OIL SPILL RESPONSE PLAN
Volume 2 – Supplement

Public Version

Santa Barbara Channel
and
San Pedro Channel

Platforms, Onshore Facilities, and Associated Pipelines

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June 2012

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Section 7 Cross Reference Tables

The Oil Spill Response Plan for DCOR is in two volumes. Volume 1 is called the "Core Plan" and consists of the material that is required to respond to an oil spill. Volume 1 is self-contained and is common to all agency-required oil spill response plans. Volume 2 ("Supplement") contains the portions of the Plan necessary to satisfy regulatory requirements, but that would not be required for reference during a spill response.

Table 7-1 contains the cross-references between the BSEE Oil Spill Response regulations (30 CFR 254) and the contents of this Plan (Vol. 1 & 2) to demonstrate that all regulatory requirements are met by this Plan. Similarly, Table 7-2 contains the cross-references to the California Oil Spill Contingency Plan regulations (California Code of Regulations [CCR] Title 14, Division 1, Subdivision 4, Sections 816.02–Plan Submittal, Review and Approval; and 817.02–Marine Facility Contingency Plans). Table 7-3 contains cross-references between the DOT regulations regarding Response Plans for Onshore Oil Pipelines (49 CFR 194) Subpart A–Response Plans, and Appendix A–Guidelines for the Preparation of Response Plans

Table 7-1. Cross-References to BSEE Regulations

30 CFR Part 254		Location in DCOR OSRP
Section	**Requirement**	
254.21(a)	You must format your response plan … into sections… You may use an alternate format if you include a cross-reference table to identify the location of required sections.	Alternate format. Table 7-1 – Vol. 2
254.21(b)(1)	Plan must include: Introduction and plan contents	Vol. 1, § 1 and Table of Contents Vol. 2, Table of Contents
254.21(b)(2)	Emergency response action plan	Vol. 1, § 5
254.21(b)(3)	Appendices	Vol. 1, Appendices A – G Vol. 2, §§ 7 – 13
245.21(b)(3)(i)	Equipment inventory	Vol. 1, Appendix C
254.21(b)(3)(ii)	Contractual Agreements	Vol. 2, § 8
245.21(b)(3)(iii)	Worst case discharge scenario	Vol. 2, § 11
254.21(b)(3)(iv)	Dispersant use plan	Vol. 1, Appendix F
254.21(b)(3)(v)	In situ burning plan	Vol. 1, Appendix G
254.21(b)(3)(vi)	Training and Drills	Vol. 2, § 10
254.22	The "Introduction and Plan Contents" section must provide:	
254.22(a)	Facility identification	Vol. 1, p. xi
254.22(b)	Table of Contents	Vol. 1, Table of Contents Vol. 2, Table of Contents
254.22(c)	Record of changes made to the plan	Vol. 1, § 1.6 and Table 1-9
254.22(d)	A cross reference table	Vol. 2, § 7
254.23	The "Emergency response action plan" section …	
254.23(a)	Designation, by name or position, of a trained qualified individual (QI) who has full authority to implement removal actions and ensure immediate notification of appropriate Federal officials and response personnel.	Vol. 1, §§ 2.2.1 and 3.1.1.3
254.23(b)	Designation, by name or position of a trained spill management team available on a 24 hour basis.	Vol. 1, § 2.2.3 and Appendix B

Table 7-1. Cross-References to BSEE Regulations

30 CFR Part 254		Location in DCOR OSRP
Section	**Requirement**	
254.23(c)	Description of a spill response operating team.	Vol. 1, §§ 2.2.3.2 and 6
254.23(d)	A planned location for a spill response operations center and provisions for primary and alternate communications systems.	Vol. 1, §§ 4.3 and 6.3
254.23(e)	A listing of the types and characteristics of the oil handled, stored, or transported at the facility.	Vol. 1, § 1.5.6 and Appendix D
254.23(f)	Procedures for the early detection of a spill.	Vol. 1, § 5.2
254.23(g)	Identification of procedures you will follow in the event of a spill or a substantial threat of a spill. Procedures should show appropriate response levels for differing spill sizes including those resulting from a fire or explosion. These will include, as appropriate:	Vol. 1, § 5.1
254.23(g)(1)	Your procedures for spill notification…	Vol. 1, § 3
254.23(g)(1)(i)	Your procedures must include a current list which identifies the following by name or position, corporate address, and telephone number (including facsimile number, if applicable):	
254.23(g)(1)(i)(A)	The qualified individual	Vol. 1, § 2.2.1
254.23(g)(1)(i)(B)	The spill response coordinator and alternate(s); and	Vol. 1, § 2.2 generally
254.23(g)(1)(i)(C)	Other spill-response management team members.	Vol. 1, § 2.2.3
254.23(g)(2)	Your methods to monitor and predict spill movement.	Vol. 1, § 5.5 and Appendix E
254.23(g)(3)	Your methods to identify and prioritize the beaches, waterfowl, other marine and shoreline resources, and areas of special economic and environmental importance.	Vol. 1, § 5.3
254.23(g)(4)	Your methods to protect beaches, waterfowl, other marine and shoreline resources, and areas of special economic and environmental importance.	Vol. 1, §§ 5.6 and 5.7
254.23(g)(5)	Your methods to ensure that containment and recovery equipment as well as the response personnel are mobilized and deployed at the spill site.	Vol. 1, § 6
254.23(g)(6)	Your methods to ensure that devices for the storage of recovered oil are sufficient to allow containment and recovery operations to continue without interruption.	Vol. 1, § 6.2 and Vol. 2, § 13
254.23(g)(7)	Your procedures to remove oil and oiled debris from shallow waters and along shorelines and rehabilitating waterfowl which become oiled.	Vol. 1, §§ 5.6 and 5.7
254.23(g)(8)	Your procedures to store, transfer, and dispose of recovered oil and contaminated materials and to ensure that all disposal is in accordance with Federal, State, and local requirements.	Vol. 1, §§ 6.2 and 6.4
254.23(g)(9)	Your methods to implement your dispersant use plan and your in situ burning plan.	Vol. 1, Appendices F and G
254.24	Equipment inventory appendix:	
254.24(a)	An inventory of spill-response materials and supplies, services, equipment, and response vessels available locally and regionally. You must identify each supplier and provide their locations and telephone numbers.	Vol. 1, Appendix C and Vol. 1, § 3.1.1.5 for notification information
254.24(b)	A description of the procedures for inspecting and maintaining response equipment in accordance with §254.43.	Vol. 1, § 6.6

Table 7-1. Cross-References to BSEE Regulations

30 CFR Part 254		Location in DCOR OSRP
Section	**Requirement**	
254.25	Your "Contractual agreements" appendix must furnish proof of any contracts or membership agreements with OSROs, cooperatives, spill-response service providers, or spill management team members who are not your employees that you cite in the plan…	Vol. 2, § 9
254.26	Worst case discharge scenario:	
254.26(a)	The Vol. of your worst case discharge scenario determined using the criteria in §254.47. Provide any assumptions made and the supporting calculations used to determine this volume.	Vol. 2, § 11
254.26(b)	An appropriate trajectory analysis specific to the area in which the facility is located. The analysis must identify the onshore and offshore areas that a discharge potentially could affect. The trajectory analysis chosen must reflect the maximum distance from the facility that oil could move in a time period that it reasonably could be expected to persist in the environment.	Vol. 2, § 12.2
254.26(c)	A list of the resources of special economic or environmental importance that potentially could be impacted in the areas identified by your trajectory analysis. You must also state the strategies you will use for their protection…	Vol. 1, Table 5.4 and Vol. 2, § 12.3 for resources at risk; and § 5.6.1 for protection strategies
254.26(d)	A discussion of your response to your worst case discharge scenario in adverse weather conditions. This discussion must include:	
254.26(d)(1)	A description of the response equipment that you will use to contain and recover the discharge to the maximum extent practicable. This description must include the types, location(s) and owner, quantity, and capabilities of the equipment. You must also include the effective daily recovery capacities where applicable. You must calculate the effective daily recovery capacities using the methods described in §254.44. For operations at a drilling or production facility, your scenario must show how to cope with the initial spill volume upon arrival at the scene and then support operations for a blowout lasting 30 days.	Vol. 2, § 13 Vol. 1, Appendix C
254.26(d)(2)	A description of the personnel, materials, and support vessels that would be necessary to ensure that the identified response equipment is deployed and operated promptly and effectively.	Vol. 2, § 13 Vol. 1, Appendix C
254.26(d)(3)	A description of your oil storage, transfer, and disposal equipment. Your description must include the types, location and owner, quantity, and capacities of the equipment.	Vol. 2, § 13.1
254.26(d)(4)	An estimation of the individual times needed for:	
254.26(d)(4)(i)	Procurement of the identified containment, recovery, and storage equipment.	Vol. 2, § 13
254.26(d)(4)(ii)	Procurement of equipment transportation vessel(s).	Vol. 2, § 13
254.26(d)(4)(iii)	Procurement of personnel to load and operate the equipment.	Vol. 2, § 13

Table 7-1. Cross-References to BSEE Regulations

30 CFR Part 254		Location in DCOR OSRP
Section	**Requirement**	
254.26(d)(4)(iv)	Equipment loadout (transfer of equipment to transportation vessel(s).	Vol. 2, § 13
254.26(d)(4)(v)	Travel to the deployment site (including any time required for travel from an equipment storage area).	Vol. 2, § 13
254.26(d)(4)(vi)	Equipment deployment.	Vol. 2, § 13
254.26(e)	In preparing the discussion required by paragraph (d) of this section, you must:	See following:
254.26(e)(1)	Ensure that the response equipment, materials, support vessels, and strategies listed are suitable, within the limits of current technology, for the range of environmental conditions anticipated at your facility.	Vol. 2, § 13.1
254.26(e)(2)	Use standardized, defined terms to describe the range of environmental conditions anticipated and the capabilities of response equipment. Examples of acceptable terms include those defined in American Society for Testing of Materials (ASTM) publication F625-94.	Vol. 2, § 13
254.27	Your dispersant use plan must be consistent with the National Contingency Plan Product Schedule and other provisions of the National Contingency Plan and appropriate Area Contingency Plan(s). The plan must include:	Vol. 1, Appendix F
254.27(a)	An inventory and a location of the dispersants and other chemical or biological products which you might use on oils handled, stored, or transported at the facility.	Vol. 1, Appendix F, § F.1
254.27(b)	A summary of the toxicity data for these products.	Vol. 1, Appendix F, § F.2
254.27(c)	A description and a location of any applicable equipment required as well as an estimate of the time to commence application after approval is obtained.	Vol. 1, Appendix F, § F.3
254.27(d)	A discussion of the application procedures.	Vol. 1, Appendix F, §§ F.4 and F.5
254.27(e)	A discussion of the conditions under which product use may be requested.	Vol. 1, Appendix F, § F.6
254.27(f)	An outline of the procedures you must follow in obtaining approval for product use.	Vol. 1, Appendix F, §§ F.7 and F.8
254.28	Your in situ burning plan must be consistent with any guidelines authorized by the National Contingency Plan and the appropriate Area Contingency Plan(s). Your in situ burning plan must include:	Vol. 1, Appendix G
254.28(a)	A description of the in situ burn equipment including its availability, location, and owner.	Vol. 1, Appendix G, § G.2
254.28(b)	A discussion of your in situ burning procedures, including provisions for ignition of an oil spill.	Vol. 1, Appendix G, § G.3
254.28(c)	A discussion of environmental effects of an in situ burn.	Vol. 1, Appendix G, § G.4
254.28(d)	Your guidelines for well control and safety of personnel and property.	Vol. 1, Appendix G, § G.5
254.28(e)	A discussion of the circumstances in which in situ burning may be appropriate.	Vol. 1, Appendix G, § G.6
254.28(f)	Your guidelines for making the decision to ignite.	Vol. 1, Appendix G, § G.7

Table 7-1. Cross-References to BSEE Regulations

30 CFR Part 254		Location in DCOR OSRP
Section	**Requirement**	
254.28(g)	An outline of the procedures you must follow to obtain approval for an in situ burn.	Vol. 1, Appendix G, § G.8
254.29	Your "Training and drills" appendix must:	
254.29(a)	Identify and include the dates of the training provided to members of the spill management team and the qualified individual. The types of training given to the members of the spill operating team also must be described. The training requirements for your spill management team and spill response operating team are specified in §254.41. You must designate a location where you keep course completion certificates or attendance records for this training.	Vol. 2, § 10
254.29(b)	Describe in detail your plans for satisfying the exercise requirements of §254.42. You must designate a location where you keep the records of these exercises.	Vol. 2, § 10.2
254.30	Response plan revisions:	
254.30(a)	You must review your response plan at least every 2 years and submit all resulting modifications to the Regional Supervisor. If this review does not result in modifications, you must inform the Regional Supervisor in writing that there are not changes.	Vol. 1, § 1.6
254.30(b)	You must submit revisions to your plan for approval within 15 days whenever:	
254.30(b)(1)	A change occurs which significantly reduces your response capabilities.	Vol. 1, § 1.6
254.30(b)(2)	A significant change occurs in the worst case discharge scenario or in the type of oil being handled, stored, or transported at the facility.	Vol. 1, § 1.6
254.30(b)(3)	There is a change in the name(s) or capabilities of the oil spill removal organizations cited in the plan.	Vol. 1, § 1.6
254.30(b)(4)	There is a significant change to the Area Contingency Plan(s).	Vol. 1, § 1.6
254.30(c)	The Regional Supervisor may require that you resubmit your plan if their plan has become outdated or if numerous revisions have made its use difficult.	Vol. 1, § 1.6
254.30(d)	The Regional Supervisor will periodically review the equipment inventories of the OSROs to ensure that sufficient spill removal equipment is available to meet the cumulative needs of the owners and operators who cite these organizations in their plans.	Acknowledged
254.30(e)	The Regional Supervisor may require you to revise your plan if significant inadequacies are indicated by:	
254.30(e)(1)	Periodic reviews (described in paragraph (d) of this subsection).	Vol. 1, § 1.6
254.30(e)(2)	Information obtained during drills or actual spill response.	Vol. 1, § 1.6
254.30(e)(3)	Other relevant information the Regional Supervisor obtained.	Vol. 1, § 1.6

Table 7-2. Cross-References to California Regulations

CCR TITLE 14, DIVISION 1, SUBDIVISION 4		Location in DCOR OSRP
Section	**Requirement**	
816.02	Plan Format	
816.02(a)	Response Manual A simplified response manual suitable for on-scene use in the event of a spill which summarizes key notification information and the initial response actions specified in the plan …	Vol. 1, Core Oil Spill Response Plan
816.02(a)(1)	The response manual is a subset of the information provided in the principal volume of the plan	Vol. 1, Core Oil Spill Response Plan
816.02(a)(2)	The information contained in the response manual shall be sufficient to direct on-scene response personnel through the first 24 hours of a response.	Vol. 1, Core Oil Spill Response Plan
816.02(b)	Principal Volume of the Plan	
816.02(b)(1)	The principal volume shall include all the required information including a summary of the conclusions of all studies, calculations and analyses.	Vol. 1, Core Oil Spill Response Plan Vol. 2, Supplement to Core Oil Spill Response Plan
816.02(b)(2)	The principal volume of each plan shall be organized to facilitate access to information and shall include:	
816.02(b)(2)(A)	A detailed table of contents with chapters arranged, to the extent possible, in the same order in which the requirement for the information appears in Sections 817.02 and 817.03 for marine facilities, or Sections 818.02 and 818.03 for vessels;	Vol. 1 Table of Contents Vol. 2 Table of Contents
816.02(b)(2)(B)	a system of numbered chapters, sections and appendices;	Vol. 1 Table of Contents Vol. 2 Table of Contents
816.02(b)(2)(C)	index tabs for locating plan chapters;	Vol. 1 & Vol. 2
816.02(b)(2)(D)	a log sheet placed in front of the plan for recording all amendments and updates;	Vol. 1, Table1-9
816.02(b)(2)(E)	amendments and updates are consecutively numbered and dated	Vol. 1, Table1-9
816.02(b)(3)	Each plan shall be submitted in an 8 ½ by 11 inch binder, in a loose-leaf format to allow replacement of chapter and appendix pages without requiring replacement of the entire plan.	See plan volumes
816.02(b)(4)	If a fleet, blanket or regional plan is used, the principal volume of the plan shall include all the information generic to all the marine facilities or vessels covered by the plan.	Vol. 1
816.02(c)	Appendices	
816.02(c)(1)	Vessel-Specific Appendix If a fleet or regional plan is used, each plan must include an appendix fore each vessel covered by the plan.	N/A
816.02(c)(2)	Marine Facility -Specific Appendix If a blanket or regional plan is used, each plan must include an appendix for each marine facility covered by the plan. The facility-specific appendix must address all the required information unique to the facility.	Vol. 1, Appendix A
816.02(c)(3)	Geographic Appendix to Vessel Plans	N/A
816.02(d)	Substitute Plans If a substitute plan is submitted, such as a plan prepared for the State Lands Commission, the Minerals Management Service, or the United States Coast Guard, the following must also be submitted:	

