP

Q.7.1 Response Planning Volume

Persistence Factor
= (Reasonable Worst Case Spill Volume) x (Persistence for Group 3 Crude)
= (30,811) x (0.5)
= 15,405 bbl

Emulsification Factor
= (Persistence Factor Volume) x (Emulsification Factor for Group 3 Crude)
= (15,405) x (2.0)
= 30,811 bbl

The OSPR Shoreline Response Planning Volume is 30,811 bbl.

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Q.8 RESPONSE RESOURCES

Table Q-2. Planning Volumes and Resources Required For OSPR Worst Case Discharge.

Factors	Values		
Worst Case Discharge Volume of Oil	30,811 bbl		
Type of Petroleum Handled	Group III		
Facility-Specific Operating Area	Nearshore		
Emulsification Factor (EF)	2.0		
Percent Recovered Floating Oil	50		
Percent Oil Onshore	50		
Percent Lost To Natural Dissipation	30		
Mobilization Factors (MFs)	.15 (Tier 1); .25 (Tier 2); .40 (Tier 3)		
Planning Volumes For On-Water Recovery (OWP)			
(Worst Case Discharge)(Percent Recovered Floating Oil)(Emulsification Factor)			
(30,811)(.50)(2.0) = 30,811 bbl			
Planning Volume For Onshore Recovery			
(Worst Case Discharge)(Percent Oil Onshore)(Emulsification Factor)			
(30,811)(.50)(2.0) = 30,811 bbl			
Necessary Resources For On-Water Recovery			
(OWP)(MF) = (3,000)(MF)	Tier 1 (.15)	Tier 2 (.25)	Tier 3 (.40)
bbl/day	4622	7703	12324
Conclusions: Venoco has contracted with response resources capable of handling a 30,811bbl shoreline cleanup. Venoco has contracted and identified response resources for 4622 bpd for Tier 1; 7703 bpd for Tier 2; and 12324 bpd for Tier 3. Venoco has contracted and identified temporary storage resources for 9244 bpd for Tier 1; 15,406 bpd for Tier 2; and 24,648 bpd for Tier 3.			

Venoco will rely on Clean Seas for on-water containment and recovery of all spills. All of Clean Seas' response equipment, including the derated recovery capability, the amount of boom feet, and the temporary storage capability, is provided in Appendix F. Clean Seas has demonstrated in its ability to meet the OSPR daily recovery capability standards for the Santa Barbara Channel of 19,531 bbl/day within 12 hours, 35,156 bbl/day within 36 hours, and 66,406 bbl/day within 60 hours. Onshore oil spill response and cleanup will be provided by NRC Environmental Services. A copy of NRC's equipment list is provided in Appendix F.

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R.1 RESPONSE ZONE APPENDIX

R.1.1 Introduction

This Response Zone Appendix has been prepared for Venoco's Department of Transportation (DOT)-regulated pipeline **(reference OPS Sequence Number 1279).** A 8.5-mile-long, 6-inch O.D., pipeline (known as Line 96 Pipeline) runs from the Ellwood Onshore Facility to Plains Pipeline, L.P. (PPLP) pipeline connection in Santa Barbara County. The pipeline is owned by Ellwood Pipeline, Inc. (EPI) and is operated by Venoco, Inc.

This appendix has been prepared to comply with the DOT Pipeline Hazardous Materials Safety Administration (PHMSA), 49 CFR Part 194, Response Plans for Onshore Pipelines. The core plan of the PHMSA appendix is the Oil Spill Contingency Plan.

R.1.2 Information Summary

R.1.2.1 Operator Information

Name of Operator:	Venoco, Inc.
Name of Facility:	Line 96 Pipeline
Address of Operator:	6267 Carpinteria Ave. Carpinteria, CA 93013
Phone Numbers:	(805) 745-2100
Facility Location:	Line 96 Pipeline runs from Ellwood Onshore Facility to the Plains Pipeline, L. P. pipeline connection. The pipeline runs in a northerly direction under the US 101 freeway and then turns west and parallels the US 101 freeway until reaching the PPLP pipeline connection.
Facility Business Address:	6267 Carpinteria Ave. Carpinteria, CA 93013

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R.1.2.2 Qualified Individual (Available on a 24-hr Basis)

The Qualified Individual (QI)/Designated Alternate is responsible for the implementation of the Oil Spill Contingency Plan. The QI "on duty" will immediately notify the State Incident Commander of this transfer of responsibilities and authorities. Names and telephone numbers of the Qualified Individual and Designated Alternate for the IIRT and SIRT are provided in Section 1.1 and Section 2.5.

The QI and Designated Alternate are English-speaking representatives, located in the United States, available on a 24-hour basis, and capable of arriving at the facility in a reasonable period of time, but not later than 12 hours. They have knowledge and training or experience to demonstrate competence in:

- Applicable Federal OSHA standards for emergency operations and California OSHA standards for emergency response operations.
- How to implement the Oil Spill Contingency Plan.
- Their responsibilities and authority.
- Requirement of the National Contingency Plan and the Area Contingency Plan, as required by OPA 90.
- Spill prevention and response provisions and procedures of this plan.
- Resources committed or that could potentially be committed during an incident.
- Procedures for obtaining and obligating funds for response activities and persons (external and internal) to contact who would expedite such actions.
- Ability to assess the need for additional resources and to make appropriate calls and contractual arrangements.
- Ability to act as a liaison between the facility and the State Incident Commander and the Federal On-Scene Coordinator.

Responsibilities and authority of the QI/Designated Alternate include:

- Implement the OSCP for the South Ellwood Field, and EPI – Line 96 Pipeline.
- Ensure internal and external notifications are made.
- Assume role of IC of the response team.
- Initiate communication with the FOSC and State IC. Continue to act as liaison with federal, state, and local officials.
- Obligate either directly or through prearranged contracts any funds/monies required to carry out all necessary or directed response activities.
- Develop strategic objectives and direct overall response operations.
- Approve all response plans for the company and the ordering/release of resources.

- Assess the possible hazards to human health and environment due to the release.
- Assess and implement prompt removal actions to contain and remove the substance released.
- Coordinate rescue and response actions.
- Review and approve of press releases.

R.1.2.3 Response Zone Description

The EPI – Line 96 Pipeline is located in one response zone. The pipeline is an 8.5-mile-long, 6-inch-diamter, oil pipeline which runs from the Ellwood Onshore Facility to the Plains Pipeline L.P. (PPLP) connection in Santa Barbara County, California (see Figure R-1). The pipeline has a total capacity of approximately 1,146 barrels of Group 3 crude oil and a maximum pumping rate of 271 barrels per hour.

R.1.2.4 Line Sections

Figure R-2 shows the line sections by mileposts (MP 1 through MP 3) of the Line 96 Pipeline. Detailed pipeline drawings are provided in Appendix A, Figures A-15 and A-23.

R.1.2.5 Basis for Determination of Significant and Substantial Harm

The EPI – Line 96 Pipeline is considered to be capable of causing significant and substantial harm to the environment because of its proximity to navigable waters and adjoining shorelines designated as environmentally sensitive habitat by the ACP. A statement of potential for significant and substantial harm should a worst case discharge occur is provided in Section 1.4.

R.1.2.6 Type of Oil and Worst Case Discharge Volume

Within the response zone, the worst case discharge location is between block valves MLV-2.73 and MLV-5.67. This is based on the elevation profile (See App A, Figure A-16) of the pipeline and location of the block valves and check valves. The Line 96 Pipeline transports only Group 3 crude oil.

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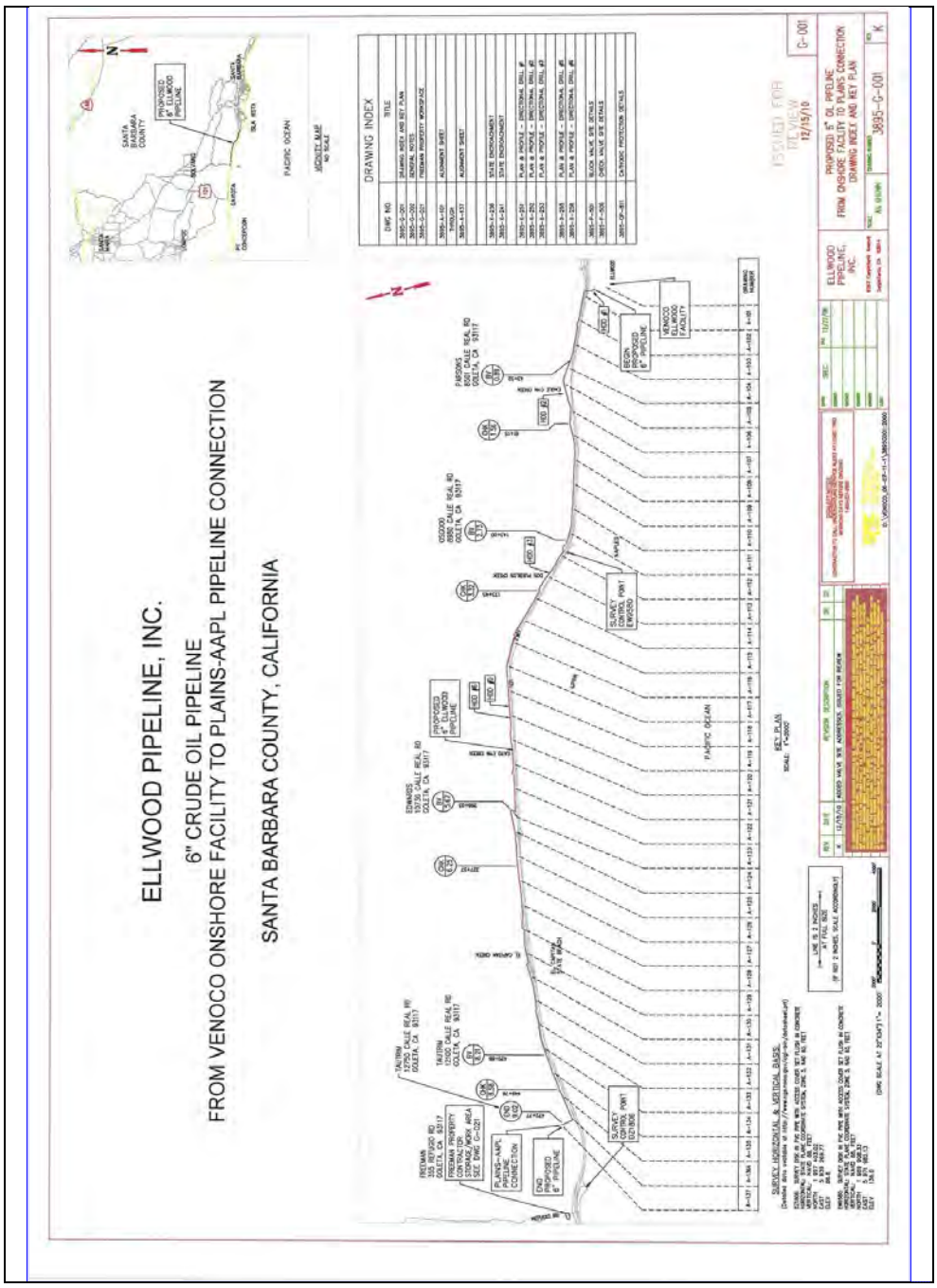

Figure R-1. EPI – Line 96 Pipeline Route

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R.1.2.7 Material Safety Data Sheet (MSDS)

The MSDS for Line 96 pipeline crude oil is provided in Appendix E of the OSCP.

R.1.2.8 Location of Sensitive Resources

Sensitive resources within an approximate 30-mile radius extend along the coast from Point Conception in the north to Mugu Lagoon in the south and to the Channel Islands offshore. Refer to Appendix M for a detailed discussion of sensitive resources.

R.1.2.9 Certification of Response Resources

Venoco, by contract to EPI, has identified personnel and equipment within its own organization and is a member of a private offshore oil spill response organization, Clean Seas (see Appendix G), which will provide resources to respond to a worst case discharge or a substantial threat of such a discharge. Venoco has also contracted with NRC Environmental Services for onshore spill response and cleanup resources. If necessary, Venoco intends to utilize the California Oiled Wildlife Care Network for wildlife rehabilitation.

R.1.3 Notification Procedures

Venoco has in place a set of well-defined internal and external notification procedures that address notification of the Company's response organization, including its response teams, qualified individual, and response contractors, regulatory agencies, and affected property owners (see Section 2.2 of the OSCP for South Ellwood Field). The primary and secondary communication methods by which initial and follow-up notifications can be made are detailed in the Communications Plan (Appendix L of the OSCP for South Ellwood Field).

R.1.4 Spill Detection and Spill Mitigation Procedures

The EPI – Line 96 Pipeline is continuously monitored by a SCADA (Supervisor Control and Data Acquisition) System (refer to Appendix B, Section B.3.2 of the OSCP for South Ellwood Field). A large release would be detected within 15 seconds. Hence, a conservative estimate of the time to detect the release and shut in the line is assumed to be 2 minutes. Pipeline markers are installed on the line and Venoco is a member of Underground Service Alert. Information on initial spill detection and response procedures, response personnel and equipment are provided in the OSCP for South Ellwood Field as follows:

- Section 2: Emergency Action Plan.
- Appendix D: Response Organization Duty Sheets.
- Appendix F: Equipment Lists.
- Appendix L: Communications Plan.
- Appendix N: Waste Management Plan.

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R.1.5 Response Activities

The responsibilities and actions of Venoco's operations personnel prior to arrival of the Qualified Individual will be under the direction of the Facility Supervisor or Operator-In-Charge. Priority will be directed initially towards ensuring the safety of personnel and the public and controlling the source.

As described in Section 2.2, the Facility Supervisor will initiate the notification process. The Venoco SIRT IC (Qualified Individual), with assistance from the Liaison Officer or designee, will conduct the notifications listed in Table 2-2E of this plan. Responsibilities and authorities of the Qualified Individual/Designated Alternate are provided in Section R.1.2.2.

Venoco has identified oil spill response resources (personnel and equipment) sufficient to respond to a worst case discharge. Tier 1 resources can be available within 12 hours and Tier 2 resources can be available within 36 hours. These resources are capable of sustaining a response for the first seven days of the response as required by 49 CFR Part 194, Appendix A, Section 4.0. These resources are described in R.3 and Appendices F and G of the OSCP for South Ellwood Field.

R.1.6 List of Contacts

Persons and agencies to be notified, including the Qualified Individual and response contractors, are listed in Section 2.2 of the OSCP for South Ellwood Field. Additional contacts are provided in Section 2.5.

R.1.7 Training Procedures

Venoco has a training program to train and educate it's Company personnel who are assigned to immediate response, the Initial Incident Response Team and Sustained Incident Response Team (SIRT). Training levels have been developed to provide a tailored curriculum for defined levels of response capabilities, which are designated for each individual depending on his/her specific job description. Training procedures and programs are described in detail in Appendix K of the OSCP for South Ellwood Field.

Venoco's response training program will ensure:

1. All Company personnel know:
    - Their responsibility under this plan.
    - The name and address of, and the procedures for contacting Company personnel on a 24-hour basis.
2. Reporting personnel know:
    - The content of the Information Summary (Appendix R.1.2).
    - The toll-free telephone number of the National Response Center (NRC).

- The notification process.

3. Persons engaged in response activities know:
   - The characteristics and hazards of the discharge.
   - The conditions that are likely to worsen emergencies, including the consequences of facility malfunctions or failures, and the appropriate corrective actions.
   - The steps necessary to control any accidental discharge and to minimize the potential for fire, explosion, toxicity, or environmental damage.
   - The proper fire fighting procedures and use of equipment, fire suits, and breathing apparatus, as appropriate.

The accountability for training and exercising spill resources lies with the Safety Manager.

R.1.8 Drill Procedures

Drill procedures and programs are provided in Appendix K of the OSCP for South Ellwood Field.

R.1.9 Plan Review and Update

The Plan will be reviewed every five years and be resubmitted to PHMSA for approval before five years from the last plan approval date. Modifications to the plan will be performed within 30 days of a change and will be submitted to PHMSA for approval. Changes addressed will include:

- An extension of an existing or construction of a new pipeline.
- Relocation or replacement of a pipeline that affects plan information (including worst case discharge volumes).
- The type of oil transported if its affects the required response resources.
- The name of the oil spill removal organization.
- Emergency response procedures.
- The Qualified Individual/Designated Alternate.
- A change in ownership.
- A change in the NCP or ACP that has significant impact on the equipment appropriate to response activities.
- Any other information relating to circumstances that may affect full implementation of the plan.

Venoco management will conduct a review of the plan after a spill to evaluate the effectiveness of the plan and need for revision. Following an incident, key members of the response organization will evaluate the effectiveness and efficiency of a response. The OSCP will be revised as

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needed. Upon management approval, results of the review will be forwarded to PHMSA within 90 days following completion of response and cleanup activities.