Table 7-2. Cross-References to California Regulations

CCR TITLE 14, DIVISION 1, SUBDIVISION 4		Location in DCOR OSRP
Section	**Requirement**	
816.02(d)(1)	a listing of all the elements of the individual vessel or marine facility's contingency plan that will be replaced by elements in the substitute plan, with an index specifying the location of the required elements, by regulation section, within the substitute plan;	Vol. 2, Table 7-2
816.02(d)(2)	any required prevention or response element not included in the substitute plan must be submitted as an appendix to the substitute plan; and	Integrated Plan. See Vol. 2, Table 7-2
816.02(d)(3)	a copy of the response manual required by this section	Vol. 1
816.02(e)	Wallet-Sized Card/Posted Information The immediate response and notification information shall be summarized on a wallet-sized card, or on a poster located in a conspicuous place. This information shall include the names and telephone numbers of the individuals, agencies, and organizations who must be immediately notified when a spill occurs. A copy of the card or poster shall be submitted with the plan.	Poster in Front Pocket of Vol. 1, Core Plan
817.02(a)	Introductory Material	
817.02(a)(1)	Each plan shall provide the following information:	
817.02(a)(1)(A)	name and address of the marine facility, and mailing address if different;	Facility Information Summary: Vol. 2, p. xi
817.02(a)(1)(B)	name, address and phone number of the owner and/or operator of the marine facility;	Facility Information Summary: Vol. 2, p. xi
817.02(a)(1)(C)	name, address and phone number of the person to whom correspondence should be sent;	Facility Information Summary: Vol. 2, p. xi
817.02(a)(1)(D)	a certification statement signed under penalty of perjury by an executive within the plan holder's management who is authorized to fully implement the oil spill contingency plan, who shall review the plan for accuracy, feasibility, and executability.	Vol. 2, § 8.1
817.02(a)(1)(E)	A copy of the California Certificate of Financial Responsibility (COFR) for the marine facility shall be included in the front of the plan.	Vol. 2, § 8.3
817.02(a)(2)	Each plan shall identify a Qualified Individual	Vol. 1, § 2.2.1
817.02(a)(3)	Each plan shall provide the name, address, telephone number and facsimile number of an agent for service of process designated to receive legal documents on behalf of the plan holder. Such agent shall be located in California.	Facility Information Summary: Vol. 2, p. xi
817.02(a)(4)	Each plan shall contain a copy of the contract or other approved means … verifying that any oil spill response organization(s) that are named in the plan will provide the requisite equipment and personnel in the event of an oil spill.	Vol. 2, § 9
817.02(b)	Marine Facility Description	
817.02(b)(1)	Each plan shall describe the marine facility's design and operations with specific attention to those areas from which an oil spill could occur. This description shall include, at a minimum, the following information:	
817.02(b)(1)(A)	a piping and instrumentation diagram, and a tank diagram including the location of pumps, valves, vents and lines….	Vol. 1, Appendix A

Table 7-2. Cross-References to California Regulations

CCR TITLE 14, DIVISION 1, SUBDIVISION 4		Location in DCOR OSRP
Section	**Requirement**	
817.02(b)(1)(B)	a description of the types, physical properties, health and safety hazards, maximum storage or handling capacity and current normal daily throughput of oil handled. A material safety data sheet (MSDS) or equivalent will meet this requirement …	Vol. 1, § 1.5.6 and Appendix D
817.02(b)(1)(C)	a description of the normal procedures for transferring oil from or to a pipeline, tanker, barge or other vessel, or storage tank, and the amount, frequency and duration of oil transfers;	N/A
817.02(b)(1)(D)	the marine facility's normal hours of operation; and	Facility Information Summary: Vol. 2, p. xi
817.02(b)(1)(E)	for an exploration or production facility, a complete description of those sections of the oil or gas lease field, gathering lines, storage tanks and processing facilities, under the control of the owner/operator, a spill from which could reasonably be expected to impact the marine waters of California.	N/A
817.02(b)(2)	Each plan shall describe the marine facility site and surrounding area, including, where appropriate, the following information (note: where maps/diagrams are required they may be submitted (in addition to the original hard copy) on electronic media, in Portable Document Format [PDF]):	
817.02(b)(2)(A)	a map and description of site topography, including the drainage and diversion plans for the marine facility, such as sewers, storm drains, catchment, containment or diversion systems or basins, oil/water separators, and all watercourses into which surface runoff from the facility drains;	Vol. 1, Appendix A
817.02(b)(2)(B)	vicinity maps showing any vehicular or rail access to the marine facility, pipelines to and from the facility, nearby residential, commercial or other populous areas, and access to private land necessary to respond to a spill;	Vol. 1, Figures 1-1, 1-2, & 1-3, and Appendix A
817.02(b)(2)(C)	seasonal hydrographic and climatic conditions including wind speed and direction, air and water temperature, local tides, prevailing currents, and any local visibility problems;	Vol. 2, § 12.1
817.02(b)(2)(D)	physical geographic features, including ocean depths and local bathymetry; beach types and other geological conditions…..	Vol. 1, Figures 1-1, 1-2, & 1-3, and ESI Maps in § 5.8
817.02(b)(2)(E)	logistical resources within the geographic area covered by the plan, including facilities for fire services, medical services, and accommodations for spill response personnel; and	Vol. 1, §§ 4.8, 6.4, 6.5, 6.6, & 6.7
817.02(b)(2)(F)	shoreline access area, including piers, docks, boat launches and equipment and personnel staging areas.	Vol. 1, §§ 5.3.2 & 5.8
817.02(c)	Prevention Measures Each plan shall address prevention measures in order to reduce the possibility of an oil spill occurring as a result of the operation of the marine facility. The prevention measures must eliminate or mitigate all the hazards identified in the Risk and Hazard Analysis.	
817.02(c)(1)	Risk and Hazard Analysis	
817.02(c)(1)(A)	Each plan shall provide a history of the significant spills from the marine facility for either the 10 year period prior to the date of plan submittal, or from the date the facility became operational, whichever is shorter.	Vol. 2, § 12.5

Table 7-2. Cross-References to California Regulations

CCR TITLE 14, DIVISION 1, SUBDIVISION 4		Location in DCOR OSRP
Section	**Requirement**	
817.02(c)(1)(A)1.	a written description of sites, equipment or operations with a history of oil spills;	Vol. 2, § 12.5
817.02(c)(1)(A)2.	the cause and size of any historical spill. The causes to be considered shall include such factors as operator error, or a failure of the system or subsystem from which the spill occurred;	Vol. 2, § 12.5
817.02(c)(1)(A)3.	a brief summary of the impact of the spills; and	Vol. 2, § 12.5
817.02(c)(1)(A)4.	a description of the corrective actions taken in response to any and all spills included in the historical data.	Vol. 2, § 12.5
817.02(c)(1)(B)	Each facility shall conduct a Risk and Hazard Analysis to identify the hazards associated with the operation of the facility, including: operator error, the use of the facility by various types of vessels, equipment failure, and external events likely to cause an oil spill.	Vol. 2, §§ 12.6 & 12.7
817.02(c)(1)(C)	The chosen hazard evaluation method must be conducted in accordance with the guidelines established by the American Institute of Chemical Engineers as published in the "Guidelines for Hazard Evaluation Procedures", second edition, copyright 1992, prepared for The Center For Chemical Process Safety.	Vol. 2, §§ 12.6 & 12.7
817.02(c)(1)(C)1.	The plan must include information regarding the expertise of the working group that develops the analysis.	Vol. 2, §§ 12.6.2.1, 12.6.3.1, 12.7.1.1
817.02(c)(1)(C)2.	The plan must include information that demonstrates to the Administrator that the analysis is appropriate to the marine facility and adequate according to the published procedures referenced in (C) above.	Vol. 2, Sections 12.6 & 12.7
817.02(c)(1)(D)	Each plan shall include a summary of the results of the Risk and Hazard Analysis. The summary shall include the following:	Vol. 2, §§ 12.6 & 12.7
817.02(c)(1)(D)1.	the hazard analysis method used, and a statement that the analysis is specific to the marine facility;	Vol. 2, §§ 12.6 & 12.7
817.02(c)(1)(D)2.	an inventory of the hazards identified, including the hazards that resulted in the historical spills;	Vol. 2, §§ 12.6.2.3, 12.6.3.3, & 12.7.2
817.02(c)(1)(D)3.	an analysis of the potential oil discharges, including the size, frequency, cause, duration and location of all significant spills from the marine facility as a result of each major type of hazard identified;	Vol. 2, §§ 11, 12.6.2, 12.6.3, & 12.7.2
817.02(c)(1)(D)4.	the control measures that will be used to mitigate or eliminate the hazards identified; and	Vol. 2, §§ 12.6.2.4, 12.6.3.4, & 12.7.3
817.02(c)(1)(D)5.	a prediction of the potential oil spills that might still be expected to occur after any mitigating controls have been implemented.	Vol. 2, §§ 12.6.2.4, 12.6.3.4, 12.7.2, & 12.8
817.02(c)(1)(E)	All supporting documentation used to develop the Risk and Hazard Analysis summary shall be made available to the Administrator upon request.	Acknowledged
817.02(c)(2)	Off-Site Consequence Analysis: For the significant hazards identified in the Risk and Hazard Analysis required under this section, the marine facility shall conduct a trajectory analysis to determine the Off-Site Consequences of an oil spill.	Vol. 2, § 12.2

Table 7-2. Cross-References to California Regulations

CCR TITLE 14, DIVISION 1, SUBDIVISION 4		Location in DCOR OSRP
Section	**Requirement**	
817.02(c)(2)(A)	a trajectory, or series of trajectories (for pipelines, etc.), to determine the potential direction, rate of flow and time of travel of the reasonable worst case oil spill from the facility to marine waters and to the shorelines, including shallow-water environments, that may be impacted.	Vol. 2, § 12.2
817.02(c)(2)(B)	for each probable shoreline that may be impacted, a discussion of the general toxicity effects and persistence of the discharge based on type of product; the effect of seasonal conditions on sensitivity of these areas; and an identification of which areas will be given priority attention if a spill occurs.	Vol. 1, § 5.3 Vol. 2, §§ 12.3, & 12.4
817.02(c)(3)	Resources at Risk from Oil Spills: Based on the trajectory of the spilled oil as determined in the Off-Site Consequence Analysis, each plan shall identify the environmentally, economically and culturally sensitive areas that may be impacted.	Vol. 1, §§ 5.3.2 and 5.8 Vol. 2, § 12.3
817.02(c)(3)(A)	The map of environmentally sensitive areas shall include:	
817.02(c)(3)(A)1.	shoreline types and associated marine resources;	Vol. 1, § 5.8
817.02(c)(3)(A)2.	the presence of migratory and resident marine bird and mammal migration routes, and breeding, nursery, stopover, haul-out, and population concentration areas by season;	Vol. 1, § 5.8
817.02(c)(3)(A)3.	the presence of aquatic resources including marine fish, invertebrates, and plants including important spawning, migratory, nursery and foraging areas;	Vol. 1, § 5.8
817.02(c)(3)(A)4.	the presence of natural terrestrial animal and plant resources in marine-associated environments;	Vol. 1, § 5.8
817.02(c)(3)(A)5.	the presence of state or federally-listed rare, threatened or endangered species; and	Vol. 1, § 5.8
817.02(c)(3)(A)6.	the presence of commercial and recreational fisheries including aquaculture sites, kelp leases and other harvest areas.	Vol. 1, § 5.8
817.02(c)(3)(B)	The map of the locations of economically and culturally sensitive areas shall include:	See following
817.02(c)(3)(B)1.	public beaches, parks, marinas, boat ramps and diving areas;	Vol. 1, § 5.8
817.02(c)(3)(B)2.	industrial and drinking water intakes, power plants, salt pond intakes, and other similarly situated underwater structures;	Vol. 1, § 5.8
817.02(c)(3)(B)3.	off-shore oil and gas leases and associated drilling/production platforms;	Vol. 1, Appendix A
817.02(c)(3)(B)4.	known historical and archaeological sites. If a plan holder has access to any confidential archaeological information, it must be submitted as a separate item and will be handled as confidential information as outlined in Subsection 816.01(d);	Vol. 1, § 5.8
817.02(c)(3)(B)5.	areas of cultural or economic significance to Native Americans; and	Vol. 1, § 5.8
817.02(c)(3)(B)6.	the major waterways and vessel traffic patterns that are likely to be impacted.	Vol. 1, § 5.8
817.02(c)(4)	Required Prevention Measures Each marine facility shall take all prevention measures to reduce or mitigate the potential hazards identified in the Risk and Hazard Analysis, and the potential impact those hazards pose to the resources at risk. Each plan shall include the following:	

Table 7-2. Cross-References to California Regulations

CCR TITLE 14, DIVISION 1, SUBDIVISION 4		Location in DCOR OSRP
Section	**Requirement**	
817.02(c)(4)(A)	schedules, methods and procedures for testing, maintaining and inspecting pipelines and other structures within or appurtenant to the marine facility that contain or handle oil which may impact marine waters if a failure occurs;	Vol. 1, § 5.2
817.02(c)(4)(B)	methods to reduce spills during transfer and storage operations, including overfill prevention measures and immediate spill containment provisions;	Vol. 2, § 12.9
817.02(c)(4)(C)	procedures to assure clear communication among all the parties involved during transfer operations; and	Vol. 2, § 12.9
817.02(c)(4)(D)	protection measures for areas within the marine facility that are subject to flooding.	N/A
817.02(c)(4)(E)	the plan holder shall provide additional relevant information to the Administrator upon request.	Acknowledged
817.02(c)(5)	Other Prevention Measures Each plan shall also identify and include a summary of those prevention measures required by other Federal, State or local agencies or which are currently in place and being utilized by marine facility personnel. The list of existing prevention measures shall include, but not be limited to, the following:	
817.02(c)(5)(A)	a description of any "risk reduction incentive programs" in place at the marine facility;	Vol. 2, § 12.2
817.02(c)(5)(B)	a description of leak detection and spill prevention safety and alarm systems, devices, equipment or procedures;	Vol. 1, § 5.2
817.02(c)(5)(C)	a description of automatic controls that can be operated remotely or pre-programmed to control normal processes, safety shutdown and emergency shutdown;	Vol. 1, § 5.2
817.02(c)(5)(D)	a description of the alcohol and drug testing programs for key personnel;	Vol. 2, § 12.3
817.02(c)(5)(E)	any additional prevention measures taken or contemplated to minimize the possibility of oil spills; and	Vol. 2, § 12.10
817.02(c)(5)(F)	a description of any fencing, locks, lighting and other security or surveillance measures necessary to reduce vandalism, sabotage, or unauthorized entries.	Vol. 1, § 4.6 Vol. 2, § 12.10.4
817.02(c)(5)(G)	The plan holder shall provide additional relevant information to the Administrator upon request.	Acknowledged
817.02(d)	On-Water Containment and Recovery Each plan must provide for the on-water containment and recovery of all potential oil spills from the marine facility. To determine the amount of containment and recovery capability that must be available, each facility must calculate a Response Planning Vol. as outlined below:	
817.02(d)(1)	Reasonable Worst Case Spill To calculate the Response Planning Volume, it is first necessary to determine the reasonable worst case spill for each marine facility, as follows:	Vol. 2, § 11

Table 7-2. Cross-References to California Regulations

CCR TITLE 14, DIVISION 1, SUBDIVISION 4		Location in DCOR OSRP
Section	**Requirement**	
817.02(d)(1)(A)	For marine facilities ….	
817.02(d)(1)(A)1.	the loss of the entire capacity of all in-line, break-out and portable storage tank(s) needed for the continuous operation of the pipelines used for the purposes of handling or transporting oil, taking into account the existence of volume limiting factors including, but not limited to, line pressure, gravity, and the availability and location of the emergency shut-off controls; plus	Vol. 2, § 11
817.02(d)(1)(A)2.	the amount of additional spillage that could reasonably be expected to enter California marine waters during emergency shut-off, transfer or pumping operations if a hose(s) or pipeline(s) ruptures or becomes disconnected, or if some other incident occurs which could cause or increase the size of an oil spill. ….	Vol. 2, § 11
817.02(d)(1)(A)3.	The Administrator has the discretion to accept that a marine facility can operate only a limited number of the total pipelines at a time. In those circumstances, the reasonable worst case spill volume shall include the drainage volume from the piping normally not in use, in addition to the volume determined in (1) and (2) , above.	Acknowledged
817.02(d)(1)(B)	For on-shore pipelines not subject to Chapter 6.67 (commencing with Section 25270) or Chapter 6.7 (commencing with Section 25280) of Division 20, Health and Safety Code, the largest volume in barrels, of the following:	
817.02(d)(1)(B)1.	The pipeline's maximum release time in hours (i.e., the time between pipeline rupture and discovery), plus the maximum shut-down response time in hours (based on historic discharge data or in the absence of such historic data, the operator's best estimate), multiplied by the maximum flow rate expressed in barrels per hour (based on the maximum daily capacity of the pipeline), plus the largest line drainage volume after shutdown of the line section(s) in the response zone expressed in barrels.	Vol. 2, § 11
817.02(d)(1)(B)2.	The largest foreseeable discharge for the line section(s) within a response zone, expressed in barrels, based on the maximum historic discharge, if one exists, adjusted for any subsequent corrective or preventive action taken; or	Vol. 2, § 11
817.02(d)(1)(B)3.	If the response zone contains one or more break-out tanks, the capacity of the single largest tank or battery of tanks within a single secondary containment system, adjusted for the capacity or size of the secondary containment system, expressed in barrels.	N/A
817.02(d)(1)(C)	For offshore platforms (except those drilling a new well which are addressed in Subsection [D]):	
817.02(d)(1)(C)1.	total tank storage and flow line capacity; plus	Vol. 2, § 11
817.02(d)(1)(C)2.	that portion of the total linefill 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; plus	Vol. 2, § 11
817.02(d)(1)(C)3.	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 … plus	Vol. 2, § 11