R.2 WORST CASE DISCHARGE ANALYSIS

Calculation of the worst case discharge is:

Given:

- $Tmax_{discover} + Tmax_{ESD}$ = 1.5 min = 0.025 hr
- Q max = 271 bph
- Line Segment = 6-in line for 4,551 ft at 0.0357 bbl/ft.

Calculation:

Worst-Case Discharge = $(Tmax_{discover} + Tmax_{ESD})$ (Qmax) + Vol_{pipe}

(0.025 hr) (271 bph) + (4,551 ft) (0.0357 bbl/ft) = ***169 bbl***

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R.3 PLANNING VOLUMES AND RESPONSE RESOURCES

Table R-1. Planning Volumes & Resources Required For PHMSA Worst Case Discharge.

Factors	Values		
Worst Case Discharge Volume of Oil	169 bbl		
Type of Petroleum Handled	Group III		
Facility-Specific Operating Area	Nearshore		
Emulsification Factor (EF)	2.0		
Percent Recovered Floating Oil	50		
Percent Oil Onshore	50		
Percent Lost To Natural Dissipation	30		
Mobilization Factors (MFs)	.15 (Tier 1); .25 (Tier 2); .40 (Tier 3)		
Planning Volumes For On-Water Recovery (OWP)			
(Worst Case Discharge)(Percent Recovered Floating Oil)(Emulsification Factor)			
(169)(.50)(2.0) = 169 bbl			
Planning Volume For Onshore Recovery			
(Worst Case Discharge)(Percent Oil Onshore)(Emulsification Factor)			
(169)(.50)(2.0) = 169 bbl			
Necessary Resources For On-Water Recovery			
(OWP)(MF) = (169)(MF)	Tier 1 (.15)	Tier 2 (.25)	Tier 3 (.40)
bbl/day	25	42	68
Conclusions: Venoco has contracted with response resources capable of handling a 169-bbl shoreline cleanup. Venoco has contracted response resources for 25 bpd for Tier 1; 42 bpd for Tier 2; and 68 bpd for Tier 3. Venoco has contracted temporary storage resources for 224 bpd for Tier 1; 374 bpd for Tier 2; and 598 bpd for Tier 3. The contracted resources will be located such that they can arrive on scene within 12, 36, and 60 hours of discovery of an oil discharge for Tier 1, Tier 2, and Tier 3, respectively.			

Venoco will rely on Clean Seas for on-water containment and recovery of all spills. All of Clean Seas' response equipment, including the derated recovery capability, the amount of boom feet, and the temporary storage capability, is provided in Appendix F. Clean Seas has demonstrated in its ability to meet the Federal daily recovery capability standards for the Santa Barbara Channel of 12,500 bbl/day within 12 hours, 25,000 bbl/day within 36 hours, and 50,000 bbl/day within 60 hours. Onshore response and cleanup will be provided by NRC. Equipment lists are provided in Appendix F.

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S.1 HAZARD EVALUATION

This section addresses the requirements for a hazard evaluation as described in Section 1.4 of Appendix F to Part 112 of 40 CFR. A risk and hazard analysis of the facilities has been conducted and is summarized in Section Q.3. Several potential risk areas were uncovered and mitigation measures were recommended and implemented. Although the facility is equipped with controls and mitigation measures, releases are still possible.

S.1.1 Hazard Identification

Table S-1 presents the hazard identification for the tanks located at the Ellwood Marine Terminal. No loading of transportation vehicles is done at the facility. There have been no significant spills since Venoco became operator in 1997.

Table S-1. Hazard Identification Tanks.

Tank No.	Substance Stored (Oil and Hazardous Substance)	Quantity Stored (gallons)	Tank Type/Year	Maximum (Shell) Capacity (gallons)	Secondary Containment Volume (gallons)
8264	Crude oil	26.5 x 108^5	Riveted steel, floating roof/1929 erected and 1977 renovated	28.1 x 10^5	3.7 x 10^6
8265	Crude oil	26.5 x 108^5	Riveted steel, floating roof/1929 erected and 1977 renovated	28.1 x 10^5	3.7 x 10^6

S.1.2 Vulnerability Analysis

This section addresses the potential effects of an oil spill on human health, property, and the environment. Each of the areas listed in Section 1.4.2 of the regulations are addressed below.

Water Intakes. There are no drinking, cooling, or other water intakes near the facility that could be impacted by a release from the facility.

Schools. There are no known schools near the facility that could be impacted by a release from the facility. The closest schools are the Isla Vista School and University of California, Santa Barbara (UCSB), approximately one mile from the facility.

Residential areas. The City of Goleta is located north and east and west of the facility. Ocean Meadows Golf Course is located just north and east of the facility. Coal Oil Point Ecological

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Preserve and Devereaux Slough are to the southeast and serve as a buffer between the facility and the school.

Businesses. The only business in the immediate vicinity is the Ocean Meadows Golf Course.

Wetlands or Other Sensitive Environments. See Appendix M.

Fish and Wildlife. See Appendix M.

Lakes and Streams. There are no lakes and streams near the facility that could be impacted by a release from the facility. Devereaux Slough, a 45-acre slough, lies just to the north of Coal Oil Point. The slough contains freshwater emergent vegetation, salt marsh, tidal flats, and sand dune habitats

Endangered Flora and Fauna. See Appendix M.

Recreational Areas. See Appendix M.

Transportation Routes. Union Pacific Rail Road mainline track and U.S. Highway 101 are over one mile north of the facility. Tank and secondary containment failure would not impact the transportation routes.

Utilities. There are no utilities in the vicinity of the facility that would be impacted by a release from the facility.

Other Areas of Economic Importance. See Appendix M.

S.1.3 Analysis of the Potential for an Oil Spill

A risk and hazard analysis was conducted on the facility and is discussed in Section Q.3. It was determined that spills could range from a few drops up to 28.1 x 10^5 gallons, the worst case. Potential spill sources include tanks, pipelines and piping, and valves. All tanks are located within secondary containment systems.

S.1.4 Facility Reportable Oil Spill History

There have not been any reportable spills since Venoco took over the facility in 1997.

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S.2 DISCHARGE DETECTION SYSTEMS

Appendix B, Inspection, Maintenance and Spill Prevention, describe the procedures and equipment used to detect discharges. This includes detection by personnel and by automated spill detection equipment.

S.3 DISCHARGE SCENARIOS

This section provides spill response scenarios from small, medium, and worst-case discharges at the Ellwood Marine Terminal. The scenarios are based on the type of operations at the facility. The scenarios illustrate the Venoco's response is dependent on the size of the spill and particular circumstances of the incident. Emphasis is also placed on measures taken to mitigate the impact of the spill, including the protection of potentially affected areas.

The following scenarios are descriptive and are intended for planning purposes to provide a general overview of response activities that would occur, and the resources that would be mobilized. They are not intended to be used by response personnel during an actual incident.

S.3.1 Small Spill

Spills of 50 bbl or less are classified as small spills. Small spills can occur from operational activities such as tank or piping leaks/failures, sensing device failures, and operator errors. The following scenario is a line failure. This scenario demonstrates response actions by on-scene personnel, deployment of on-scene equipment, and post-incident actions taken.

Situation

The line breaks at a flanged connection. The Operator has just turned on the loading pump when the pump surge causes the failure resulting in a 35-bbl spill onto the ground and spreads out and covers an area of about 300 square feet.

Initial Response

The Operations Supervisor assesses the situation. Noting that the spill is contained and cannot enter marine waters, he calls the appropriate Venoco Management to advise him of the spill. He documents his actions.

The appropriate County, State, and federal agencies are then called and advised of the spill, the actions that are being taken, and that the spill will not affect marine waters or ground water supplies. He documents his actions.

Cleanup

The Operations Supervisor dispatches a person to bring facility sorbent pads to the scene. The oil on the ground is picked up by the sorbent pads, which are properly stored for future disposal. An outside contractor is brought in to remove the contaminated soil, dispose or treat the

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contaminated soil, dispose of the contaminated material (sorbent pads and soil) at an approved Class II disposal site, and rebuild the disturbed soil surface.

Post Spill

The Report of Oil and Hazardous Substances Release is filled out and submitted to the appropriate County, State, and federal agencies.

Repair of the ruptured line is started.

An order is placed for the expended sorbent pads.

All documentation is collected and filed.

S.3.2 Medium Spill

The medium-sized spill involves a break in the oil line to the facility. Oil is being batched to the terminal but the leak detection system fails to immediately detect the leak and shut in the line. This scenario highlights several key decisions, including whether Sustained Incident Response Team (SIRT) should be activated, which resources should be activated, which resources should be mobilized, and what actions need to be taken to protect vulnerable resources.

Situation

There is heavy rain.

Loading is not taking place and no one is present at the marine terminal. The Ellwood Onshore Facility is always manned.

A call is received stating that oil has been observed floating on the water south of the marine terminal.

Initial Response

The on-duty operator sends a person to the reported oil slick. The person is advised to also look at the storage tanks and pipeline to report back as soon as possible. All actions are documented.

The Operator contacts the Operations Supervisor immediately and advises them of the reported spill. Notification is logged.

The Facility Supervisor calls Clean Seas and tells them of the spill. Notification is logged.

The person dispatched to the spill location calls and reports he saw oil on the water which appeared to have run down from the pipeline. There is still no instrumentation indication that the spill is coming from the Venoco pipeline or other source. The Incident Commander orders the pipeline shutdown.

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The Operations Supervisor assumes the position of Incident Commander. He activates Clean Seas and the SIRT, and calls 911. County, State, and Federal agencies are notified of the situation. The actions taken are logged.

Contain and Control

A Clean Seas OSRV arrives and booms off the affected waters and starts skimming operations.

The Incident Commander knows that additional outside contractors will be needed to assist in shoreline cleanup operations.

Cleanup

The Incident Commander advises the Safety Officer to ensure that the cleanup operations are being implanted to protect response personnel and comply with applicable provisions of 29 CFR Part 1920.120.

Shoreline cleanup work begins the next morning using approved contractors.

Personnel document all actions.

Post Spill

Plans are made to restore any areas required.

All other post spill actions are the same as for a small spill.

S.3.3 Worst Case Discharge

The worst case discharge is the failure of a 67,000-bbl storage tank with secondary containment failure (See Section S.4 for calculation).

Situation

The main storage tank is filled to capacity due to unavailability of the barge. The tank has a catastrophic failure resulting in a sudden outpour of oil at high velocity that causes the southern berm to fail. The oil flows downhill into the ocean.

Initial Response

The tank failure activates a low level alarm at the Ellwood Onshore Facility control room which is always manned. Upon activation of the alarm, the operator on duty dispatches someone to the marine terminal to investigate the situation.

Upon arrival to the marine terminal and verification of the release, the person assumes the role of Incident Commander and notifies the Operations Supervisor. The Facility Supervisor calls the California OES and the National Response Center. He also calls Clean Seas for activation to the site for containment and recovery purposes and start activation of the SIRT. Notifications are

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made per Section 2 of the Oil Spill Contingency Plan. County, State, and Federal agencies are notified of the actions being taken, that marine waters have been affected, but that public water intakes have not been affected. All actions and notifications are documented.

Upon arriving at the site, the Operations Supervisor takes over as the Incident Commander until relieved by the SIRT IC. He receives an update on the status of the spill. No estimates are available on the amount of oil that has reached marine waters and the amount that remains onshore. He also meets with fire and law enforcement units at the site.

All actions taken and notifications made are documented.

Sustained Response

The Incident Commander meets with the Section Chiefs to begin the sustained response action. He orders the Safety Officer to undertake measures to secure the site and to make sure that workers have the required training and necessary protective equipment. The Logistics Section Chief, after coordinating with the Operations Section Chief, begins to assemble outside contractors with the necessary equipment and manpower to cope with the full containment of the spill and the commencement of cleanup work.

USCG and DF&G personnel arrive at the Command Center and the Incident Commander briefs them on what happened, what response actions have been taken, and what response actions are planned.

A USCG vessel monitors the offshore response activities and provides advice on boom placement and skimming operations.

DF&G personnel monitor the shoreline for possible recovery of oiled wildlife.

A plan for beach cleanup activities by outside contractors at selected staging areas is developed and implemented.

The Public Relations Officer develops a press release to respond to public concerns and to advise the media of the progress being made in the cleanup operations.

Near the end of cleanup operations, plans are readied to revegetate and restore areas impacted by the spill.

Post Spill

The Incident Commander completes the Report of Oil and Hazardous Substances Release form and submits it to Corporate management for approval and submittal to the proper authorities.

The Documentation Unit Leader gathers all documentation including photographs, press releases, etc., and prepares a final spill report.

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S.4 SMALL, MEDIUM AND WORST CASE DISCHARGE CALCULATIONS

Small Discharge

A small discharge is defined by EPA regulation 40 CFR 112 to be any spill up to 2,100 gallons (50 bbl).

Medium Discharge

A medium discharge is defined as a discharge greater than 2,100 gallons (50 bbl) and less than or equal to 36,000 gallons (857 bbl) or 10 percent of the capacity of the largest tank at the facility, whichever is less. The largest tank is 28.1 x 10^5 gallons (67,000 bbl). Therefore a medium discharge is greater than 2,100 gallons and less than or equal to 36,000 gallons.

Worst Case Discharge

The Ellwood Marine Terminal is a multiple-tank facility with all storage tanks having adequate secondary containment. Tanks are not permanently manifolded together. Therefore, in accordance with 40 CFR Part 112, Appendix D, A.2, the worst-case discharge is the capacity of the largest single aboveground storage tank within an adequate secondary containment area. The tank is the 67,000-bbl storage tank. **Final worst case discharge volume is 28.1 x 10^5 gallons**.

S.5 PLANNING VOLUMES AND RESPONSE RESOURCES

Small Discharge

The response resources required for handling a small spill are defined by 40 CFR 112 as including:

- 1,000 feet of containment boom and a means of deploying it within one hour of discovery of a spill.
- Oil recovery devices with sufficient daily recovery capacity to handle a small discharge and available within two hours of spill detection.
- Oil storage capacity equivalent to twice the daily recovery capacity required on-scene (i.e., 100 bpd or greater).

The resource requirements for this size spill would be satisfied through the use of Clean Seas and its equipment and personnel. A detailed inventory is provided in Appendix F and evidence of contractual agreement is provided in Appendix G.

Medium Discharge

The response resources for handling a medium spill must include:

- Oil recovery devices on-scene within 12 hours.

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- Effective daily recovery capacity equal to 50 percent of the medium discharge (18,000 gallons/day or 492 bpd).
- Sufficient containment boom to arrive within the required response times.
- Temporary oil storage equal to twice the effective daily recovery capacity required on-scene (i.e., 36,000 gallons or 857 bbl).

The resource requirements for this size spill would be satisfied through the use of Clean Seas and ACTI and their equipment and personnel. A detailed inventory is provided in Appendix F and evidence of contractual agreement with Clean Seas is provided in Appendix G. Venoco also holds a contract with ACTI for onshore cleanup.

Worst Case Discharge

Table S-2. Worst Case Discharge Worksheet For Onshore Storage Facilities[1].

A.2	Secondary Containment - Multiple Tank Facilities Are all aboveground oil storage tanks or groups of aboveground oil storage tanks at the facility without adequate secondary containment?[2]	**N** (Y/N)
A.2.1	If the answer is yes, the final worst case discharge planning volume equals the total above ground oil storage capacity at the facility. (1) Final Worst Case Volume (2) Do not proceed further	—
A.2.2	If the answer is no, calculate the total aboveground oil storage capacity of tanks without adequate secondary containment. If all aboveground oil storage tanks or groups of aboveground oil storage tanks at the facility have adequate secondary containment, ENTER "O" (zero).	**0**
A.2.3	Calculate the capacity of the largest single aboveground oil storage tank within an adequate secondary containment area or the combined capacity of a group of aboveground oil storage tanks permanently manifolded together, whichever is greater, plus the volume for question A.2.2.[3] Final worst case volume[4]	**28.1 x 10^5 gal. or 67,000 bbl (Tank 8265)**

Footnotes:

1 "Storage facilities" represent all facilities subject to this part, excluding oil production facilities.

2 Secondary containment is defined in 40 CFR 112.7(e)(2). Acceptable methods and structures for containment are also given in 40 CFR 112.7(c)(1).

3 For onshore storage facilities and production facilities, permanently manifolded oil storage tanks are defined as tanks that are designed, installed, and/or operated in such a manner that the multiple tanks function as one storage unit (i.e., multiple tank volumes are equalized). Permanently manifolded tanks that are separated by internal divisions for each tank are considered to be single tanks and individual manifolded tank volumes are not combined. (Refer to 40 CFR Part 112, Appendix D, Section 1.2 for further discussion.)