Table 7-2. Cross-References to California Regulations

CCR TITLE 14, DIVISION 1, SUBDIVISION 4		Location in DCOR OSRP
Section	**Requirement**	
817.02(d)(1)(C)4.	the daily production volume for seven days from an uncontrolled blowout of the highest capacity well associated with the marine facility.	Vol. 2, § 11
817.02(d)(1)(D)	For offshore platforms with active well drilling: The owner/operator of a platform at which a new well is being drilled must submit a proposed reasonable worst case oil spill calculation for platform operations to the Administrator. The proposed worst case discharge is the daily volume possible for seven days from an uncontrolled blowout taking into consideration any known reservoir characteristics.	Acknowledged
817.02(d)(1)(E)	For offshore pipelines, the largest volume in barrels of the following calculation:	
817.02(d)(1)(E)1.	The pipeline system leak detection time, plus the shutdown response time, multiplied by the highest measured oil flow rate over the preceding 12-month period.… This volume should be calculated by taking into account the effects of hydrostatic pressure, gravity, frictional wall forces, length of pipeline segment, tie-ins with other pipelines, and other factors.	Vol. 2, § 11
817.02(d)(1)(F)	The calculations, and such parameters as flow rates, linefill capacities and emergency shutoff times, that are used to determine a marine facility's reasonable worst case spill shall be submitted as part of the plan. The Administrator may review and test these parameters as part of the drill conducted in accordance with Subsection 816.03(b).	Vol. 2, § 11
817.02(d)(2)	Persistence and Emulsification Factors	
817.02(d)(2)(A)	The reasonable worst case spill volume is then multiplied by a persistence factor relative to the most persistent type of oil that may be spilled.	Vol. 2, § 11.4
817.02(d)(2)(B)	Emulsification Factors The volume determined from the calculation in Subparagraph (A) is then multiplied by one of the following emulsification factors, again, based on the type of oil.	Vol. 2, § 11.4
817.02(d)(2)(C)	Response Planning Volume The total determined by the above calculation is a Response Planning Volume.	Vol. 2, § 11.4
817.02(d)(2)(C)1.	The Response Planning Volume to be used to determine the amount of Response Equipment and Services that must be under contract shall be the greater of the amount determined in Subsection 817.02(d)(1) and (2), or the Planning Volume for On-water Recovery calculated for the nearshore/inland environment in the marine facility's federal response plan pursuant to 33 CFR 154, Appendix C, Section 7….	Vol. 2, § 11.4
817.02(d)(2)(C)2.	All calculations used to determine the Response Planning Volume shall be included in the plan.	Vol. 2, §§ 11 & 13.1.1

Table 7-2. Cross-References to California Regulations

CCR TITLE 14, DIVISION 1, SUBDIVISION 4		Location in DCOR OSRP
Section	**Requirement**	
817.02(d)(3)	Response Capability Standards The equipment and personnel necessary to address the Response Planning Volume is brought to the scene of the spill over a period of time. The timeframes are dependent upon the risk zone in which the marine facility is located and are specified in the tables in this section. The standards set forth in this section are only planning standards....	Acknowledged
817.02(d)(3)(A)	Total Equipment Required	
817.02(d)(3)(A)1.	The total amount of on-water containment and recovery equipment and services required shall be the lesser of the amount necessary to address the Response Planning Volume … or the Daily Recovery Rate.	Vol. 2, § 13.1.1 & Table 13-1
817.02(d)(3)(A)2.	The amount of equipment and the timeframes for delivery are specified in Subsection 817.02(d)(3)(B).	Vol. 2, § 13.1.1 & Table 13-2
817.02(d)(3)(A)3.	The timeframes for equipment delivery and deployment as specified in this subsection do not take into account the time required to conduct a health and safety assessment of the site.	Acknowledged
817.02(d)(3)(B)	Daily Recovery Rate	
817.02(d)(3)(B)1.	Facilities located in High-Volume Ports	N/A
817.02(d)(3)(B)2.	Facility/Transfer Areas and the Santa Barbara Channel Area	Vol. 2, Table 13.2
817.02(d)(3)(C)	Sufficient containment equipment shall be brought to the scene of the spill to address daily recovery rates as designated in Section 817.02(d)(3)(B).	Vol. 2, Table 13.3
817.02(d)(3)(D)	The standards set forth in Subsection 817.02(d)(3)(B) were increased by a factor of 25% on July 1, 1997….	Vol. 2, Table 13.2
817.02(d)(3)(E)	The standards set forth in Subsection 817.02(d)(3)(B) will be increased by a factor of 25% on July 1, 2001 and again July 1, 2005.	Vol. 2, Table 13.2
817.02(d)(3)(F)	Transfer Operations….	N/A
817.02(d)(4)	Non-Cascadable Equipment Each plan shall nominate a certain amount of the recovery equipment identified in Section 817.02(d)(3) as non-cascadable, which may not be moved outside of the risk zone in which the marine facility is located. …The total amount required will be the lesser of the amount necessary to address the Response Planning Volume, or the amount specified as follows:	Vol. 1, Appendix C
817.02(d)(4)(A)	High Volume Ports and the Santa Barbara Channel Area: 10,000 barrels per day of recovery capability that can be mobilized within two hours of notification and on-scene within 12 hours.	Vol. 2, Table 13-3
817.02(d)(4)(B)	Facility/Transfer Areas: 2,500 barrels per day of recovery capability that can be mobilized within two hours and on-scene within 12 hours.	Vol. 2, Table 13-3
817.02(d)(5)	On-Water Response Equipment and Services	
817.02(d)(5)(A)	Each plan shall demonstrate that the marine facility has under contract or other approved means (as defined in Section 815.05(b) of this subchapter), access to all the necessary equipment and services to comply with the Response Capability Standards established in Subsection 817.02(d)(3).	Vol. 2, § 9 & Table 13-3

Table 7-2. Cross-References to California Regulations

CCR TITLE 14, DIVISION 1, SUBDIVISION 4		Location in DCOR OSRP
Section	**Requirement**	
817.02(d)(5)(B)	The equipment identified for a specific area must be appropriate for use in that area given the limitations of the geography, bathymetry, water depths, tides, currents and other local environmental conditions…. [T]he equipment identified shall also be appropriate for use on the type of oil identified. The following information must be provided:	Vol. 1, Appendix C
817.02(d)(5)(B)1.	the location, inventory, and ownership of the equipment…	Vol. 1, Appendices C & F
817.02(d)(5)(B)2.	a complete inventory of any nonmechanical response equipment and supplies including the type and toxicity of each chemical agent, with procedures for storage and maintenance;	Vol. 1, Appendices C & F
817.02(d)(5)(B)3.	the type and capacity of storage and transfer equipment matched to the skimming capacity of the recovery systems;	Vol. 1, Appendix C
817.02(d)(5)(B)4.	the manufacturer's rated capacities and the operational characteristics for each major item of oil recovery equipment;	Vol. 1, Appendix C
817.02(d)(5)(B)5.	the derated capacity (as defined in Chapter 1, Section 790 of this subdivision) for each major piece of on-water recovery equipment listed;	Vol. 2, Table 13-3
817.02(d)(5)(B)6.	vessels designated for oil recovery operations, including skimmer vessels, and vessels designed to tow and deploy boom, and availability of shallow draft vessels;	Vol. 1, Appendix C & Vol. 2, Table 13-3
817.02(d)(5)(B)7.	vessels of opportunity reasonably available for oil spill recovery operations, including availability of shallow draft vessels, procedures to equip vessels, inventory all equipment, and train personnel;	Vol. 1, Appendix C
817.02(d)(5)(B)8.	pumping and transfer equipment for transferring oil from damaged structures, or from undamaged structures which might be at risk of discharging additional oil;	Vol. 1, Appendix C
817.02(d)(5)(B)9.	Procedures for storage, maintenance, inspection and testing of spill response equipment under the immediate control of the operator;	Vol. 2, § 10.2
817.02(d)(5)(B)10.	Sufficient equipment to track the movement of discharged oil, including aerial surveillance sufficient to direct skimming operations.	Vol. 1, § 5.5.2 & Appendix C, Table C-1
817.02(d)(5)(C)	each plan shall describe the personnel available to respond to an oil spill including:	
817.02(d)(5)(C)1.	A list by job category including a job description for each type of spill response position needed as indicated in the spill response organization scheme;	Vol. 1, § 2 Vol. 1, Appendix B
817.02(d)(5)(C)2.	A match between personnel by job category, and the equipment proposed for use (including equipment appropriate for shallow-water environments);	N/A
817.02(d)(5)(C)3.	Sufficient personnel to maintain a response effort of at least 14 days.	Vol. 1, § 2 Vol. 1, Appendix C
817.02(d)(5)(D)	a list of the marine facility's spill management personnel and their spill response qualifications including a discussion of spill response training and experience, regulatory awareness and compliance and supervision.	Vol. 1, § 2 Vol. 2, § 10

Table 7-2. Cross-References to California Regulations

CCR TITLE 14, DIVISION 1, SUBDIVISION 4		Location in DCOR OSRP
Section	**Requirement**	
817.02(d)(5)(E)	Each plan shall describe procedures for transport of required equipment, personnel and other resources to a spill site. The description shall include plans for alternative procedures during adverse environmental conditions. Adverse environmental conditions to be considered shall include:	Vol. 1, §§ 6.2 & 6.4
817.02(d)(5)(E)1.	adverse weather;	Vol. 2, § 13.4
817.02(d)(5)(E)2.	sea states, tides, winds and currents;	Vol. 2, § 13.4
817.02(d)(5)(E)3.	presence of debris or other obstacles; and	Vol. 2, § 13.4
817.02(d)(5)(E)4.	any other known environmental condition that could restrict response efforts.	Vol. 2, § 13.4
817.02(d)(5)(F)	Any equipment and personnel identified in the plan must be available for response. Any necessary maintenance for the equipment, vacation periods for response personnel, or other eventuality must be taken into account in relying upon these resources.	Acknowledged
817.02(d)(5)(F)1.	The equipment owner must notify the Administrator when major equipment is removed from service for a period of 24 hours or more for maintenance or repair. Major equipment is that which, if removed, would affect timely implementation of the plan….	Acknowledged
817.02(d)(5)(F)2.	The equipment owner must demonstrate that backup equipment may be provided from the owner's own inventory, or may be made available from another responder.	Acknowledged
817.02(d)(5)(F)3.	A plan shall remain valid during the time equipment has been removed from service for maintenance or repair if the Administrator has approved such movement.	Acknowledged
817.02(d)(5)(G)	Group 5 oil	N/A
817.02(d)(6)	On-Water Response and Recovery Strategies Utilizing the equipment that must be under contract, each plan shall describe methods to contain spilled oil and remove it from the environment.	Vol. 1, § 5
817.02(d)(6)(A)	methods for on-water containment and removal of oil in open-water environments;	Vol. 1, §§ 5.6.1.1 & 5.6.2
817.02(d)(6)(B)	methods for adapting on-water containment and removal strategies in order to address the spill as it moves to the close-to-shore environment;	Vol. 1, §§ 5.6.1 & 5.6.2
817.02(d)(6)(C)	The plan holder may propose the use of dispersants, in-situ burning, coagulants, bioremediants, or other chemical agents or non-mechanical methods for response operations;	
817.02(d)(6)(C)1.	methods of deployment or application;	Vol. 1, Appendices F & G
817.02(d)(6)(C)2.	a description of the specific mechanisms in place to assess the environmental consequences of the chemical agent;	Vol. 1, Appendices F & G
817.02(d)(6)(C)3.	identification of all permits, approvals or authorizations needed to allow the use of chemical agents or non-mechanical methods, and the timeline for obtaining them;	Vol. 1, Appendices F & G
817.02(d)(6)(C)4.	a plan for protecting resources at risk, areas of public concern and the public from any adverse effects of the chemical agents used;	Vol. 1, Appendices F & G

Table 7-2. Cross-References to California Regulations

CCR TITLE 14, DIVISION 1, SUBDIVISION 4		Location in DCOR OSRP
Section	**Requirement**	
817.02(d)(6)(C)5.	the projected efficacy of each type of non-mechanical method proposed for use taking into account the type of spilled material and the projected environmental conditions of the potential spill site.	Vol. 1, Appendices F & G
817.02(d)(6)(C)6.	Upon request, the plan holder shall provide any test results known to the plan holder which assess the environmental impacts of applying these agents in the marine environment.	Acknowledged
817.02(d)(6)(D)	methods for tracking the movement of the discharged oil; and	Vol. 1, Appendix E & § 5.1.3
817.02(d)(6)(E)	the location of the weather stations to be used for observations of winds, currents and other data at the time of a spill that may assist in making real-time projections of spill movement.	Vol. 1, Appendix E
817.02(e)	Shoreline Protection and Clean-up Each plan must provide for shoreline protection and clean-up of all potential spills from the marine facility. The protection strategies and the amount of equipment necessary are outlined below:	
817.02(e)(1)	Shoreline Response Planning Volume	Vol. 2, §§ 11 & 13
817.02(e)(1)(A)	Persistence Factor	Vol. 2, § 13.1.1
817.02(e)(1)(B)	Emulsification Factors	Vol. 2, § 13.1.1
817.02(e)(1)(C)	Total Shoreline Equipment Required	
817.02(e)(1)(C)1.	The Response Planning Volume to be used to determine the amount of Response Equipment and Services that must be under contract shall be the greater of the amount determined in Subsection 817.02(e)(1), or the adjusted Planning Volume for onshore recovery calculated for nearshore/inland environment in the facility's federal response plan pursuant to 33 CFR 154, Appendix C, Section 7.	Vol. 1, Appendix C Vol. 2, §§ 11.4, 13.1.1, &13.1.2
817.02(e)(1)(C)2.	The calculations used to determine the Response Planning Volume shall be included in the plan.	Vol. 2, § 12.1 Table 12-1
817.02(e)(2)	Shoreline Protection Equipment and Services Each plan must identify, and ensure availability through a contract or other approved means (as defined in Section 815.05(b) of this subchapter), an oil spill response organization capable of effecting shoreline protection strategies…. The specific areas where equipment and services must be available for use shall be identified in the Off-Site Consequence Analysis.	Vol. 1, Appendix C Vol. 2, §§ 9 & 13.1
817.02(e)(2)(A)	The equipment identified for a specific area must be appropriate for use in that area given the limitations of the bathymetry, geomorphology, shoreline types and other local environmental conditions.	Vol. 1, Appendix C Vol. 2, § 13.1
817.02(e)(2)(A)1.	the amounts of all protective booming, shallow-draft vessels, and shoreline clean-up equipment necessary to address the specific types of shorelines that may be impacted;	Vol. 1, Appendix C Vol. 2, § 13.1
817.02(e)(2)(A)2.	the location, inventory and ownership of the equipment to be used to fulfill the response requirements; and	Vol. 1, Appendix C
817.02(e)(2)(A)3.	the procedures for storage, maintenance, inspection and testing of spill response equipment under the immediate control of the operator.	Vol. 2, § 10.2