4 All complexes that are jointly regulated by EPA and the USCG must also calculate the worst case discharge planning volume for the transportation-related portions of the facility and plan for whichever volume is greater.

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Table S-3. Planning Volumes and Resources Required For EPA Worst Case Discharge.

Factors	Values		
Worst Case Discharge Volume of Oil	67,000 bbl		
Type of Petroleum Handled	Group III		
Facility-Specific Operating Area	Inland/Nearshore		
Emulsification Factor (EF)	2.0		
Percent Recovered Floating Oil	50		
Percent Oil Onshore	50		
Percent Lost To Natural Dissipation	30		
Mobilization Factors (MFs)	.15 (Tier 1); .25 (Tier 2); .40 (Tier 3)		
Planning Volumes For On-Water Recovery (OWP)			
(Worst Case Discharge)(Percent Recovered Floating Oil)(Emulsification Factor)			
(67,000)(.50)(2.0) = 67,000 bbl			
Planning Volume For Onshore Recovery			
(Worst Case Discharge)(Percent Oil Onshore)(Emulsification Factor)			
(67,000)(.50)(2.0) = 67,000 bbl			
Necessary Resources For On-Water Recovery			
(OWP)(MF) = (67,000)(MF)	Tier 1 (.15)	Tier 2 (.25)	Tier 3 (.40)
bbl/day	10,050	16,750	26,800

Conclusions:

Venoco has contracted with Clean Seas, and NRC Environmental Services, Inc. to respond to onshore, shoreline and offshore spill events, including temporary storage. Both contractors are certified and capable of meeting the federal tiers of 12.5K bpd (12 hr), 25K bpd (36 hr), and 50K bpd (60 hr). Equipment lists are provided in Appendix F.

Venoco has contracted response resources capable of handling a 67,000-bbl shoreline cleanup.

Venoco has contracted response resources for 12,500 bpd for Tier 1; 25,000 bpd for Tier 2; and 50,000 bpd for Tier 3.

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T.1 INTRODUCTION

The following appendix includes information required by 33 CFR Part 154, Subpart F that has not been addressed in Sections One and Two and Appendices A through U of this Plan. A cross-reference index (Table CR-4) is included at the front of the plan that identifies the location of information required by the above-mentioned regulations. USCG regulations apply to the Ellwood Marine Terminal.

T.2 FACILITY'S SPILL MITIGATION PROCEDURES

T.2.1 Average Most Probable Discharge

The average most probable discharge is defined as the lesser of 50 bbl or 1 percent of the volume of the worst-case discharge (see Section T.2.3).

Average Most Probable Discharge = (0.01) (602.1 bbl)

= 6.0 bbl

T.2.2 Maximum Most Probable Discharge

The maximum most probable discharge is defined as the lesser of 1,200 bbl or 10 percent of the volume of the worst-case discharge (see Section T.2.3).

Maximum Most Probable Discharge = (0.10) (602.1 bbl)

= 60.2 bbl

T.2.3 Worst-Case Discharge

Calculation of the worst-case discharge for the marine transportation-related portion of the Ellwood Marine Terminal takes into consideration:

- Loss of the entire capacity of all in-line and breakout storage tank(s) needed for the continuous operation of the pipelines used for the purposes of handling or transporting oil, in bulk, to or from a vessel regardless of any secondary containment.
- Discharge from all piping carrying oil between the marine transfer manifold and the non-transportation related portion of the facility.

Basis for the worst-case discharge assumes the catastrophic rupture of the loading line between the pumps and barge, while both pumps are on. (There are no in-line or breakout storage tanks at this facility.) In addition, the following conditions exist for each loading:

- The loading operation is fully attended by an operator who has the ability to shut down loading in an emergency by pressing an Emergency Shutdown (ESD) switch. Pumps

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automatically turn-off and all motor-operated valves (MOVs) close, isolating the loading line.

- Pressure on the loading line is continually recorded on a circular chart in the Control Building near the operator's work area. The operator observes the pressure frequently and will activate the ESD system immediately if a pressure drop is noted.
- The MOVs will close within 60 seconds of activating the ESD system.

Calculation:

Given:

$Tmax_{discover} + Tmax_{ESD}$ = 5 min = 0.083 hr

Qmax = 4,200 BPH (both pumps running)

Loading Line = 12-in diam. line for 550 ft to beach MOV at .1384 bbl/ft, 8-in diam. line for 2,665 ft to barge at .06217 bbl/ft, and 8-in diam. hose for 187.745 ft at .06217 bbl/ft.

Worst Case Discharge = $(Tmax_{discover} + Tmax_{ESD})$ (Qmax) + Vol_{pipe}

= (0.083 hr)(4,200 BPH) + (550 ft)(.1384 bbl/ft) + (.06217 bbl/ft)(2,852.745 ft)

= 602.1 bbl of Group III oil

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PLAN STATEMENT AND APPROVAL

This appendix section of the South Ellwood Field Oil Spill Contingency Plan designates this Plan as the oil spill response plan for the Ellwood Pipeline Inc. (EPI) – Line 96 Pipeline; and designates Venoco Inc. as the contract operator responsible for effective response to all oil spill events. This plan shall be immediately activated upon the occurrence of any spill, as described in this plan.

Facility personnel must be trained and ready to respond to all spills and to effectively implement this plan. Upon arrival of jurisdictional agencies with authority, Venoco Inc. personnel shall work in coordination with all responding agencies to mitigate the problem, including providing technical support and expertise to State and County personnel under the Incident Command System (ICS).

This plan is required to be approved by:

- Santa Barbara County Office of Emergency Management (OEM).
- City of Goleta

The South Ellwood Field Oil Spill Contingency Plan shall be implemented according to the guidelines described herein and all employees shall be trained in their responsibilities for implementing the spirit and intent of this plan. EPI and its contractor (Venoco Inc.) shall strive for the protection of life, property and the environment, employees and non-employees, in the event of an oil spill.

Employees observing a spill will not hesitate to immediately notify the Santa Barbara County emergency agencies via 9-1-1 (or via 805 683-2724 if using a cellular phone) and other responsible agencies in the event of a spill.

Elsa Arendt Date: 1/27/12

Approved By Santa Barbara County Office of Emergency Management

Anne Wells Date: 1/27/12

City of Goleta

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1.1 FACT SHEET

1.1.1 Ellwood Pipeline Inc.

Name of Facility:	• Line 96 Pipeline
Name, Address and Telephone Number of Owner:	**Ellwood Pipeline, Inc.** 6267 Carpinteria Avenue, Suite 100 Carpinteria, CA 93013 (805) 745-2100 (805) 745-1406 (fax)
Mailing Address:	**Ellwood Pipeline, Inc.** 6267 Carpinteria Avenue, Suite 100 Carpinteria, CA 93013
Emergency Telephone Number:	**1-888-836-6261**
Name, Address, Telephone Number To Whom Correspondence Should Be Sent:	**Keith Wenal** 6267 Carpinteria Avenue, Suite 100 Carpinteria, CA 93013 (805) 745-2259 (work) (805) 682-1888 (home) (805) 705-9307 (cellular)
Name, Address, Telephone Number Of Agent For Service Of Process:	**Terry Anderson** 6267 Carpinteria Avenue, Suite 100 Carpinteria, CA 93013 (805) 745-2253 (work) (805) 745-1816 (fax) tanderson@venocoinc.com

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Pipeline Description

The Ellwood Pipeline Inc. - Line 96 pipeline is a 6 inch 8 and ½ mile long pipeline that begins immediately adjacent to the Venoco Inc. Ellwood Onshore Facility (EOF) at a new EPI valve box just outside the primary EOF entrance gate where route travels north from the Venoco facility under Hwy 101 and Calle Real Street and turns west and continues along the North side of Hwy 101 along the Gaviota Coast to the terminus at the tie into the Plains Pipeline, L. P. pipeline system. Creek crossings along the pipeline route are shown in Figure A-14.

Crude oil is transferred in 271 BPH batch shipments approximately 4-6 times per day not to exceed 13,000 BPD. Specifics on the pipeline are provided in Appendix R of this document.

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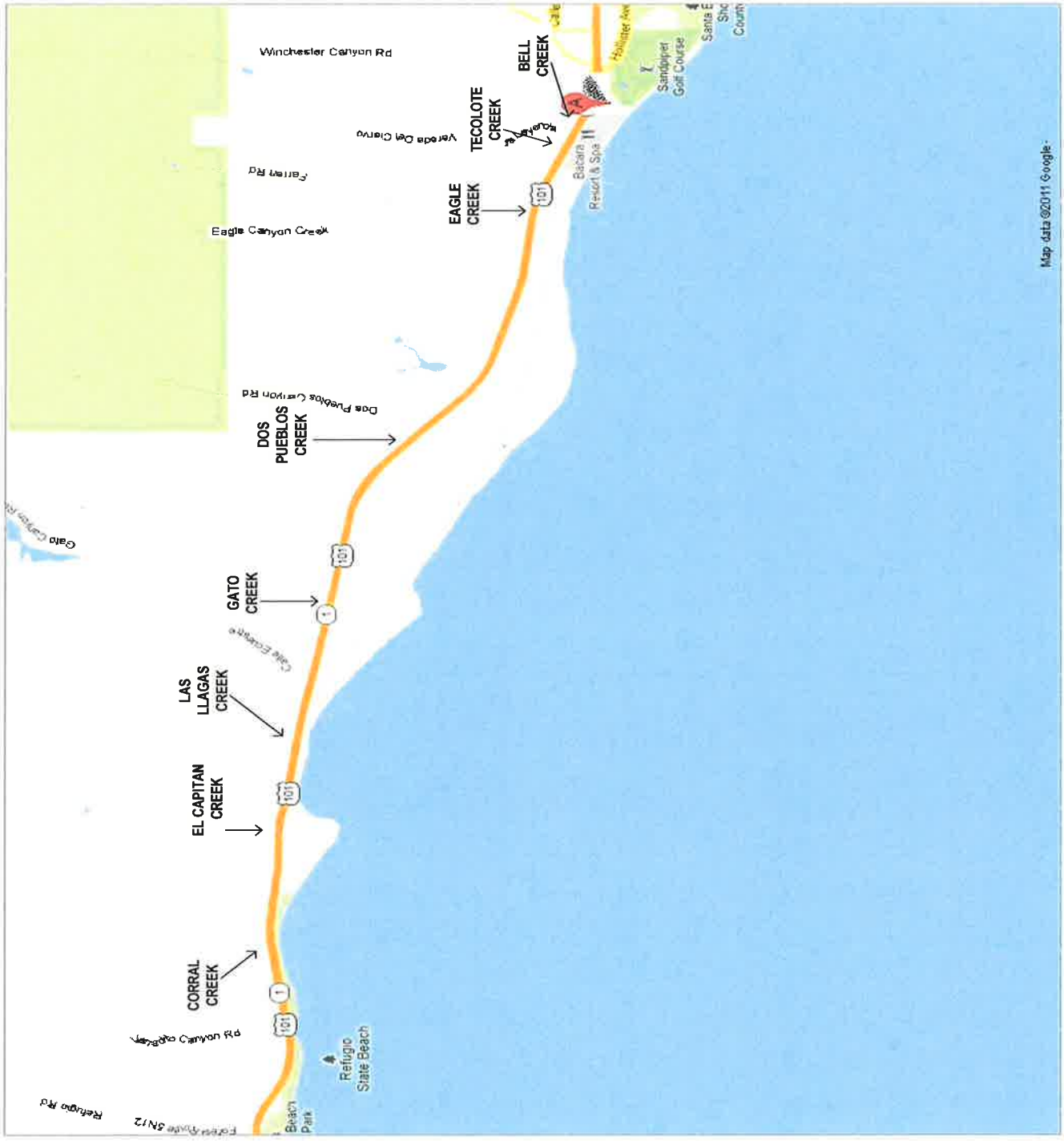

Figure A-14. Creek Crossings Along EPI Line 96 Pipeline Route

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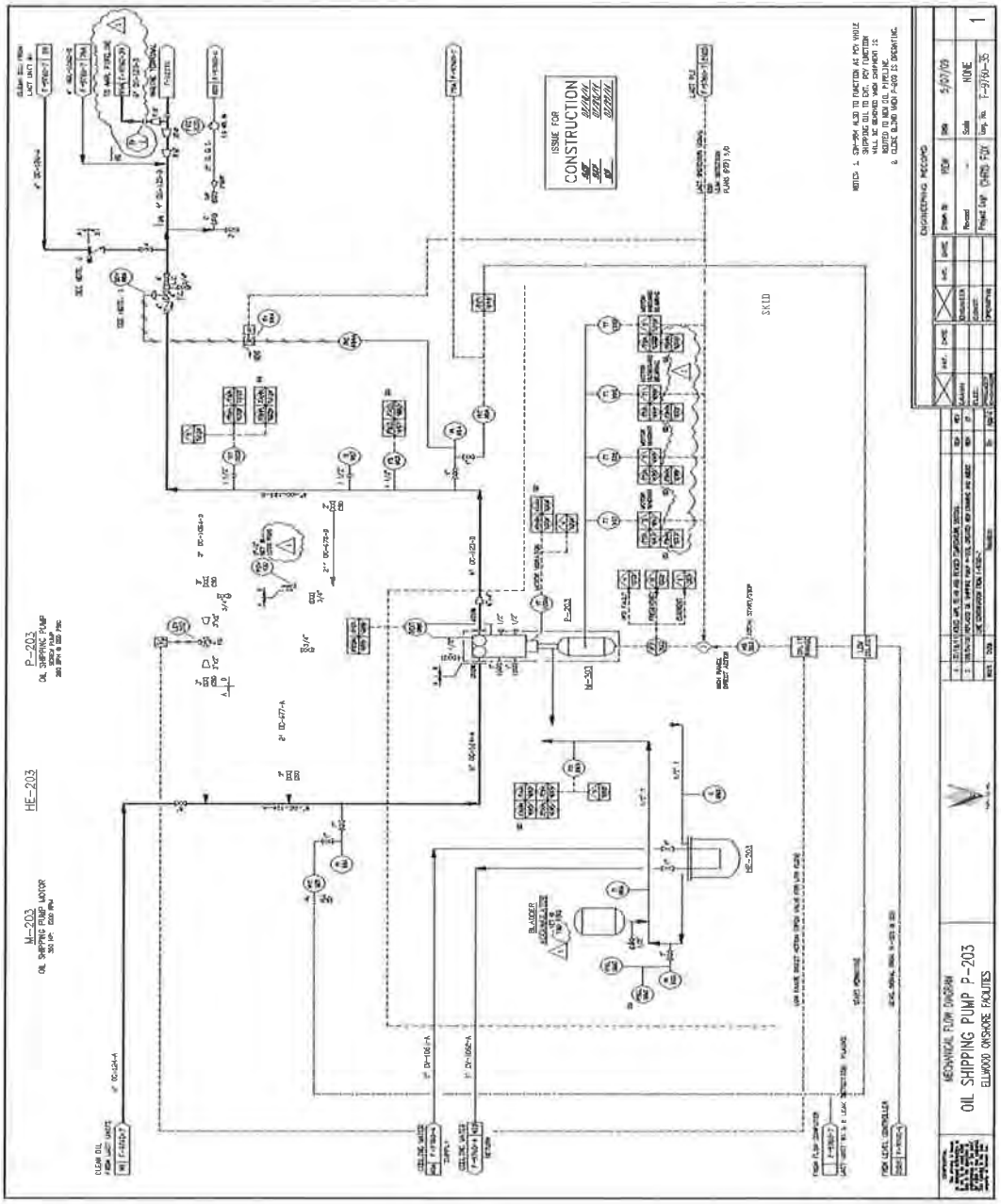

Figure U-2. Process Flow for Line 96 Pipeline

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ACRONYMS

ACP	Area Contingency Plan
APCD	Air Pollution Control District
BBL(S)	Barrel(s)
BPD	Barrel(s) Per Day
CALTRANS	California Department of Transportation
CFR	Code of Federal Regulations
CHP	California Highway Patrol
CS	Clean Seas
CWA	Clean Water Act
DFG	California Department of Fish and Game
DOT	Department of Transportation (U.S.)
DTSC	Department of Toxic Substance Control
EAP	Emergency Action Plan
EMA	Emergency Management Agency
EMT	Ellwood Marine Terminal
EOF	Ellwood Onshore Facility
EPA	Environmental Protection Agency
ESD	Emergency Shutdown Device
ESI	Environmental Sensitivity Maps Index (ESI) Atlas for California
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FOSC	Federal On-Scene Coordinator
GPM	Gallon(s) Per Minute
HAZWOPER	Hazardous Waste Operations and Emergency Response
H_2S	Hydrogen Sulfide
ICS	Incident Command System
IIRT	Initial Incident Response Team
JIC	Joint Information Center
LACT	Lease Automatic Custody Transfer
MAC	Multi-Agency Coordinator
MSDS	Material Safety Data Sheets
MSO	Marine Safety Office
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System