Table 7-2. Cross-References to California Regulations

CCR TITLE 14, DIVISION 1, SUBDIVISION 4		Location in DCOR OSRP
Section	**Requirement**	
817.02(e)(2)(B)	Each plan shall describe the personnel available to respond to an oil spill, including:	
817.02(e)(2)(B)1.	a list by job category including a job description for each type of spill response position needed as indicated in the spill response organization scheme;	Vol. 1, Appendix B
817.02(e)(2)(B)2.	a match between personnel, by job category and the equipment proposed for use (including equipment appropriate for shallow-water environments), including the plan for mobilization of such personnel; and	Vol. 1, § 2.2.3
817.02(e)(2)(B)3.	sufficient personnel to maintain a response effort of at least 14 days.	Vol. 1, § 2.2.3
817.02(e)(2)(C)	Any equipment and personnel identified to meet the planning standard requirements must be available for response. Any necessary maintenance for the equipment, vacation periods for response personnel, or other eventuality must be taken into account in relying upon these resources.	Acknowledged
817.02(e)(2)(C)1.	the equipment owner must notify the Administrator when major equipment is removed from service for a period of 24 hours or more for maintenance or repair. Major equipment is that which, if removed, would affect timely implementation of the plan….	Acknowledged
817.02(e)(2)(C)2.	the equipment owner must demonstrate that backup equipment may be provided during the time the primary response equipment is out of service.	Acknowledged
817.02(e)(3)	(Reserved)	
817.02(e)(4)	Shoreline Protection and Clean-Up Strategies	
817.02(e)(4)(A)	Utilizing the equipment that must be under contract, each plan shall describe the methods that will be used to contain spilled oil and remove it from the environment.	
817.02(e)(4)(A)1.	all shoreline protection procedures and oil diversion and pooling procedures for the close-to-shore environment.	Vol. 1, § 5.6.2.3
817.02(e)(4)(A)2.	methods for shoreside clean-up, including containment and removal of surface oil, subsurface oil and oiled debris and vegetation from all applicable shorelines, adjacent land and beach types.	Vol. 1, § 5.6.2.3
817.02(e)(4)(A)3.	measures to be taken to minimize damage to the environment from land operations during a spill response, such as impacts to sensitive shoreline habitat caused by heavy machinery or foot traffic.	Vol. 1, § 5.6.2.4
817.02(e)(4)(B)	Protection, response and clean-up strategies will be specific to the type of oil spilled, the expected spill sites as identified in the Off-Site Consequence Analysis, and the resources at risk at those spill sites.	Vol. 1, § 5.6.2.3 and Tables 5-4 & 5-7
817.02(e)(4)(C)	Each plan must utilize all the strategies appropriate to the potential impact sites.	Vol. 1, § 5.6.2.3 and Tables 5-4 & 5-7
817.02(f)	Response Procedures	
817.02(f)(1)	Each plan shall describe the organization of the marine facility's spill response system and management team…. [T]he plan shall describe the method to be used to interface the plan holder's organization into the State Incident Command System…	Vol. 1, § 2.2
817.02(f)(1)(A)	The plan holder may utilize the procedures outlined in the appropriate Area Contingency Plan as a reference…	Acknowledged

Table 7-2. Cross-References to California Regulations

CCR TITLE 14, DIVISION 1, SUBDIVISION 4		Location in DCOR OSRP
Section	**Requirement**	
817.02(f)(1)(B)	Each plan shall describe the organization of the plan holder's public information office.	Vol. 1, Appendix B.2.1.3
817.02(f)(1)(C)	Each plan shall describe the plan holder's safety program as it relates to an oil spill incident and the method by which their Safety Officer will be integrated into the State Incident Command System.	Vol. 1, § 4.4.1 and Appendix B.2.1.5
817.02(f)(2)	Each plan shall describe the process to establish sites needed for spill response operations, including location or location criteria for:	
817.02(f)(2)(A)	A central command post sufficient to accommodate the State Incident Command or Unified Command as well as the plan holder's response organization;	Vol. 1, § 4.3
817.02(f)(2)(B)	a central communications post if located away from the command post; and	N/A
817.02(f)(2)(C)	equipment and personnel staging areas.	Vol. 1, §§ 6.4 & 6.5, and Appendix B
817.02(f)(3)	Each plan shall include a checklist, flowchart or decision tree depicting the procession of each major stage of spill response operations from spill discovery to completion of clean up.	Vol. 1, § 5.3.1 and Figures 5-1, 5-2, 5-3, and 5-4
817.02(f)(4)	Each plan shall describe how the plan holder will provide emergency services before the arrival of local, state or federal authorities on the scene, including:	
817.02(f)(4)(A)	procedures to control fires and explosions, and to rescue people or property threatened by fire or explosion;	Vol. 1, §§ 4.8 & 5.1
817.02(f)(4)(B)	procedures for emergency medical treatment and first aid;	Vol. 1, §§ 4.4.1 & 4.8
817.02(f)(4)(C)	procedures to control ground, marine and air traffic which may interfere with spill response operations;	Vol. 1, § 6
817.02(f)(4)(D)	procedures to manage access to the spill response site and the designation of exclusion, decontamination and safe zones; and	Vol. 1, §§ 4.4.1.2 & 6
817.02(f)(4)(E)	procedures to provide the required personnel protective gear for responders.	Vol. 1, § 4.4.1
817.02(f)(5)	Each plan shall describe equipment and procedures to be used by marine facility personnel to minimize the magnitude of a spill and minimize structural damage which may increase the quantity of oil spilled.	
817.02(f)(5)(A)	Spill mitigation procedures shall include immediate containment strategies, methods to stop the spill at the source, methods to slow or stop leaks, and methods to achieve immediate emergency shutdown.	Vol. 1, § 5.2
817.02(f)(5)(B)	For spill mitigation procedures the plan shall include prioritized procedures for marine facility personnel including specific procedures to shut down affected operations. Responsibilities of facility personnel should be identified by job title.	Vol. 1, § 1.5.6
817.02(f)(5)(B)1.	failure of manifold and mechanical loading arm, other transfer equipment, or hoses, as appropriate;	Vol. 1, § 5.2
817.02(f)(5)(B)2.	tank overfill;	Vol. 1, § 5.2
817.02(f)(5)(B)3.	tank failure;	Vol. 1, § 5.2
817.02(f)(5)(B)4.	pipe rupture;	Vol. 1, § 5.2
817.02(f)(5)(B)5.	pipe leak, both under pressure and not under pressure, if applicable;	Vol. 1, § 5.2
817.02(f)(5)(B)6.	explosion and/or fire; and	Vol. 1, §§ 4.7, 4.8.2, & 5.2

Table 7-2. Cross-References to California Regulations

CCR TITLE 14, DIVISION 1, SUBDIVISION 4		Location in DCOR OSRP
Section	**Requirement**	
817.02(f)(5)(B)7.	other equipment failure (e.g., pumping system failure, relief valve failure, etc.).	Vol. 1, Section 5.2
817.02(f)(6)	Each plan shall detail the lines of communications between the responsible party, the Qualified Individual and the on-scene commanders, response teams, and local, state, and federal emergency and disaster responders, including:	
817.02(f)(6)(A)	communication procedures;	Vol. 1, §§ 3.1 & 6.3
817.02(f)(6)(B)	the communication function (e.g., ground-to-air) assigned to each channel or frequency used;	Vol. 1, § 6.3
817.02(f)(6)(C)	the maximum broadcast range for each channel or frequency used; and	Vol. 1, § 6.3
817.02(f)(6)(D)	redundant and back-up systems.	Vol. 1, § 6.3
817.02(f)(7)	Each plan shall provide for post-spill review, including methods to review both the effectiveness of the plan and the need for plan amendments.	Vol. 1, § 1.6
817.02(f)(7)(A)	The result of the review shall be forwarded to the Administrator within 90 days following the completion of the response and clean-up procedures.	Vol. 1, § 1.6
817.02(f)(7)(B)	The review shall be used by the Administrator only for the purpose of proposing future amendments to the contingency plan.	Acknowledged
817.02(f)(8)	Each plan shall describe the procedures to manage access to the spill response site, the designation of exclusion, decontamination and safe zones, and the decontamination of equipment and personnel during and after oil spill response operations, as required by the California Occupational Safety and Health Administration.	Vol. 1, § 4.4.1
817.02(f)(9)	Prior to beginning spill response operations and/or clean up activities, a Site Safety Plan must be completed.	Vol. 1, § 4.4.1.1
817.02(g)	Notification Procedures	
817.02(g)(1)	Each plan shall include a list of contacts to call in the event of a drill, threatened discharge of oil, or discharge of oil. The plan shall:	
817.02(g)(1)(A)	detail the procedures for reporting oil spills to all appropriate local, state, and federal agencies;	Vol. 1, § 3
817.02(g)(1)(B)	identify a central reporting office or individual who is responsible for initiating the notification process and is available on a 24-hour basis; and	Vol. 1, §§ 2.2 and 3.1.1
817.02(g)(1)(B)1.	the individual or office to be contacted	Vol. 1, § 2.2
817.02(g)(1)(B)2.	telephone number or other means of contact for any time of the day; and	Vol. 1, § 2.2
817.02(g)(1)(B)3.	an alternate contact in the event the individual is unavailable.	Vol. 1, § 2.2
817.02(g)(1)(C)	establish a clear order of priority for notification.	Vol. 1, § 3
817.02(g)(2)	Immediate Notification Nothing in this section shall be construed as requiring notification before response.	Acknowledged
817.02(g)(2)(A)	Each plan shall include a procedure for contacting the primary OSRO, or other initial response resources if an OSRO is not being used, within 30 minutes of the discovery of a discharge of oil or threatened discharge of oil.	Vol. 1, § 3.1.1.5

Table 7-2. Cross-References to California Regulations

CCR TITLE 14, DIVISION 1, SUBDIVISION 4		Location in DCOR OSRP
Section	**Requirement**	
817.02(g)(2)(B)	Each plan shall include a procedure that ensures that the owner/operator or his/her designee will initiate contact with the Qualified Individual, the California Governor's Office of Emergency Services and the National Response Center immediately, but no longer than 30 minutes, after discovery of a discharge of oil or threatened discharge of oil.	Vol. 1, § 3.1
817.02(g)(2)(C)	All phone numbers necessary to complete the immediate notification procedures must be included in the response manual.	Vol. 1, § 2.2.1, & Table 2-2, and § 3, Tables 3-1 & 3-2
817.02(g)(3)	Each plan shall identify a call-out procedure to acquire the resources necessary to address spills that cannot be addressed by the equipment that the owner/operator is required to have under contract. Procedures must allow for initiation of the call-out within 24 hours of the incident and must begin as soon as a determination has been made that additional resources are necessary.	Vol. 1, § 3.1.1.5
817.02(g)(4)	Each plan shall provide a checklist of the information to be reported in the notification procedures, including but not limited to:	Vol. 1, § 3, Figure 3-1
817.02(g)(4)(A)	marine facility name and location;	Vol. 1, § 3, Figure 3-1
817.02(g)(4)(B)	date and time of the incident;	Vol. 1, § 3, Figure 3-1
817.02(g)(4)(C)	the cause and location of the spill;	Vol. 1, § 3, Figure 3-1
817.02(g)(4)(D)	an estimate of the volume of oil spilled and the volume at immediate risk of spillage;	Vol. 1, § 3, Figure 3-1
817.02(g)(4)(E)	the type of oil spilled, and any inhalation hazards or explosive vapor hazards, if known;	Vol. 1, § 3, Figure 3-1
817.02(g)(4)(F)	the size and appearance of the slick;	Vol. 1, § 3, Figure 3-1
817.02(g)(4)(G)	prevailing weather and sea conditions;	Vol. 1, § 3, Figure 3-1
817.02(g)(4)(H)	actions taken or planned by personnel on scene;	Vol. 1, § 3, Figure 3-1
817.02(g)(4)(I)	current condition of the marine facility;	Vol. 1, § 3, Figure 3-1
817.02(g)(4)(J)	injuries and fatalities; and	Vol. 1, § 3, Figure 3-1
817.02(g)(4)(K)	any other information as appropriate.	Vol. 1, § 3, Figure 3-1
817.02(g)(5)	Reporting of a spill as required by Subsection 817.02(g)(2) shall not be delayed solely to gather all the information required by Subsection 817.02(g)(4).	Vol. 1, § 3.1.2. & Figure 3-1
817.02(g)(6)	Updated spill volume information included in the Incident Action Plan developed through the Unified Command will meet the requirements of this subsection.	Vol. 1, § 3.1.2 (box) & Figure 3-1
817.02(h)	Temporary Storage and Waste Management	
817.02(h)(1)	Each plan shall identify sufficient temporary storage for all recovered oil or all oily waste, and identify facilities that would be able to accept the recovered oil or oily waste for recycling or other means of waste management. Sufficient storage shall be no less than two times the required Daily Recovery Rate as determined in Section 817.02(d)(3)(B).	Vol. 1, § 6.2.1.1 Vol. 2, § 13.1.3
817.02(h)(2)	Each plan shall identify the party that shall maintain responsibility for recovered oil and oily waste for the purposes of temporary storage.	Vol. 1, § 6.2

Table 7-2. Cross-References to California Regulations

CCR TITLE 14, DIVISION 1, SUBDIVISION 4		Location in DCOR OSRP
Section	**Requirement**	
817.02(h)(3)	Each plan shall describe site criteria and methods used for temporary storage of recovered oil and oily wastes generated during response and clean-up operations, including sites available within the marine facility, or near the spill area.	Vol. 1, § 6.2.2
817.02(h)(4)	Each plan shall identify all applicable permits, and all federal, state and local agencies responsible for issuing those permits for transit, temporary storage and ultimate waste management of all wastes likely to result from an oil spill.	Vol. 1, § 6.2
817.02(h)(5)	Each plan shall include information which could expedite the state approval process for the use of temporary waste storage sites, including a list of appropriate contacts and a description of procedures to be followed for each approval process.	Vol. 1, § 6.2.1.1
817.02(i)	Oiled Wildlife Care Requirements Each plan shall describe how oiled wildlife care will be provided by one of the following approved means:	
817.02(i)(1)	Utilize the California Oiled Wildlife Care Network (OWCN) to meet oiled wildlife care requirements; or	Vol. 1, § 5.7.3
817.02(i)(2)	describe procedures that clearly outline how oiled wildlife care will be provided. The equipment, facilities, and personnel necessary to implement these procedures must be identified and assured by contract for each Geographic Area covered by the plan. Standards for wildlife care must comply with all applicable State and federal laws.	Vol. 1, § 5.7.3 and Tables 5-9, 5-10, & 5-11
817.02(j)	Training	
817.02(j)(1)	Each plan shall provide that all appropriate personnel employed by the marine facility shall receive training in the use and operation of oil spill response and clean-up equipment. The plan shall describe:	
817.02(j)(1)(A)	the type and frequency of training that each individual in a spill response position receives to achieve the level of qualification demanded by their job description;	Vol. 2, § 10
817.02(j)(1)(B)	the procedures, if any, to train and use volunteers or other additional personnel in spill response operations as necessary for the size of the spill.	N/A
817.02(j)(2)	Each plan shall describe the type and frequency of personnel training on methods to reduce operational risks. The description of the training shall include, if applicable, the following:	Vol. 2, § 10.1
817.02(j)(2)(A)	any established training objectives that address potential spill sources and causes that were identified in the Risk and Hazard Analysis.	N/A
817.02(j)(2)(B)	the means of achieving any established training objectives, such as:	
817.02(j)(2)(B)1	training programs for the positions involved with the various aspects of the marine facility's operation that could result in a spill (e.g., position responsible for facility inspections or transfers);	Vol. 2, § 9, Table 9-1
817.02(j)(2)(B)2	a training schedule, including adequate frequency, (e.g., initial training upon hire and annual refresher training) and type of training (workshops, classroom, videotape, on-the-job training, etc.) for each position trained, by job classification;	Vol. 2, § 10.1, Table 10-1
817.02(j)(2)(C)	any licenses, certifications or other prerequisites required to hold particular jobs.	N/A

Table 7-2. Cross-References to California Regulations

CCR TITLE 14, DIVISION 1, SUBDIVISION 4		Location in DCOR OSRP
Section	**Requirement**	
817.02(j)(2)(D)	A plan holder whose facility is subject to and in compliance with State Lands Commission training regulations under Public Resources Code Section 8755, shall be considered in compliance with the training provisions of this subsection.	N/A
817.02(j)(3)	Each plan shall provide for safety training as required by state and federal health and safety laws for all personnel likely to be engaged in oil spill response, including a program for training non-permanent responders such as volunteers or temporary help.	Vol. 1, § 4.4.1 Vol. 2, § 10.1
817.02(j)(4)	The marine facility owner/operator shall ensure that training records are maintained for 3 years. All such documentation must be made available to the Administrator upon request.	Vol. 2, § 10.1
817.02(k)	Drills and Exercises - Type and Frequency	
817.02(k)(1)	A marine facility owner/operator shall conduct drills and exercises as necessary to ensure that the elements of the plan will function in an emergency. Each plan shall describe the facility's drill and exercise program, including how the program assures shoreline protection strategies (for all environmentally sensitive sites identified as potentially impacted in the facility's Off-site Consequence Analysis) will be exercised, as outlined in Section 820.01(f) of this subdivision. The following are the necessary drill and exercise frequencies for all facilities, as consistent with the National Preparedness for Response Exercise Program (PREP):	Vol. 2, § 10.2
817.02(k)(1)(A)	a quarterly drill of the notification procedures for marine facility personnel, the Qualified Individual, the OSROs, and the spill management team;	Vol. 2, § 10.2
817.02(k)(1)(B)	a semiannual exercise to test the deployment of marine facility-owned equipment; and	Vol. 2, § 10.2
817.02(k)(1)(C)	a yearly tabletop exercise of the marine facility's spill management team.	Vol. 2, § 10.2
817.02(k)(2)	Training sessions may constitute creditable drills and exercises if all requirements in Subsection 820.01 (b) through (f) are met.	Acknowledged
817.02(k)(3)	A marine facility owner/operator shall ensure that all of the response resources identified in the plan participate in equipment deployment exercises at least once every three years.	Acknowledged
817.02(k)(4)	Drills shall be designed to exercise either individual components of the plan or the entire response plan. Such drills, individually or in combination, shall ensure that the entire plan is exercised at least once every three years.	Vol. 2, § 10.2
817.02(k)(5)	The marine facility owner/operator shall ensure that records sufficient to document a drill or exercise are maintained for three years following the completion of the drill or exercise. All such documentation must be made available to the Administrator upon request.	Vol. 2, § 10.2