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NPREP	National Preparedness for Response Exercise Program
NRC	National Response Center
NRCES	National Response Corporation – Evironmental Services
NRDA	Natural Resource Damage Assessment
NRT	National Response Team
NWS	National Weather Service
OCS	Outer Continental Shelf
OEM	Office of Emergency Management
OPA 90	Federal Oil Pollution Act of 1990
OSCP	Oil Spill Contingency Plan
OSHA	Occupational Safety and Health Administration
OSPR	Oil Spill Prevention and Response in the CA Department of Fish and Game
OSRO	Oil Spill Response Organization
OSRV	Oil Spill Response Vessel
OWCN	Oiled Wildlife Care Network
PHMSA	Pipeline Hazardous Materials Safety Administration
PIO	Public Information Officer
PPE	Personal Protective Equipment
PREP	Preparedness for Response Exercise Program
PST	Pacific Strike Team
QI	Qualified Individual
RCRA	Resource Conservation and Recovery Act of 1976
RMA	Response Management Associates
RP	Responsible Party
RRT	Regional Response Team
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SIRT	Sustained Incident Response Team
SSC	Scientific Support Coordinator
TTU	Transportable Treatment Unit
UCS	Unified Command System
UHF	Ultra-High Frequency
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VHF	Variable High Frequency
WCD	Worst Case Discharge

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DEFINITIONS

Abandoned Waste – Materials which are disposed of, burned or incinerated, or accumulated, stored, or treated.

Access/Staging Areas – Designated areas near the spill site accessible for gathering and deploying equipment and/or personnel.

Adverse Weather – The weather conditions considered when identifying response systems and equipment in a contingency plan for the applicable operating environment. Factors considered include wind, significant wave height, temperature, weather-related visibility, and the tides and currents.

Agency Representative – Individual assigned to an incident from an assisting or cooperating agency with full authority to make decisions on all matters affecting that agency's participation.

Barrel (bbl) – A barrel of oil equals 42 gallons (U.S.) at 60 degrees Fahrenheit.

Biological Additives – Microbiological cultures, enzymes, or nutrient additives that are deliberately introduced into an oil discharge for the specific purpose of encouraging biodegradation to mitigate the effects of a discharge.

Bioremediation – An oil spill cleanup technique using nutrients or a mixture of nutrients and bacteria to facilitate the degradation of the oil by microorganisms.

Burning Agents – Those additives that through physical or chemical means, improve the combustibility of the materials to which they are applied.

California Designated Waste – Any non-hazardous waste which contains pollutants which could cause degradation of water quality of a hazardous waste which has been granted a variance from hazardous waste management requirements. Examples of designated wastes include such oil production wastes as heavy oil tank bottoms, drilling muds, produced water, and soil contaminated with hydrocarbons.

California Extremely Hazardous Waste – Any hazardous waste or mixture of hazardous waste "which, if human exposure should occur, may likely result in death, disabling personal injury or serious illness."

California Hazardous Waste – Any hazardous waste which, due to its quantity, concentration, or physical, chemical or infectious characteristics, may either cause an increase in mortality or serious illness, or pose a substantial threat to health or environment when improperly handled.

California Hazardous Waste Control Law – State Law governing hazardous waste identification, handling, transportation, treatment, and disposal.

California Restricted Hazardous Waste – As of May 8, 1990, all hazardous wastes in California were to be prohibited from land disposal without prior treatment to reduce their toxicity. However, various extensions of the deadline have been provided by the State.

Captain of the Port Zone – A zone specified in 33 CFR Part 3 and the seaward extension of that zone to the outer boundary of the exclusive economic zone.

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Cascadable – The movement of response equipment to the scene of a spill in multi-tiered stages.

Chemical Agents – Those elements, compounds, or mixtures that coagulate, disperse, dissolve, emulsify, foam, neutralize, precipitate, reduce, oxidize, concentrate, congeal, entrap, fix, make the pollutant mass more rigid or viscous, or other facilitate the mitigation of deleterious effects or the removal of the pollutant from the water.

Claim – A request, made in writing for a sum certain, for compensation for damages or removal costs resulting from an incident.

Clean Seas – An oil spill cooperative comprised of operating companies in the petroleum industry with interests in the Clean Seas' Area of Responsibility and who have joined in an effort to combat oil spill pollution. The Area of Responsibility is defined as the public and private properties, beaches, harbors, offshore islands, and waters along the coast of California between and including Point Dume to the south and Cape San Martin to the north.

Coastal Waters – This designation includes all U.S. waters subject to the tide, U.S. waters of the Great Lakes, specified ports and harbors on the inland rivers, waters of the contiguous zone (12 n.mi.) or other waters subject to discharges in connection with activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act. These waters include those contained within the exclusive economic zone (200 n.mi.).

Coastal Zone – Means all United States waters subject to the tide, United States waters of the Great Lakes, specified ports and harbors on inland rivers, waters of the contiguous zone, other waters of the high seas subject to the NCP, and the land surface or land substrata, ground waters, and ambient air proximal to those waters. The term coastal zone delineates an area of federal responsibility for response action. Precise boundaries are determined by EPA/USCG agreements and identified in federal regional contingency plans.

Command Post/Center – A location in proximity to the spill scene, which serves as the central location for meetings and briefings and the base for all planning, logistics, and finance support activities.

Containment Boom – A vertical barrier which floats above water supporting a subsurface skirt and serves as one of the first lines of defense against the spreading of an oil spill. Due to the scope of utilization across land and sea environments, containment booms are designed for specific applications, such as long-term deployment and rapid deployment, as well as for operations in rough open water, moderate and calm seas, and in quiet, protected waters (e.g., harbors).

Cultural Resources – Current, historic, prehistoric, and archaeological resources which include deposits, structures, ruins, sites, buildings, graves, artifacts, fossils, or other objects of antiquity which provide information pertaining to the historical or prehistoric culture of people in the State as well as to the natural history of the State.

Damage Assessment – The process of determining and measuring damages and injury to the human environment and natural resources including cultural resources. Damages include differences between the conditions and use of natural resources and the human environment that would have occurred without the incident, and the conditions and use that ensued following the incident. Damage assessment includes planning for restoration and determining the costs of restoration.

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Decontamination – The removal of hazardous substances from personnel and equipment necessary to prevent adverse health effects.

Demobilization – The deactivation of equipment, personnel, and other resources involved in response operations.

Derated Capacity – The manufacturer's rating for the recovery capacity of a piece of skimming equipment has been reduced to reflect the limitations of response equipment efficiency as a result of such variables as weather, sea state, current velocity, hours of operation per day, or visibility. The derated capacity shall be calculated as 20% of the manufacturer's rated skimming capacity (SC) for the equipment for a 24-hour period [(SC x 24 hours) x 20% = derated capacity].

Discarded – Any substance which is abandoned, recycled, or "inherently waste like."

Dispersants – Chemicals that can be applied to an oil spill to aid the natural process in breaking up the oil. There are three types of dispersants: water-based, solvent-based, and concentrates. Use of dispersants is subject to OSC approval, with approval of the EPA representative to the RRT and the concurrence of the State with jurisdiction over the navigable waters polluted by the spill.

Federal Hazardous Waste – As defined by RCRA, a solid discarded waste which is not specifically exempt or excluded, and which exhibits certain specific characteristics of a hazardous waste or is specifically listed as a hazardous waste.

Federal On-Scene Coordinator – USCG (coastal waters) or EPA (inland waters and land) representative who provides overall coordination of cleanup activities.

Federal Restricted Hazardous Waste – The 1984 Hazardous and Solid Waste Amendments to RCRA essentially banned all RCRA hazardous wastes from land disposal as of May 8, 1990, unless the wastes have been treated to a specified standard to reduce their toxicity. Once treatment has been completed, the waste can be disposed of in a hazardous waste disposal facility.

Hazardous Material – Any hazardous substance, pollutant, or contaminant including natural gas, natural gas liquids, liquefied natural gas, or synthetic natural gas usable for fuel (or mixtures of natural gas and such synthetic gas), and any substance designated under the authority of any of the following laws and regulations and the subsequent implementing regulations:

Section 311(b)(2) of the Clean Water Act: 40 CFR 116.4, Tables 116.4A and 116.4B, Lists of Hazardous Substances; and 40 CFR 117.3, Reportable Quantities of Hazardous Substances Designated Pursuant to Section 311 of the Clean Water Act.