Table 7-3. Cross-References to DOT Regulations

49 CFR Part 194		Location in DCOR OSRP
Section	**Requirement**	
Subpart B		
194.101	Operators required to submit plans.	
194.101(a)	Except as provided in paragraph (b) of this section, unless OPS grants a request from an Federal On-Scene Coordinator (FOSC) to require an operator of a pipeline in paragraph (b) to submit a response plan, each operator of an onshore pipeline facility shall prepare and submit a response plan to PHMSA as provided in § 194.119. A pipeline which does not meet the criteria for significant and substantial harm as defined in § 194.103(c) and is not eligible for an exception under § 194.101(b), can be expected to cause substantial harm. Operators of substantial harm pipeline facilities must prepare and submit plans to PHMSA for review.	Acknowledged
194.101(b)	*Exception.* An operator need not submit a response plan for:	N/A
194.103	Significant and substantial harm; operator's statement	
194.103(a)	Each operator shall submit a statement with its response plan, as required by §§194.107 and 194.113, identifying which line sections in a response zone can be expected to cause significant and substantial harm to the environment in the event of a discharge of oil into or on the navigable waters or adjoining shorelines.	Vol. 2, § 8.2
194.103(b)	If an operator expects a line section in a response zone to cause significant and substantial harm, then the entire response zone must, for the purpose of response plan review and approval, be treated as if it is expected to cause significant and substantial harm….	Acknowledged
194.103(c)	A line section can be expected to cause significant and substantial harm to the environment in the event of a discharge of oil into or on the navigable waters or adjoining shorelines if … the line section –	Acknowledged
194.103(c)(1)	Has experienced a release greater than 1,000 barrels within the previous five years,	N/A
194.103(c)(2)	Has experienced two or more reportable releases, as defined in §195.50, within the previous five years,	N/A
194.103(c)(3)	Containing any electrical resistance welded pipe, manufactured prior to 1970, operates at a maximum operating pressure established under §195.406 that corresponds to a stress level greater than 50 percent of the specified minimum yield strength of the pipe,	N/A
194.103(c)(4)	Is located within a 5-mile radius of potentially affected public drinking water intakes and could reasonably be expected to reach public drinking water intakes, or	Acknowledged
194.103(c)(5)	Is located within a 1-mile radius of potentially affected environmentally sensitive areas, and could reasonably be expected to reach these areas.	Acknowledged
194.105	Worst case discharge	
194.105(a)	Each operator shall determine the worst case discharge for each of its response zones and provide the methodology, including calculations, used to arrive at the volume.	Vol. 2, § 11

Table 7-3. Cross-References to DOT Regulations

49 CFR Part 194		Location in DCOR OSRP
Section	**Requirement**	
194.105(b)	The worst case discharge is the largest volume, in barrels, of the following:	
194.105(b)(1)	The pipeline's maximum release time in hours, plus the maximum shutdown response time in hours (based on historic discharge data or in the absence of such historic data, the operator's best estimate), multiplied by the maximum flow rate expressed in barrels per hour (based on the maximum daily capacity of the pipeline), plus the largest line drainage volume in the response zone expressed in barrels; or	Vol. 2, § 11
194.105(b)(2)	The largest foreseeable discharge for the line section(s) within a response zone, expressed in barrels, based on the maximum historic discharge….	Vol. 2, § 11
194.105(b)(3)	If the response zone contains one or more breakout tanks …	N/A; but see Vol. 2, § 11.2.4
194.107	General response plan requirements	
194.107(a)	Each response plan must include procedures and a list of resources for responding, to the maximum extent practicable, to a worst case discharge….	Vol. 1, § 5 & Appendix C; Vol. 2, § 13
194.107(b)	An operator must certify in the response plan that it reviewed the NCP and each applicable ACP and that its response plan is consistent with the NCP and each applicable ACP as follows:	Vol. 2, § 8.2
194.107(b)(1)	As a minimum to be consistent with the NCP a facility response plan must:	
194.107(b)(1)(i)	Demonstrate an operator's clear understanding of the function of the Federal response structure, including procedures to notify the National Response Center reflecting the relationship between the operator's response organization's role and the Federal On Scene Coordinator's role in pollution response;	Vol. 1, §§ 3.1.2 & 4.2
194.107(b)(1)(ii)	Establish provisions to ensure the protection of safety at the response site;	Vol. 1, § 4.4.1
194.107(b)(1)(iii)	Identify the procedures to obtain any required Federal and State permissions for using alternative response strategies such as in-situ burning and dispersants as provided for in the applicable ACPs;	Vol. 1, Appendix F & Appendix G
194.107(b)(2)	As a minimum, to be consistent with the applicable ACP the plan must:	
194.107(b)(2)(i)	Address the removal of a worst case discharge and the mitigation or prevention of a substantial threat of a worst case discharge;	Vol. 2, §§ 11 & 13
194.107(b)(2)(ii)	Identify environmentally and economically sensitive areas;	Vol. 1, § 5.2.3, & Table 5-4
194.107(b)(2)(iii)	Describe the responsibilities of the operator and of Federal, State and local agencies in removing a discharge and in mitigating or preventing a substantial threat of a discharge;	Vol. 1, §§ 4.2 & 3.2
194.107(b)(2)(iv)	Establish the procedures for obtaining an expedited decision on use of dispersants or other chemicals.	Vol. 1, Appendices F & G
194.107(c)	Each response plan must be consistent with the National Contingency Plan (NCP) (40 CFR Part 300) and each applicable Area Contingency Plan (ACP). An operator must certify that its response plan is consistent with the existing NCP and each existing applicable ACP.	Vol. 2, § 8.2

Table 7-3. Cross-References to DOT Regulations

49 CFR Part 194		Location in DCOR OSRP
Section	**Requirement**	
194.107(c)	Each response plan must include:	
194.107(c)(1)	A core plan consisting of—	
194.107(c)(1)(i)	An information summary as required by 194.113,	Vol. 1, page xi
194.107(c)(1)(ii)	Immediate notification procedures	Vol. 1, § 3.1.1
194.107(c)(1)(iii)	Spill detection and mitigation procedures	Vol. 1, §§ 5.2 & 5.6
194.107(c)(1)(iv)	The name, address, and telephone number of the oil spill response organization, if appropriate.	Vol. 1, § 3.1.1.5 & Appendix C
194.107(c)(1)(v)	Response activities and response resources.	Vol. 1, § 5 & Appendix C
194.107(c)(1)(vi)	Names and telephone numbers of Federal, state and local agencies which the operator expects to have pollution control responsibilities or support,	Vol. 1, §§ 3.1.2 & 3.2
194.107(c)(1)(vii)	Training procedures,	Vol. 2, § 10.1
194.107(c)(1)(viii)	Equipment testing,	Vol. 2, § 10.2
194.107(c)(1)(ix)	Drill program—an operator will satisfy the requirement for a drill program by following the National Preparedness for Response Exercise Program (PREP) guidelines.	Vol. 2, § 10.2
194.107(c)(1)(x)	Plan review and update procedures; and	Vol. 1, § 1.6
194.107(c)(2)	An appendix for each response zone…	N/A
194.107(c)(3)	A description of the operator's response management system including the functional areas of finance, logistics, operations, planning, and command. The plan must demonstrate that the operator's response management system uses common terminology and has a manageable span of control, a clearly defined chain of command, and sufficient trained personnel to fill each position.	Vol. 1, § 2.2.3
194.109	Submission of state response plans.	
194.109(a)	In lieu of submitting a response plan required by §194.103, an operator may submit a response plan that complies with a state law or regulation, if the state law or regulation requires a plan that provides equivalent or greater spill protection than a plan required by this part.	Acknowledged
194.109(b)	A plan submitted under this section must:	
194.109(b)(1)	Have an information summary required by §194.113;	Vol. 1, page xi
194.109(b)(2)	List the names or titles and 24- hour telephone numbers of the qualified individual(s) and at least one alternate qualified individual(s);	Vol. 1, § 3.1.1.3
194.109(b)(3)	Ensure through contract or other approved means the necessary private personnel and equipment to respond to a worst case discharge or substantial threat of such a discharge.	Vol. 1, Appendix C Vol. 2, §§ 8 & 12
194.111	Response plan retention.	
194.111(a)	Each operator shall maintain relevant portions of its response plan at the operator's headquarters and at other locations from which response activities may be conducted, for example, in field offices, supervisors' vehicles, or spill response trailers.	Vol. 1, § 1.6
194.111(b)	Each operator shall provide a copy of its response plan to each qualified individual.	Vol. 1, § 1.6

Table 7-3. Cross-References to DOT Regulations

<table>
<tr><th colspan="2">49 CFR Part 194</th><th rowspan="2">Location in DCOR OSRP</th></tr>
<tr><th>Section</th><th>Requirement</th></tr>
<tr><td>194.113</td><td colspan="2">Information summary.</td></tr>
<tr><td>194.113(a)</td><td colspan="2">The information summary for the core plan, required by §194.107 must include:</td></tr>
<tr><td>194.113(a)(1)</td><td>The name and address of the operator; and</td><td>Facility Info. Summary Vol. 1, page xi</td></tr>
<tr><td>194.113(a)(2)</td><td>For each response zone which contains one or more pipeline sections that meet the criteria for determining significant and substantial harm as described in §194.103, a listing and description of the response zones, including county(s) and state(s).</td><td>Facility Info. Summary Vol. 1, page xi</td></tr>
<tr><td>194.113(b)</td><td colspan="2">The information summary for the response zone appendix, required in §194.107 must include:</td></tr>
<tr><td>194.113(b)(1)</td><td>The information summary for the core plan;</td><td>Facility Info. Summary Vol. 1, page xi;</td></tr>
<tr><td>194.113(b)(2)</td><td>The names or titles and 24-hour telephone numbers of the qualified individual(s) and at least one alternate qualified individual(s);</td><td>Facility Info. Summary Vol. 1, page xi; & § 2.2.1</td></tr>
<tr><td>194.113(b)(3)</td><td>The description of the response zone, including county(s) and state(s), for those zones in which a worst case discharge could cause substantial harm to the environment;</td><td>Facility Info. Summary Vol. 1, page xi; § 1.5.2; & Append. A</td></tr>
<tr><td>194.113(b)(4)</td><td>A list of line sections for each pipeline contained in the response zone, identified by milepost or survey station number, or other operator designation;</td><td>Vol. 1, Appendix A</td></tr>
<tr><td>194.113(b)(5)</td><td>The basis for the operator's determination of significant and substantial harm;</td><td>Vol. 2, § 8.2</td></tr>
<tr><td>194.113(b)(6)</td><td>The type of oil and volume of worst case discharge.</td><td>Vol. 1, § 1.5.6 & Appendix D; Vol. 2, § 11</td></tr>
<tr><td>194.115</td><td colspan="2">Response resources.</td></tr>
<tr><td>194.115(a)</td><td>Each operator shall identify and ensure, by contract or other approved means, the resources necessary to remove, to the maximum extent practicable, a worst case discharge and to mitigate or prevent a substantial threat of a worst case discharge.</td><td>Vol. 1, Appendix C; Vol. 2, § 9</td></tr>
<tr><td>194.115(b)</td><td>An operator shall identify in the response plan the response resources which are available to respond within the time specified, after discovery of a worst case discharge, or to mitigate the substantial threat of such a discharge as follows:
<table>
<tr><th></th><th>Tier 1</th><th>Tier 2</th><th>Tier 3</th></tr>
<tr><td>High volume area</td><td>6 hrs</td><td>30 hrs</td><td>54 hrs</td></tr>
<tr><td>All other areas</td><td>12 hrs</td><td>36 hrs</td><td>60 hrs</td></tr>
</table></td><td>Vol. 2, § 13.1</td></tr>
<tr><td>194.117</td><td colspan="2">Training.</td></tr>
<tr><td>194.117(a)</td><td colspan="2">Each operator shall conduct training to insure that:</td></tr>
<tr><td>194.117(a)(1)</td><td colspan="2">All personnel know –</td></tr>
<tr><td>194.117(a)(1)(i)</td><td>Their responsibilities under the response plan,</td><td>Vol. 2, § 10.1</td></tr>
<tr><td>194.117(a)(1)(ii)</td><td>The name and address of, and the procedure for contacting, the operator on a 24-hour basis,</td><td>Facility Info. Summary Vol. 1, page xi; & § 3.1.1.4</td></tr>
<tr><td>194.117(a)(1)(iii)</td><td>The name of, and procedures for contacting, the qualified individual on a 24-hour basis.</td><td>Vol. 1, § 2.2.1</td></tr>
<tr><td>194.117(a)(2)</td><td colspan="2">Reporting personnel know –</td></tr>
<tr><td>194.117(a)(2)(i)</td><td>The content and information summary of the response plan,</td><td>Vol. 2, § 10.1</td></tr>
</table>

Table 7-3. Cross-References to DOT Regulations

49 CFR Part 194		Location in DCOR OSRP
Section	**Requirement**	
194.117(a)(2)(ii)	The toll-free telephone number of the National Response Center; and	Vol. 1, § 3.1.3
194.117(a)(2)(iii)	The notification process; and	Vol. 1, § 3
194.117(a)(3)	Personnel engaged in response activities know –	
194.117(a)(3)(i)	The characteristics and hazards of the oil discharged;	Vol. 1, § 1.5.6 & Appendix D
194.117(a)(3)(ii)	The conditions that are likely to worsen emergencies, including the consequences of facility malfunctions or failures, and the appropriate corrective actions;	Vol. 2, § 13.4
194.117(a)(3)(iii)	The steps necessary to control any accidental discharge of oil and to minimize the potential for fire, explosion, toxicity, or environmental damage; and	Vol. 1, § 5
194.117(a)(3)(iv)	The proper fire fighting procedures and use of equipment, fire suits, and breathing apparatus.	Vol. 1, § 4.8.2
194.117(b)	Each operator shall maintain a training record for each individual that has been trained as required by this section. These records must be maintained in the following manner as long as the individual is assigned duties under the response plan:	
194.117(b)(1)	Records for operator personnel must be maintained at the operator's headquarters; and	Vol. 2, §§ 10.1 & 10.2
194.117(b)(2)	Records for personnel engaged in response, other than operator personnel, shall be maintained as determined by the operator.	Vol. 2, § 10
194.117(c)	Nothing in this section relieves an operator from the responsibility to ensure that all response personnel are trained to meet the Occupational Health and Safety Administration (OSHA) standards for emergency response operations in 29 CFR 1910.120, including volunteers or casual laborers employed during a response who are subject to those standards pursuant to 40 CFR part 311.	Acknowledged
194.119	Submission and approval procedures.	
194.119(a)	Each operator shall submit two copies of the response plan required by this part. Copies of the response plan shall be submitted to: Pipeline Response Plans Officer, Pipeline and Hazadous Material Safety Administraion, Department of Transportation, 400 Seventh Street SW., Washington, DC 20590-0001. Note: Submission of plans in electronic format is preferred.	Acknowledged
194.119(b)	If PHMSA determines that a response plan requiring approval does not meet all of the requirements of this part, PHMSA shall notify the operator of any alleged deficiencies, and to provide the operator an opportunity to respond, including the opportunity for an informal conference, on any proposed plan revisions and an opportunity to correct any deficiencies.	Acknowledged
194.119(c)	An operator who disagrees with the PHMSA determination that a plan contains alleged deficiencies may petition PHMSA for reconsideration within 30 days from the date of receipt of PHMSA's notice….	Acknowledged
194.119(d)	For response zones of pipelines described in § 194.103(c) OPS will approve the response plan if OPS determines that the response plan meets all requirements of this part. OPS may consult with the U.S. Environmental Protection Agency (EPA) or the U.S. Coast Guard (USCG)….	Acknowledged