Section 102 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA): 40 CFR 302.4, Table 302.4, List of Hazardous Substances and Reportable Quantities.

Section 3001 of the Solid Waste Disposal Act: 40 CFR 261.3, Definition of Hazardous Waste; 40 CFR 261.32, Hazardous Wastes from Specific Sources; and 40 CFR 261.33, Discarded Commercial Chemical Products, Off-Specification Species, Container Residues, and Spill Residues Thereof.

Section 307(a) of the Clean Water Act: 40 CFR 129.4, Toxic Pollutants.

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Section 112 of the Clean Water Act: 40 CFR 61.01, Lists of Pollutants and Applicability of Part 61.

Section 7 of the Toxic Substance Control Act: 40 CFR 716.120, Substances and Listed Mixtures to Which This Part Applies.

Section 302 of the Emergency Planning and Community Right-to-Know Act: 40 CFR 355, Appendices A and B, Extremely Hazardous Substances.

Transportation regulations in 49 CFR 171.8, Hazardous Materials Regulations: 49 CFR 172.101, Hazardous Materials Table; Appendix A, Table 1, Hazardous Substances Other Than Radionuclides; Appendix A, Table 2, Radionuclides; and Appendix B, List of Marine Pollutants.

Marine transportation regulations in 33 CFR 126 and 160: 126.07, Dangerous Cargo; 160.230, Certain Dangerous Cargo; 126.09, Designated Dangerous Cargo; and 126.10, Cargo of Particular Hazard.

Section 6.95 of the California Health and Safety Code, Hazardous Materials Release Response Plans and Inventory.

Section 6.6 of the California Health and Safety Code, Safe Drinking Water and Toxic Enforcement Act of 1986 (commonly referred to as Proposition 65).

HAZWOPER – Hazardous Waste Operations and Emergency Response (29 CFR ∋1910.120). Regulations developed by OSHA that cover the health and safety of workers at hazardous waste sites, including emergency response operations at oil spills.

Incident – An occurrence or event, either human-caused or natural phenomenon, that requires action by emergency service personnel to prevent or minimize loss of life or damage to property and/or natural resources.

Incident Commander – The individual responsible for the management of all incident operations.

Incident Command System – A combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure, with responsibility for the management of assigned resources of an incident. This system was developed through a cooperative interagency effort and its organization structure is based upon a large fire organization that was developed over time by federal fire protection agencies.

Interim Storage Site – A site used to temporarily store recovered oil or oily wastes until the recovered oil or oily waste is disposed of at a permanent disposal site.

Marine Safety Detachment/Office – USCG Safety Office located in most U.S. ports. There is a MSO in Los Angeles-Long Beach. There is a MSD in Santa Barbara.

Maximum Extent Practicable – The planning values derived from the planning criteria used to evaluate the response resources described in the response plan to provide the on-water recovery capability and the shoreline protection and cleanup capability to conduct response activities for a worst-case discharge from a facility in adverse weather.

National Contingency Plan – The plan prepared under the Federal Water Pollution Control Act (33 United States Code ∋1321 *et seq.*) and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 United States Code ∋9601 *et seq.*), including revisions.

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Natural Resources – Includes land, fish, biota, wildlife, air, water, groundwater, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States (including the resources of the exclusive economic zone), any state or local government or Indian tribe, or any foreign government.

Nearshore Area – The area extending seaward 12 miles from the boundary lines defined in 46 CFR Part 7, except in the Gulf of Mexico. In the Gulf of Mexico, it means the area extending seaward 12 miles from the line of demarcation (COLREG lines) defined in 33 of the CFR §§ 80.740 – 80.850.

Non-Hazardous Waste – Any rubbish, trash, and inert wastes such as concrete which do not meet the criteria of hazardous or designated wastes.

Non Petroleum Oil – Oil of any kind that is not petroleum-based. It includes, but is not limited to, animal and vegetable oils.

Non-Routine Waste – Wastes that are not regularly generated, or have not been previously profiled. Examples of non-routine wastes include contaminated soil resulting from hydrocarbon or chemical spills, or the cleanup of previously contaminated soils, chemical or other containers which are no longer in use, demolition of structures containing asbestos, and from other non-routine operations.

Oil – Oil of any kind or in any form. Including but not limited to: petroleum, fuel oil, sludge, oil refuse, and mixed with wastes (other than dredged spoils).

Oil Spill Response Organization – An exclusive team referring to all internal and external manpower resources involved in response operations and response support activities.

Oily Debris – Includes sorbent pads/boom, protection clothing/gear, soil, sand, rocks, logs, kelp, plastics, mousse, oil/water mixture, and animal carcasses.

Persistent Oil – A petroleum-based oil that does not meet the distillation criteria for a non-persistent oil. Persistent oils are further classified based on specific gravity as follows:

Group II – specific gravity less than .85

Group III – specific gravity between .85 and less than .95

Group IV – specific gravity .95 to and including 1.0

Group V – specific gravity greater than 1.0

Qualified Individual(s) – An English-speaking representative(s) of the facility identified in the plan, located in the United States, available on a 24-hour basis, familiar with implementation of the facility response plan, and trained in his or her responsibilities under the plan. This person has full written authority to implement the facility's response plan. This includes: (1) activating and engaging in contracting with identified oil spill removal organization(s); (2) acting as a liaison with the pre-designated Federal On-Scene Coordinator; and (3) obligating, either directly or through prearranged contracts, funds required to carry out all necessary directed response activities.

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Recyclable Materials – Oilfield waste such as spent lead-acid batteries being reclaimed, scrap metal, and oil reclaimed at a petroleum refinery from hazardous waste resulting from normal oilfield activities.

Regional Response Team – The federal response organization (consisting of representatives from selected federal and state agencies) which acts as a regional body responsible for planning and preparedness before an oil spill occurs and providing advice to the FOSC in the event of a major or substantial spill.

Resources – All personnel and major items of equipment available, or potentially available, for assignment to incident tasks on which status is maintained.

Response Contractors – An individual, organization, association, or cooperative that provides or intends to provide equipment and services for oil spill containment, cleanup, and/or removal activities.

Response Priorities – Mechanism used to maximize the effective use of manpower and equipment resources based upon their availability during an operational period.

Risk and Hazard Analysis – A study in which process hazards and potential operating problems that could lead to oil spills are identified using systematic method(s) as recommended by the American Institute of Chemical Engineers, or other means approved by the Administrator. This is the study referred to as the Hazard and Operability Study in Section 8670.28 of the Government Code.

Routine Waste – Wastes which are regularly generated on an annual basis. Routine wastes include drilling muds, tank bottoms and other similar wastes. These wastes have been, to a large extent, pre-classified through the waste profile program. Waste profiling is required prior to acceptance at a waste disposal facility. All wastes must be “profiled” or tested prior to disposal; however, certain routinely generated wastes that result from ongoing operations and processes will be tested or “profiled” once per year to maintain their classification.

Sheen – An iridescent appearance on the surface of the water.

Skimmer – An oil recovery device designed to “skim” floating oil from the oil/water surface. Skimmers employ a variety of mechanism methods to maximize the amount of oil extracted from the water’s surface while attempting to minimize the intake of water into recovery systems and hoses. Various types of skimmers are designed to perform under specific conditions, such as heavy, moderate, or light seas, and to recover certain grades of oil, such as high, medium, or low viscosity oils. Stationary and portable skimmers, usually deployed within an oil containment boom, are designed solely to recover oil; while advancing skimmers can perform the dual functions of oil containment and oil recovery in a single operation.

Solid Waste – Any garbage, refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining and agricultural operations, and from community activities. It is important to remember that, by definition, a solid waste does not have to be solid.

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Sorbent – A sorbent is any material that absorbs oil or to which oil adheres. A sorbent should be oleophilic and hydrophobic (i.e., it should absorb petroleum products from 20-to-25 times its weight and repel water). Sorbents are available in many forms: sheets, booms, sweeps, blankets, and loose materials. Sorbents may be made of polymer beads, synthetic hydrocarbon polymers, cellulose, plastic fiber, and even straw.

Source Control – Any number of procedures that may be employed to stop, curtail, and/or inhibit the source of a spill.

Technical Specialists – Personnel with special skills who are activated only when needed.

Unified Command – A method for all agencies or individuals who have jurisdictional responsibility, and in some cases, those who have functional responsibility at the incident to contribute to determining overall objectives for the incident and selecting a strategy to achieve the objectives.

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