Table 7-3. Cross-References to DOT Regulations

49 CFR Part 194		Location in DCOR OSRP
Section	**Requirement**	
194.119(e)	If OPS has not approved a response plan for a pipeline described in § 194.103(c), the operator may submit a certification to OPS that the operator has obtained, through contract or other approved means…	Acknowledged
194.119(f)	If OPS receives a request from a FOSC to review a response plan, OPS may require an operator to provide a copy of the response plan to the FOSC….	Acknowledged
194.121	Response plan review and update procedures.	
194.121(a)	Each operator shall update its response plan to address new or different operating conditions or information. In addition, each operator shall review its response plan in full at least every 5 years from the date of the last submission or the last approval as follows:	Vol. 1, § 1.6
194.121(a)(2)	For substantial harm plans, an operator shall resubmit its response plan to OPS every 5 years from the last submission date.	Vol. 1, § 1.6
194.121(a)(2)	For significant and substantial harm plans, an operator shall resubmit every 5 years from the last approval date.	Vol. 1, § 1.6
194.121(b)	If a new or different operating condition or information would substantially affect the implementation of a response plan, the operator must immediately modify its response plan to address such a change, and, within 30 days of making such change, submit the changes to PHMSA. Examples of changes in operating conditions that would cause a significant change in an operator's response plan are:	
194.121(b)(1)	An extension of the exiting pipeline or construction of a new pipeline in a response zone not covered by the previously approved plan;	Vol. 1, § 1.6
194.121(b)(2)	Relocation or replacement of the pipeline in a way that substantially affects the information included in the response plan, such as a change to the worst case discharge volume;	Vol. 1, § 1.6
194.121(b)(3)	The type of oil transported, if the type affects the required response resources, such as a change from crude oil to gasoline;	Vol. 1, § 1.6
194.121(b)(4)	The name of the oil spill removal organization,	Vol. 1, § 1.6
194.121(b)(5)	Emergency response procedures,	Vol. 1, § 1.6
194.121(b)(6)	The qualified individual,	Vol. 1, § 1.6
194.121(b)(7)	A change in the NCP or an ACP that has a significant impact on the equipment appropriate for response activities, and	Vol. 1, § 1.6
194.121(b)(8)	Any other information relating to circumstances that may affect full implementation of the plan.	Vol. 1, § 1.6
194.121(c)	If PHMSA determines that a change to a response plan does not meet the requirements of this part, PHMSA will notify the operator of any alleged deficiencies, and provide the operator an opportunity to respond, including an opportunity for an informal conference, to any proposed revisions and an opportunity to correct any deficiencies.	Acknowledged
191.121(d)	An operator who disagrees with a determination that proposed revisions to a plan are deficient may petition PHMSA for reconsideration within 30 days from the date of receipt of PHMSA notice….	Acknowledged

Table 7-3. Cross-References to DOT Regulations

49 CFR Part 194		Location in DCOR OSRP
Section	**Requirement**	
Appendix A—Guidelines for the Preparation of Response Plans		
	This appendix provides a recommended format for the preparation and submission of the response plans required by 49 CFR Part 194. Operators are referenced to the most current version of the guidance documents listed below. Although these documents contain guidance to assist in preparing response plans, their use is not mandatory:	
(1)	The ‘‘National Preparedness for Response Exercise Program (PREP) Guidelines’’…	Acknowledged
(2)	The National Response Team’s ‘‘Integrated Contingency Plan Guidance,’’…	Acknowledged
(3)	33 CFR Part 154, Appendix C, ‘‘Guidelines for Determining and Evaluating Required Response Resources for Facility Response Plans.’’	Acknowledged
Section 1	Information Summary	
1(a)	For the core plan:	
1(a)(1)	Name and address of operator	Vol. 1, page xi
1(a)(2)	For each response zone … a listing and description of the response zones including county and state	Vol.1. § 1.5
1(b)	For each response zone appendix:	N/A
1(b)(1)	Information summary for core plan	Vol. 1, page xi
1(b)(2)	Name and telephone number of qualified individual available on 24 hour basis	Vol. 1, page xii & § 2.2.1
1(b)(3)	Description of response zone including counties and state	Vol.1. § 1.5
1(b)(4)	List of line sections contained in the response zone	Vol.1. § 1.5
1(b)(5)	Basis for determination of significant and substantial harm	Vol., 2, § 8.2
1(b)(6)	Type of oil and volume of worst case discharge	Vol. 1, Appendix D Vol. 2, § 11.3
1(c)	The certification that the operator has obtained, through contract or other approved means, the necessary private personnel and equipment to respond … to a worst case discharge …	Vol. 2, § 8.2
Section 2	Notification Procedures	
2(a)	Notification requirements that apply in each area of operation … including applicable state and local requirements	Vol. 1, § 3
2(b)	A checklist of notifications the operator or QI is required to make under the response plan, listed in order of priority	Vol. 1, § 3
2(c)	Names of persons … to be notified of a discharge, indicating whether notification is to be performed by operating personnel or other personnel	Vol. 1, § 3; Figure 3.1; Tables 3-1 & 3-2
2(d)	Procedures for notifying Qualified Individuals	Vol. 1, § 3.1.1.3
2(e)	The primary and secondary communication methods by which notifications can be made	Vol. 1, §§ 3 & 6
2(f)	The information to be provided in the initial and each follow-up notification, including the following:	Vol. 1, § 3, Figure 3-1
2(f)(1)	Name of pipeline	Vol. 1, § 3, Figure 3-1
2(f)(2)	Time of discharge	Vol. 1, § 3, Figure 3-1
2(f)(3)	Location of discharge	Vol. 1, § 3, Figure 3-1
2(f)(4)	Name of oil involved	Vol. 1, § 3, Figure 3-1
2(f)(5)	Reason for discharge (e.g. material failure, excavation damage, corrosion)	Vol. 1, § 3, Figure 3-1

Table 7-3. Cross-References to DOT Regulations

49 CFR Part 194		Location in DCOR OSRP
Section	**Requirement**	
2(f)(6)	Estimated volume of oil discharge	Vol. 1, § 3, Figure 3-1
2(f)(7)	Weather conditions on scene	Vol. 1, § 3, Figure 3-1
2(f)(8)	Actions taken or planned by persons on scene	Vol. 1, § 3, Figure 3-1
Section 3	Spill Detection and On-Scene Spill Mitigation Procedures	
3(a)	Methods of initial discharge detection	Vol. 1, § 5.2
3(b)	Procedures, listed in order of priority, that personnel are required to follow in responding to a pipeline emergency to mitigate any damage from the pipeline	Vol. 1, § 5.3
3(c)	A list of equipment that may be needed in response activities on land and navigable waters including—	Vol. 1, § 5.6 & Appendix C
3(c)(1)	Transfer hoses and connection equipment	Vol. 1, Appendix C
3(c)(2)	Portable pumps and ancillary equipment	Vol. 1, Appendix C
3(c)(3)	Facilities available to transport and receive oil from a leaking pipeline	Vol. 1, § 6.2 & Appendix C
3(d)	Identification of the availability, location, and contact telephone numbers to obtain equipment for response activities on a 24-hour basis	Vol. 1, Appendix C
3(e)	Identification of personnel and their location, telephone numbers, and responsibilities for use of equipment in response activities on a 24-hour basis	Vol. 1, Appendix C
Section 4	Response Activities	
4(a)	Responsibilities of, and actions to be taken by, operating personnel to initiate and supervise response actions pending the arrival of the qualified individual or other response resources identified in the response plan	Vol. 1, §§ 2.2.2, 5.1, & 5.3
4(b)	The qualified individual's responsibilities and authority, including notification of the response resources identified in the response plan	Vol. 1, § 2.2.1
4(c)	Procedures for coordinating the actions of the operator or qualified individual with the action of the OSC responsible for monitoring or directing those actions	Vol. 1, §§ 4.1, 4.2, & 4.4
4(d)	Oil spill response organizations available, through contract or other approved means, to respond to a worst case discharge to the maximum extent practicable	Vol. 1, Appendix C; Vol. 2, § 9
4(e)	For each organization identified under paragraph (d) of this section, a listing of:	
4(e)(1)	Equipment and supplies available	Vol. 1, Appendix C
4(e)(2)	Trained personnel necessary to continue operation of the equipment and staff the oil spill removal organization for the first 7 days of the response	Vol. 1, Appendix C
Section 5	List of Contacts	
5(a)	A list of persons the plan requires the operator to contact	Vol. 1, § 3
5(b)	Qualified individuals for the operator's areas of operation	Vol. 1, §§ 2.2.1 & 3.1.1.3
5(c)	Applicable insurance representatives or surveyors for the operator's area of operation	Vol. 1, § 3.2.3
5(d)	Persons or organizations to notify for activation of response resources	Vol. 1, Appendix C

Table 7-3. Cross-References to DOT Regulations

49 CFR Part 194		Location in DCOR OSRP
Section	**Requirement**	
Section 6	Training Procedures	
	A description of the training procedures and programs of the operator	Vol. 2, § 10
Section 7	Drill Procedures	
7(a)	Announced and unannounced drills	Vol. 2, § 10.2
7(b)	The types of drills and their frequencies. For example….	Vol. 2, § 10.2
7(b)(1)	Manned pipeline emergency procedures and qualified individual notification drills conducted quarterly	Vol. 2, § 10.2
7(b)(2)	Drills involving emergency actions by assigned operating or maintenance personnel and notification of the qualified individual on pipeline facilities which are normally unmanned, conducted quarterly	Vol. 2, § 10.2
7(b)(3)	Shore-based spill management team tabletop drills conducted yearly	Vol. 2, § 10.2
7(b)(4)	Oil spill removal organization field equipment deployment drills conducted yearly	Vol. 2, § 10.2
7(b)(5)	A drill that exercises the entire response plan for each response zone … conducted at least once every three years	Vol. 2, § 10.2
Section 8	Response Plan Review and Update Procedures	
8(a)	Procedures to meet §194.121	Vol. 1, § 1.6
8(b)	Procedures to review the plan after a worst case discharge and to evaluate and record the plan's effectiveness.	Vol. 1, § 1.6
Section 9	Response Zone Appendices	N/A

This Oil Spill Response Plan satisfies the Facility Response Plan required of ROSF under SPCC.

Table 7-4. Cross-References to EPA FRP Regulations

40 CFR Part 112, Appendix F		Location in DCOR OSRP (re ROSF)
Section	**Requirement**	
1.0	Model Facility-Specific Response Plan–Prepare and submit to EPA Regional Office	Acknowledged
1.1	Emergency Response Action Plan	Vol. 1, Core Oil Spill Response Plan
1.2	Facility Information (ROSF)	Facility Information Summary: Vol. 1, p. xiii
1.3	Emergency Response Information	
1.3.1	Notification	Vol. 1, § 3
1.3.2	Response Equipment List	Vol. 1, Appendix C, Table C-1
1.3.3	Response Equipment Testing/Deployment	Vol. 2, § 10.2
1.3.4	Personnel: Company Contractors	Vol. 1, § 2.2.3, Table 2-2 Vol. 1, Appendix C
1.3.5	Evacuation Plans 1.3.5.1 Based on the analysis of the facility, as discussed elsewhere in the plan, a facility- wide evacuation plan shall be developed. In addition, plans to evacuate parts of the facility that are at a high risk of exposure in the event of a discharge or other release must be developed. Evacuation routes must be shown on a diagram of the facility (see section 1.9 of this appendix). When developing evacuation plans, consideration must be given to the following factors, as appropriate: (1) Location of stored materials; (2) Hazard imposed by discharged material; (3) Discharge flow direction; (4) Prevailing wind direction and speed; (5) Water currents, tides, or wave conditions (if applicable); (6) Arrival route of emergency response personnel and response equipment; (7) Evacuation routes; (8) Alternative routes of evacuation; (9) Transportation of injured personnel to nearest emergency medical facility; (10) Location of alarm/notification systems; (11) The need for a centralized check-in area for evacuation validation (roll call); (12) Selection of a mitigation command center; and (13) Location of shelter at the facility as an alternative to evacuation. 1.3.5.2 One resource that may be helpful to owners or operators in preparing this section of the response plan is The Handbook of Chemical Hazard Analysis Procedures by the Federal Emergency Management Agency (FEMA), Department of Transportation (DOT), and EPA. The Handbook of Chemical Hazard Analysis Procedures is available from: FEMA , Publication Office, 500 C. Street, S.W., Washington, DC 20472, (202) 646–3484. 1.3.5.3 As specified in § 112.20(h)(1)(vi), the facility owner or operator must reference existing community evacuation plans, as appropriate.	Vol. 1, § 5.9.2.2
1.3.6	Qualified Individual's Duties	Vol. 1, § 2.2.1, Table 2-1
1.4	Hazard Evaluation	
1.4.1	Hazard Identification The Tank and Surface Impoundment (SI) forms, or their equivalent, that are part of this section must be completed according to the directions below. (''Surface Impoundment'' means a facility or part of a facility which is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), which is designed to hold an accumulation of liquid wastes or wastes containing free liquids, and which	Vol. 2, § 12.5, § 12.6, Table 12-11

Table 7-4. Cross-References to EPA FRP Regulations

40 CFR Part 112, Appendix F		Location in DCOR OSRP (re ROSF)
Section	**Requirement**	
	is not an injection well or a seepage facility.) Similar worksheets, or their equivalent, must be developed for any other type of storage containers. (1) List each tank at the facility with a separate and distinct identifier. Begin aboveground tank identifiers with an ''A'' and belowground tank identifiers with a ''B'', or submit multiple sheets with the aboveground tanks and belowground tanks on separate sheets. (2) Use gallons for the maximum capacity of a tank; and use square feet for the area. (3) Using the appropriate identifiers and the following instructions, fill in the appropriate forms: (a) Tank or SI number—Using the aforementioned identifiers (A or B) or multiple reporting sheets, identify each tank or SI at the facility that stores oil or hazardous materials. (b) Substance Stored—For each tank or SI identified, record the material that is stored therein. If the tank or SI is used to store more than one material, list all of the stored materials. (c) Quantity Stored—For each material stored in each tank or SI, report the average volume of material stored on any given day. (d) Tank Type or Surface Area/Year—For each tank, report the type of tank (e.g., floating top), and the year the tank was originally installed. If the tank has been refabricated, the year that the latest refabrication was completed must be recorded in parentheses next to the year installed. For each SI, record the surface area of the impoundment and the year it went into service. (e) Maximum Capacity—Record the operational maximum capacity for each tank and SI. If the maximum capacity varies with the season, record the upper and lower limits. (f) Failure/Cause—Record the cause and date of any tank or SI failure which has resulted in a loss of tank or SI contents. (4) Using the numbers from the tank and SI forms, label a schematic drawing of the facility. This drawing shall be identical to any schematic drawings included in the SPCC Plan. (5) Using knowledge of the facility and its operations, describe the following in writing: (a) The loading and unloading of transportation vehicles that risk the discharge of oil or release of hazardous substances during transport processes. These operations may include loading and unloading of trucks, railroad cars, or vessels. Estimate the volume of material involved in transfer operations, if the exact volume cannot be determined. (b) Day-to-day operations that may present a risk of discharging oil or releasing a hazardous substance. These activities include scheduled venting, piping repair or replacement, valve maintenance, transfer of tank contents from one tank to another, etc. (not including transportation-related activities). Estimate the volume of material involved in these operations, if the exact volume cannot be determined. (c) The secondary containment volume associated with each tank and/or transfer point at the facility. The numbering scheme developed on the tables, or an equivalent system, must be used to identify each containment area. Capacities must be listed for each individual unit (tanks, slumps, drainage traps, and ponds), as well as the facility total. (d) Normal daily throughput for the facility and any effect on potential discharge volumes that a negative or positive change in that throughput may cause.	

Table 7-4. Cross-References to EPA FRP Regulations

40 CFR Part 112, Appendix F		Location in DCOR OSRP (re ROSF)
Section	**Requirement**	
1.4.2	Vulnerability Analysis The vulnerability analysis shall address the potential effects (i.e., to human health, property, or the environment) of an oil discharge. Attachment C–III to Appendix C to this part provides a method that owners or operators shall use to determine appropriate distances from the facility to fish and wildlife and sensitive environments. Owners or operators can use a comparable formula that is considered acceptable by the RA. If a comparable formula is used, documentation of the reliability and analytical soundness of the formula must be attached to the response plan cover sheet. This analysis must be prepared for each facility and, as appropriate, must discuss the vulnerability of: (1) Water intakes (drinking, cooling, or other); (2) Schools; (3) Medical facilities; (4) Residential areas; (5) Businesses; (6) Wetlands or other sensitive environments; 2 (7) Fish and wildlife; (8) Lakes and streams; (9) Endangered flora and fauna; (10) Recreational areas; (11) Transportation routes (air, land, and water); (12) Utilities; and (13) Other areas of economic importance (e.g., beaches, marinas) including terrestrially sensitive environments, aquatic environments, and unique habitats.	Vol. 2, § 12.6.4
1.4.3	Analysis of the Potential for an Oil Spill Each owner or operator shall analyze the probability of a discharge occurring at the facility. This analysis shall incorporate factors such as oil discharge history, horizontal range of a potential discharge, and vulnerability to natural disaster, and shall, as appropriate, incorporate other factors such as tank age. This analysis will provide information for developing discharge scenarios for a worst case discharge and small and medium discharges and aid in the development of techniques to reduce the size and frequency of discharges. The owner or operator may need to research the age of the tanks the oil discharge history at the facility.	Vol. 2, § 12.5.1
1.4.4	Facility Reportable Oil Spill History Briefly describe the facility's reportable oil spill 3 history for the entire life of the facility to the extent that such information is reasonably identifiable, including: (1) Date of discharge(s); (2) List of discharge causes; (3) Material(s) discharged; (4) Amount discharged in gallons; (5) Amount of discharge that reached navigable waters, if applicable; (6) Effectiveness and capacity of secondary containment; (7) Clean-up actions taken; (8) Steps taken to reduce possibility of recurrence; (9) Total oil storage capacity of the tank(s) or impoundment(s) from which the material discharged; (10) Enforcement actions; (11) Effectiveness of monitoring equipment; and (12) Description(s) of how each oil discharge was detected.	Vol. 2, § 12.5.1
1.5	Discharge Scenarios	
1.5.1	Small and Medium Discharges 1.5.1.1 To address multi-level planning requirements, the owner or operator must consider types of facility-specific discharge scenarios that may contribute to a small or medium discharge. The scenarios shall account for all the operations that take	Vol. 2, § 11.2.7

Table 7-4. Cross-References to EPA FRP Regulations

40 CFR Part 112, Appendix F		Location in DCOR OSRP (re ROSF)
Section	**Requirement**	
	place at the facility, including but not limited to: (1) Loading and unloading of surface transportation; (2) Facility maintenance; (3) Facility piping; (4) Pumping stations and sumps; (5) Oil storage tanks; (6) Vehicle refueling; and (7) Age and condition of facility and components. 1.5.1.2 The scenarios shall also consider factors that affect the response efforts required by the facility. These include but are not limited to: (1) Size of the discharge; (2) Proximity to downgradient wells, waterways, and drinking water intakes; (3) Proximity to fish and wildlife and sensitive environments; (4) Likelihood that the discharge will travel offsite (i.e., topography, drainage); (5) Location of the material discharged (i.e., on a concrete pad or directly on the soil); (6) Material discharged; (7) Weather or aquatic conditions (i.e., river flow); (8) Available remediation equipment; (9) Probability of a chain reaction of failures; and (10) Direction of discharge pathway.	
1.5.2	Worst Case Discharge	Vol. 2, § 11.2.4
1.6	Discharge Detection Systems	
1.6.1	Discharge Detection By Personnel In this section, facility owners or operators shall describe the procedures and personnel that will detect any discharge of oil or release of a hazardous substance. A thorough discussion of facility inspections must be included. In addition, a description of initial response actions shall be addressed. This section shall reference section 1.3.1 of the response plan for emergency response information.	Vol. 1, § 3.1, § 5.2 Vol. 2, § 10.3
1.6.2	Automated Discharge Detection In this section, facility owners or operators must describe any automated discharge detection equipment that the facility has in place. This section shall include a discussion of overfill alarms, secondary containment sensors, etc. A discussion of the plans to verify an automated alarm and the actions to be taken once verified must also be included.	Vol. 1, § 5.2 Vol. 2, 12.9.1
1.7	Plan Implementation	
1.7.1	Response Resources for Small, Medium, and Worst Case Spills	Vol. 1, § 5
1.7.2	Disposal Plans	Vol. 1, § 6.2
1.7.3	Containment and Drainage Planning	Vol. 1, § 5.6.1.2
1.8	Self-Inspection, Drills/Exercises, and Response Training	
1.8.1	Facility Self-Inspection Under 40 CFR 112.7(e), you must include the written procedures and records of inspections for each facility in the SPCC Plan. You must include the inspection records for each container, secondary containment, and item of response equipment at the facility. You must cross-reference the records of inspections inspections of each container and secondary containment required by 40 CFR 112.7(e) in the facility response plan. The inspection record of response equipment is a new requirement in this plan. Facility self-inspection requires two-steps: (1) a checklist of things to inspect; and (2) a method of recording the actual inspection and its findings. You must note the date of each inspection. You must keep facility response plan records for five years. You must keep SPCC records for three years.	Vol. 2, § 10.3

Table 7-4. Cross-References to EPA FRP Regulations

40 CFR Part 112, Appendix F		Location in DCOR OSRP (re ROSF)
Section	**Requirement**	
1.8.1.1	Tank Inspection The tank inspection checklist presented below has been included as guidance during inspections and monitoring. Similar requirements exist in 40 CFR part 112, subparts A through C. Duplicate information from the SPCC Plan may be photocopied and inserted in this section. The inspection checklist consists of the following items: TANK INSPECTION CHECKLIST 1. Check tanks for leaks, specifically looking for: A. drip marks; B. discoloration of tanks; C. puddles containing spilled or leaked material; D. corrosion; E. cracks; and F. localized dead vegetation. 2. Check foundation for: A. cracks; B. discoloration; C. puddles containing spilled or leaked material; D. settling; E. gaps between tank and foundation; and F. damage caused by vegetation roots. 3. Check piping for: A. droplets of stored material; B. discoloration; C. corrosion; D. bowing of pipe between supports; E. evidence of stored material seepage from valves or seals; and F. localized dead vegetation.	Vol. 2, §10.3
1.8.1.2	Response Equipment Inspection Using the Emergency Response Equipment List provided in section 1.3.2 of the response plan, describe each type of response equipment, checking for the following: Response Equipment Checklist 1. Inventory (item and quantity); 2. Storage location; 3. Accessibility (time to access and respond); 4. Operational status/condition; 5. Actual use/testing (last test date and frequency of testing); and 6. Shelf life (present age, expected replacement date). Please note any discrepancies between this list and the available response equipment.	Vol. 2, §10.3
1.8.1.3	Secondary Containment Inspection Inspect the secondary containment (as described in sections 1.4.1 and 1.7.2 of the response plan), checking the following: Secondary Containment Checklist 1. Dike or berm system. A. Level of precipitation in dike/available capacity; B. Operational status of drainage valves; C. Dike or berm permeability; D. Debris; E. Erosion; F. Permeability of the earthen floor of diked area; and G. Location/status of pipes, inlets, drainage beneath tanks, etc. 2. Secondary containment A. Cracks; B. Discoloration;	Vol. 2, §10.3

Table 7-4. Cross-References to EPA FRP Regulations

40 CFR Part 112, Appendix F		Location in DCOR OSRP (re ROSF)
Section	**Requirement**	
	C. Presence of spilled or leaked material (standing liquid); D. Corrosion; and E. Valve conditions. 3. Retention and drainage ponds A. Erosion; B. Available capacity; C. Presence of spilled or leaked material; D. Debris; and E. Stressed vegetation. The tank inspection checklist presented below has been included as guidance during inspections and monitoring. Similar requirements exist in 40 CFR part 112, subparts A through C. Similar requirements exist in 40 CFR 112.7(e). Duplicate information from the SPCC Plan may be photocopied and inserted in this section.	
1.8.2	Facility Drills/Exercises	Vol. 2, § 10.2
1.8.2.1	Qualified Individual Notification Drill Logs	Vol. 2, Fig. 10-4
1.8.2.2	Spill Management Team Tabletop Exercise Logs	Vol. 2, § 10.2
1.8.3	Response Training	Vol. 2, § 10.1
1.8.3.1	Personnel Response Training Logs	Vol. 2, § 10.1
1.8.3.2	Discharge Prevention Meeting Logs	Vol. 2, Fig. 10-1
1.9	Diagrams The facility-specific response plan shall include the following diagrams. Additional diagrams that would aid in the development of response plan sections may also be included. (1) The Site Plan Diagram shall, as appropriate, include and identify: (A) the entire facility to scale; (B) above and below ground bulk oil storage tanks; (C) the contents and capacities of bulk oil storage tanks; (D) the contents and capacity of drum oil storage areas; (E) the contents and capacities of surface impoundments; (F) process buildings; (G) transfer areas; (H) secondary containment systems (location and capacity); (I) structures where hazardous materials are stored or handled, including materials stored and capacity of storage; (J) location of communication and emergency response equipment; (K) location of electrical equipment which contains oil; and (L) for complexes only, the interface(s) (i.e., valve or component) between the portion of the facility regulated by EPA and the portion(s) regulated by other Agencies. In most cases, this interface is defined as the last valve inside secondary containment before piping leaves the secondary containment area to connect to the transportation-related portion of the facility (i.e., the structure used or intended to be used to transfer oil to or from a vessel or pipeline). In the absence of secondary containment, this interface is the valve manifold adjacent to the tank nearest the transfer structure as described above. The interface may be defined differently at a specific facility if agreed to by the RA and the appropriate Federal official. (2) The Site Drainage Plan Diagram shall, as appropriate, include: (A) major sanitary and storm sewers, manholes, and drains; (B) weirs and shut-off valves; (C) surface water receiving streams; (D) fire fighting water sources; (E) other utilities; (F) response personnel ingress and egress; (G) response equipment transportation routes; and	Vol. 1, Appendix A

Table 7-4. Cross-References to EPA FRP Regulations

40 CFR Part 112, Appendix F		Location in DCOR OSRP (re ROSF)
Section	**Requirement**	
	(H) direction of discharge flow from discharge points. (3) The Site Evacuation Plan Diagram shall, as appropriate, include: (A) site plan diagram with evacuation route(s); and (B) location of evacuation regrouping areas.	
1.10	Security According to 40 CFR 112.7(g) facilities are required to maintain a certain level of security, as appropriate. In this section, a description of the facility security shall be provided and include, as appropriate: (1) emergency cut-off locations (automatic or manual valves); (2) enclosures (e.g., fencing, etc.); (3) guards and their duties, day and night; (4) lighting; (5) valve and pump locks; and (6) pipeline connection caps. The SPCC Plan contains similar information. Duplicate information may be photocopied and inserted in this section.	Vol. 1, § 4.6 Vol. 2, § 12.10.4
2.0	Response Plan Cover Sheet	See following
2.1	General Information Owner/Operator of Facility: Enter the name of the owner of the facility (if the owner is the operator). Enter the operator of the facility if otherwise. If the owner/operator of the facility is a corporation, enter the name of the facility's principal corporate executive. Enter as much of the name as will fit in each section. (1) Facility Name: Enter the proper name of the facility. (2) Facility Address: Enter the street address, city, State, and zip code. (3) Facility Phone Number: Enter the phone number of the facility. (4) Latitude and Longitude: Enter the facility latitude and longitude in degrees, minutes, and seconds. (5) Dun and Bradstreet Number: Enter the facility's Dun and Bradstreet number if available (this information may be obtained from public library resources). (6) North American Industrial Classification System (NAICS) Code: Enter the facility's NAICS code as determined by the Office of Management and Budget (this information may be obtained from public library resources.) (7) Largest Oil Storage Tank Capacity: Enter the capacity in GALLONS of the largest aboveground oil storage tank at the facility. (8) Maximum Oil Storage Capacity: Enter the total maximum capacity in GALLONS of all aboveground oil storage tanks at the facility. (9) Number of Oil Storage Tanks: Enter the number of all aboveground oil storage tanks at the facility. (10) Worst Case Discharge Amount: Using information from the worksheets in Appendix D, enter the amount of the worst case discharge in GALLONS. (11) Facility Distance to Navigable Waters: Mark the appropriate line for the nearest distance between an opportunity for discharge (i.e., oil storage tank, piping, or flowline) and a navigable water.	Vol. 1, Facility Information Summary (p. xiii)
2.2	Applicability of Substantial Harm Criteria Using the flowchart provided in Attachment C–I to Appendix C to this part, mark the appropriate answer to each question. Explanations of referenced terms can be found in Appendix C to this part. If a comparable formula to the ones described in Attachment C–III to Appendix C to this part is used to calculate the planning distance, documentation of the reliability and analytical soundness of the formula must be attached to the response plan cover sheet.	Vol. 2, § 8.3
2.3	Certification	Vol. 2, § 8.3
3.0	Acronyms	Vol. 1, Appendix H

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Section 8 Certification Statements

8.1 California

CERTIFICATION STATEMENT

"I certify, to the best of my knowledge and belief, under penalty of perjury under 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."

Personal identifying information has been removed

4/30/2012
Date

8.2 Department of Transportation

SIGNIFICANT AND SUBSTANTIAL HARM DETERMINATION

The Company's oil pipelines consist of multiple segments in two response zones. Some of the pipelines are greater than 6 5/8 inches in diameter and greater than ten miles in length and located within one mile of potentially affected environmentally sensitive areas. A spill could reasonably be expected to reach these areas. Based on these factors, DCOR has determined that the pipeline poses a risk of significant and substantial harm to the environment and that this Response Plan is therefore required by 49 CFR 194.101.

CERTIFICATION STATEMENT

On behalf of DCOR, I hereby certify that the Company has reviewed the National Contingency Plan (NCP) and each applicable Area Contingency Plan (ACP) and this response plan is consistent with the existing NCP and the applicable ACP.

I further certify that DCOR has obtained, through contract or other approved means, the necessary private personnel and equipment to respond, to the maximum extent practicable, to a worst case discharge or a substantial threat of such a discharge.

Personal identifying information has been removed

4/30/2012
Date

(Refer to Section 9 for contracts)

8.3 Environmental Protection Agency

Certification of the Applicability of the Substantial Harm Criteria

Facility Name: Rincon Onshore Facility
Facility Address: 5777 W. Pacific Coast Highway, CA 93001

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?
   Yes _____ No X
2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?
   Yes _____ No X
3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?
   Yes X No _____
4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance such that a discharge from the facility would shut down a public drinking water intake?
   Yes _____ No X
5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil discharge in an amount greater than or equal to 10,000 gallons within the last 5 years?
   Yes _____ No X

Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

Personal identifying information has been removed

4/30/2012
Date

8.4 Certificates of Financial Responsibility

The following pages are copies of the California Certificates of Financial Responsibility (COFRs) that apply to the Company's facilities.

Back of page

State of California
Department of Fish & Game
Office of Spill Prevention & Response

Certificate of Financial Responsibility

No.: 22181-00-001 Expires: December 31, 2012

Facility Owner or Operator

DCOR, LLC

has met the financial responsibility requirements set forth in Government Code Section 8670.37.53 as it applies to the operation of

(Name and Location of Facility)

PLATFORM ESTHER

STATE LEASE PRC 3095.1

The holder of this certificate 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), see California Government Code Sections 8670.37.51 through 8670.37.57. Additionally, the holder of this certificate is subject to the conditions on the reverse of this certificate. 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 specified marine facility.

Date Issued : January 1, 2011

Scott D. Schafer

Administrator, Office of Spill Prevention & Response
Department of Fish & Game

№ 23352

State of California
Department of Fish & Game
Office of Spill Prevention & Response

Certificate of Financial Responsibility

No.: 22181-00-002 Expires: December 31, 2012

Facility Owner or Operator

DCOR, LLC

has met the financial responsibility requirements set forth in Government Code Section 8670.37.53 as it applies to the operation of

(Name and Location of Facility)

PLATFORM EVA

STATE LEASES PRC 3033.1 AND PRC 3413.1

The holder of this certificate 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), see California Government Code Sections 8670.37.51 through 8670.37.57. Additionally, the holder of this certificate is subject to the conditions on the reverse of this certificate. 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 specified marine facility.

Date Issued : January 1, 2011

Scott D. Schafer

Administrator, Office of Spill Prevention & Response
Department of Fish & Game

№ 23353

State of California
Department of Fish & Game
Office of Spill Prevention & Response

Certificate of Financial Responsibility

No.: 22181-00-003 Expires: December 31, 2012

Facility Owner or Operator

DCOR, LLC

has met the financial responsibility requirements set forth in Government Code Section 8670.37.53 as it applies to the operation of

(Name and Location of Facility)

BELMONT 3.5" PIPELINE

STATE LEASE PRC 3394.1

The holder of this certificate 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), see California Government Code Sections 8670.37.51 through 8670.37.57. Additionally, the holder of this certificate is subject to the conditions on the reverse of this certificate. 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 specified marine facility.

Date Issued: January 1, 2011

Scott D. Schafer

Administrator, Office of Spill Prevention & Response
Department of Fish & Game

№ 23354

State of California
Department of Fish & Game
Office of Spill Prevention & Response

Certificate of Financial Responsibility

No.: 22181-00-004 Expires: December 31, 2012

Facility Owner or Operator

DCOR, LLC

has met the financial responsibility requirements set forth in Government Code Section 8670.37.53 as it applies to the operation of

(Name and Location of Facility)

HUNTINGTON BEACH 8" PIPELINE

STATE LEASE PRC 3116.1

The holder of this certificate 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), see California Government Code Sections 8670.37.51 through 8670.37.57. Additionally, the holder of this certificate is subject to the conditions on the reverse of this certificate. 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 specified marine facility.

Date Issued: January 1, 2011

Administrator, Office of Spill Prevention & Response
Department of Fish & Game

№ 23355

State of California
Department of Fish & Game
Office of Spill Prevention & Response

Certificate of Financial Responsibility

No.: 22181-00-005 Expires: December 31, 2012

Facility Owner or Operator

DCOR, LLC

has met the financial responsibility requirements set forth in Government Code Section 8670.37.53 as it applies to the operation of

(Name and Location of Facility)

HUENEME 10" PIPELINE

STATE LEASE PRC 5967.1

The holder of this certificate 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), see California Government Code Sections 8670.37.51 through 8670.37.57. Additionally, the holder of this certificate is subject to the conditions on the reverse of this certificate. 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 specified marine facility.

Date Issued : January 1, 2011

Administrator, Office of Spill Prevention & Response
Department of Fish & Game

№ 23356

State of California
Department of Fish & Game
Office of Spill Prevention & Response

Certificate of Financial Responsibility

No.: 22181-00-006 Expires: December 31, 2012

Facility Owner or Operator

DCOR, LLC

has met the financial responsibility requirements set forth in Government Code Section 8670.37.53 as it applies to the operation of

(Name and Location of Facility)

DOS CUADRAS 12" PIPELINE

STATE LEASE PRC 4017.1

The holder of this certificate 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), see California Government Code Sections 8670.37.51 through 8670.37.57. Additionally, the holder of this certificate is subject to the conditions on the reverse of this certificate. 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 specified marine facility.

Date Issued : January 1, 2011

Scott D. Schafer

Administrator, Office of Spill Prevention & Response
Department of Fish & Game

№ 23357

State of California
Department of Fish & Game
Office of Spill Prevention & Response

Certificate of Financial Responsibility

No.: 22181-00-007 Expires: December 31, 2012

Facility Owner or Operator

DCOR, LLC

has met the financial responsibility requirements set forth in Government Code Section 8670.37.53 as it applies to the operation of

(Name and Location of Facility)

SANTA CLARA 12" PIPELINE

STATE LEASE 5967.1

The holder of this certificate 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), see California Government Code Sections 8670.37.51 through 8670.37.57. Additionally, the holder of this certificate is subject to the conditions on the reverse of this certificate. 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 specified marine facility.

Date Issued : January 1, 2011

Administrator, Office of Spill Prevention & Response
Department of Fish & Game

№ 23358

State of California
Department of Fish & Game
Office of Spill Prevention & Response

Certificate of Financial Responsibility

No.: 22181-00-008 Expires: December 31, 2012

Facility Owner or Operator

DCOR, LLC

has met the financial responsibility requirements set forth in Government Code Section 8670.37.53 as it applies to the operation of

(Name and Location of Facility)

RINCON ONSHORE FACILITY

The holder of this certificate 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), see California Government Code Sections 8670.37.51 through 8670.37.57. Additionally, the holder of this certificate is subject to the conditions on the reverse of this certificate. 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 specified marine facility.

Date Issued : January 1, 2011

Scott D. Schafer

Administrator, Office of Spill Prevention & Response
Department of Fish & Game

№ 23359

Section 9 Contractual Agreements

Copies of OSRO Certificates/contracts for Clean Seas, MSRC, NRCES, Patriot Environmental Services, and AIS, a are included in this section.

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CERTIFICATE OF CONTRACTUAL SERVICES

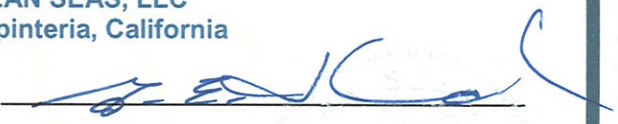
CLEAN SEAS, LLC

Issued to:

DCOR, LLC

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. The contractual services provided shall remain in effect from January 1, 2012, until properly terminated, or December 31, 2012, whichever shall first occur.

CLEAN SEAS, LLC
Carpinteria, California

By: 

Name: G.E. Ikerd

Title: General Manager

Dated: December 28, 2011

CERTIFICATE OF CONTRACTUAL SERVICES

CLEAN SEAS, LLC

Issued to:

DCOR, LLC

RINCON ONSHORE FACILITY & ASSOC. PIPELINES

as a Shore Based Facility requested to be covered by DCOR, LLC, 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 as of January 1, 2012 until properly terminated, or December 31, 2012 whichever shall first occur.

CLEAN SEAS, LLC
Carpinteria, California

By: _____

Name: G.E. Ikerd

Title: General Manager

Dated: December 28, 2011

MARINE SPILL RESPONSE CORPORATION
SERVICE AGREEMENT
FOR CCW TRANSITIONAL MEMBERS

EXECUTION INSTRUMENT

The MSRC SERVICE AGREEEMENT FOR CCW TRANSITIONAL MEMBERS attached hereto (together with this execution instrument, the "Agreement"), a standard form of agreement dated as of June 30, 2004, is hereby entered into by and between

Dos Caudras Offshore Resources, LLC
[Name of COMPANY]

a Limited Liability Company, California
[Type of entity and place of organization]

with its principal offices located at 290 Maple Court, Suite 290 Ventura, CA 93003 (the "COMPANY"), and MARINE SPILL RESPONSE CORPORATION, a nonprofit corporation organized under the laws of Tennessee ("MSRC"), and shall be identified as

SERVICE AGREEMENT No. CCW003 [This is to be provided by MSRC.]

IN WITNESS WHEREOF, the parties hereto each have caused this Agreement to be duly executed and effective as of April 1, 2005.

Dos Caudras Offshore Resources, LLC [COMPANY]

Personal identifying information has been removed

Title: Director ES&RC

Address: 290 Maple Court, Suite 290
Ventura, CA 93003

Telephone: 805 535-2000 Fax: 805 535-2100

MARINE SPILL RESPONSE CORPORATION:

By: Steven I. Berg for
Judith Roos Norell
Marketing & Customer Service Manager
220 Spring Street, Suite 500
Herndon, VA 20170
(703) 326-5617; Fax: (703) 326-5660

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COPY

EMERGENCY RESPONSE AND SERVICE AGREEMENT

Between

NRC ENVIRONMENTAL SERVICES INC.

And

DCOR, LLC

INDEX

EMERGENCY RESPONSE AND SERVICE AGREEMENT

THIS AGREEMENT, effective this 1st day of July, 2006 by and between NRC ENVIRONMENTAL SERVICES INC. duly organized and existing by virtue of the laws of the State of Washington (herein referred to as "NRCES"), and DCOR, LLC, a Texas limited liability company (herein referred to as "CUSTOMER").

WHEREAS, NRCES is engaged in the business of providing environmental and hazardous waste management services. This includes emergency response services to mitigate oil, hazardous and other substances released into the environment.

WHEREAS, CUSTOMER desires to engage NRCES to perform emergency response and other environmental services on an as-needed basis.

NOW, THEREFORE, for valuable consideration, the parties agree as follows:

ARTICLE I. SCOPE OF SERVICES

1.1 NRCES will provide emergency response services ("Response Services") to respond to spills of oil of any kind or in any form (including petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil), hazardous waste, or other regulated and non-regulated substances or materials as defined by applicable state and federal law (referred to collectively as "Waste") by CUSTOMER on land or in the water on an as-called, as-able basis in the locations described on EXHIBIT "A" to this Agreement. The scope of Response Services to be performed by NRCES shall be determined by the parties at the time NRCES accepts CUSTOMER's request for Response Services (as further defined in Article 2), and as directed by CUSTOMER's on-scene representative and any governmental agency involved.

1.2 NRCES (either through its own organization or through subcontractors) may provide CUSTOMER with additional environmental services on a planned basis ("Planned Services", and collectively with Response Services, referred to as "Services"), including but not limited to soil and groundwater remediation, facility decontamination, demolition, industrial cleaning and vacuuming, transportation, preparedness training, and other environmental services pursuant to requests by Customer and proposals submitted by NRCES. Once accepted by CUSTOMER, NRCES' proposal for Planned Services shall govern the performance and compensation of the Planned Services, subject to the terms and conditions of this Agreement.

ARTICLE 2. INITIATION OF RESPONSE SERVICES

2.1 CUSTOMER shall request Response Services by telephone during any 24-hour period by calling **1-800-337-7455.**

2.2 CUSTOMER shall provide NRCES with the location of the spill ("Site"), nature of the emergency, approximate time of the emergency, substance released, chemical name, trade name, amount released (if known), name of CUSTOMER's on-scene representative, and other information reasonably requested by NRCES. NRCES shall be entitled to rely upon this information in determining if and to what extent NRCES will respond.

2.3 Unless otherwise stated by a Retainer Addendum executed by both parties, NRCES is not obligated to respond to requests for Response Services. If NRCES is able to respond, NRCES does not thereby guarantee any response time. CUSTOMER acknowledges that NRCES may determine in its sole

discretion which requests for emergency response to respond to in the event that NRCES at any time receives more requests than it can respond to with its available personnel and equipment. CUSTOMER further acknowledges that this Agreement does not obligate NRCES to remove personnel and equipment from response services initiated prior to CUSTOMER's initiation of the Response Services. *See Retainer Addendum of even date herewith between the parties hereto.

2.4 CUSTOMER may issue written confirmation of a request for Response Services. This shall not, however, be a condition precedent to payment for Response Services performed by NRCES under this Agreement. Any terms on such written confirmation that vary from the terms of this Agreement are hereby rejected unless specifically accepted by NRCES in writing.

2.5 During the term of this Agreement only, including all renewal periods, CUSTOMER may name NRCES in its state and federal contingency plans only as a supplemental resource, without any guarantee of response time or resource level capabilities. NRCES shall be entitled, without liability to CUSTOMER, to provide to any governmental agency at any time notice of the status of CUSTOMER's relationship with NRCES, including, without limitation, the right upon termination of this Agreement, to notify any governmental agency that this Agreement has been terminated and that CUSTOMER is not entitled to continue to name NRCES in its contingency plans. *See Retainer Addendum of even date herewith between the parties hereto.

ARTICLE 3. NRCES' RESPONSIBILITIES

3.1 NRCES will provide supervision, labor, materials, tools, equipment and subcontracted items for the performance and completion of the Services, to the extent agreed between the parties. NRCES shall act as an independent contractor in the performance of the Services.

3.1.1 NRCES shall supervise, direct, control and directly pay for all personnel NRCES provides to perform the Services, whether they are permanent or temporary personnel of NRCES, or employees of third parties who provide personnel to NRCES on a contract basis. Similarly, all equipment utilized by NRCES, whether owned, rented or under subcontract, including but not limited to all vessels, boom, and skimmers, shall be installed, operated, monitored, maintained, demobilized and decontaminated by NRCES personnel or the personnel of NRCES' subcontractors. Such equipment and the labor hours associated with installing, operating, monitoring, maintaining, demobilizing and decontaminating the equipment, are part of the Services to be compensated in accordance with Article 5. NRCES shall not be required to supervise, direct or control any personnel provided by CUSTOMER or temporary personnel hired by CUSTOMER to perform other services.

3.2 CUSTOMER recognizes that Response Services provided by NRCES under this Agreement are provided on an emergency basis, that the purpose of each response is to minimize to the extent practicable the environmental damage and health and safety risks resulting from spills or releases of oil, hazardous or other substances; and that the substance involved may not be eliminated from the Site by the emergency response. NRCES DOES NOT WARRANT, BY THE TERMS OF THIS AGREEMENT OR BY UNDERTAKING RESPONSE SERVICES PURSUANT TO THIS AGREEMENT, THAT SUCH RESPONSE SERVICES WILL RENDER THE SITE SAFE FOR ANY FORM OF HUMAN ACTIVITY OR IN COMPLIANCE WITH ANY STATE, LOCAL OR FEDERAL LAW.

3.3 NRCES shall take necessary precautions for the safety of its personnel and shall comply with applicable provisions of federal, state and local safety laws and regulations. While on CUSTOMER's facilities or vessels, NRCES shall comply with all instructions received from CUSTOMER concerning safety policies and procedures. CUSTOMER shall give such instructions with as much advance notice as is practicable under the circumstances. NRCES shall maintain all required safety training, including HAZWOPER training, of its employees. NRCES shall not have responsibility for the elimination or abatement of safety hazards created or otherwise resulting from conditions at the Site existing prior to NRCES'

presence, or arising from work at the Site carried on by CUSTOMER's other contractors, employees and agents. CUSTOMER agrees to cause any such contractors, employees and/or agents to abide by and fully adhere to all applicable provisions of federal, state and local safety laws and regulations and to comply with all reasonable requests of NRCES for the elimination or abatement of any safety hazard at the Site.

3.3.1 With respect to Response Services, CUSTOMER understands and agrees that (i) actions carried out in an emergency response may be inherently dangerous and difficult, (ii) rules and requirements that may be appropriate and applicable under normal circumstances may not be appropriate or applicable in a particular emergency situation, as recognized by the considerable authority of governmental or regulatory agencies to direct private actions in a response, and (iii) there are unresolved jurisdictional and applicability issues associated with emergency response that may make it difficult to determine the applicability of a particular requirement. Therefore, the provisions of Article 3.3 will not be interpreted in a manner that would hold NRCES to a standard that would be unreasonable under the actual conditions of particular spill event. All NRCES actions carried out consistently with the directions of the federal or state on scene coordinator or with approval of applicable safety officials will be deemed to be in compliance with Article 3.3.

3.4 NRCES will require laboratories hired by NRCES to maintain samples for thirty (30) calendar days from the date the analysis is performed. After thirty (30) days, at CUSTOMER's direction, such samples will be returned to CUSTOMER or such samples will be disposed of with CUSTOMER paying for all charges and expenses associated with such disposal.

ARTICLE 4. CUSTOMER'S RESPONSIBILITIES

4.1 Prior to the commencement of the Services, CUSTOMER shall designate to NRCES a representative who shall be fully acquainted with the Services, and who has authority on behalf of CUSTOMER to approve changes in the Services, approve daily reports submitted by NRCES setting forth the daily charges, resolve disputes in invoices, render decisions promptly, execute waste manifests and furnish information expeditiously and in time to meet the time schedule for completion of the Services.

4.2 CUSTOMER shall provide full and complete information regarding its requirements for the Services and shall immediately transmit to NRCES any new information which becomes available or any change in plans subsequent to any such providing of information. CUSTOMER shall communicate to NRCES those special hazard risks involved in the excavation and/or removal of the Wastes of which it is or becomes aware. Such information shall include, but not be limited to, any relevant notification of substantial risk given by CUSTOMER pursuant to the Toxic Substances Control Act.

4.2.1 CUSTOMER shall furnish to NRCES available information on the Site describing: physical characteristics, soil reports and subsurface investigations, the location of any installations and underground utilities, legal limitations, legal description, and other reports or documents that may be reasonably requested by NRCES. In the event the Site is not owned by CUSTOMER, CUSTOMER shall be responsible for obtaining any information relative to the Site from the owner and providing that information to NRCES.

4.3 CUSTOMER shall secure and pay for all necessary approvals, easements, assessments, permits and charges required for the Services to be performed. CUSTOMER shall secure all necessary approvals, judicial and/or administrative orders necessary to insure NRCES' legal access to the Site. CUSTOMER warrants that any right-of-way provided by CUSTOMER to/from the Site and/or to/from the most convenient public way, is sufficient to bear the weight of all NRCES' equipment and vehicles reasonably required to perform the Services required. NRCES shall not be responsible for any changes required to be made to any private pavement or accompanying subsurface of any route for its performance of the Services. CUSTOMER shall be responsible for repairs to all roadways and rights-of-way arising out of the normal wear and tear resulting from NRCES' use thereof by its equipment during the performance of the Services.

4.4 Upon NRCES' written request, CUSTOMER shall furnish reasonable evidence satisfactory to NRCES that sufficient funds are available and committed for the entire cost of the Services. Unless such evidence is furnished, NRCES is not required to commence or continue any Services, or may, if such evidence is not presented within ten (10) days of the request, terminate this Agreement as set forth in Article 14. The failure of NRCES to request or insist upon the receipt of this evidence at any time shall not be a waiver of CUSTOMER's obligation to make payments pursuant to this Agreement, nor shall it be a waiver of NRCES' right to request or insist that such evidence be provided at a later date.

4.5 CUSTOMER warrants that it holds clear title to all Wastes to be handled by NRCES and is under no legal restraint or order which would prohibit the transfer of the Wastes to a disposal facility designated by CUSTOMER for treatment, storage and/or disposal. CUSTOMER shall execute all transportation, treatment and disposal manifests and other documentation as generator of the Wastes involved.

4.6 CUSTOMER warrants that the Services to be done under this Agreement do not violate any final court order or any final ruling of any governmental agency of which CUSTOMER has knowledge.

4.7 CUSTOMER shall pay all taxes, assessments, and fees associated with the Services, including taxes for which CUSTOMER claims it is exempt or for which CUSTOMER issues NRCES direct-pay permits, and generator, disposal and other fees. CUSTOMER shall reimburse NRCES for all sales taxes, use or similar taxes or assessments or fees paid by NRCES related to the Services hereunder.

4.8 CUSTOMER shall report any "confirmed release" to the appropriate local, state and federal agency in accordance with any applicable regulations. CUSTOMER shall indemnify, defend and hold harmless NRCES from any and all fines, penalties, assessments and costs resulting from any failure of CUSTOMER to report such release.

4.9 The services and information required by the above Sections 4.1 to 4.8 shall be furnished with reasonable promptness at CUSTOMER's expense and NRCES shall be entitled to rely upon the accuracy and the completeness thereof in the performance of the Services.

ARTICLE 5. COMPENSATION

5.1 Unless otherwise stated in a written proposal for Planned Services issued by NRCES, CUSTOMER shall pay NRCES for all Services performed on a time and materials basis in accordance with the terms and rates set forth in EXHIBIT "B", NRCES' Schedule of Rates, as amended from time to time. CUSTOMER shall pay for all personnel provided by NRCES in accordance with these rates, whether they are permanent or temporary employees of NRCES, or employees of third parties who provide personnel to NRCES on a contract basis. CUSTOMER expressly acknowledges and agrees that NRCES administrative personnel required to perform project specific record-keeping, reporting, accounting, logistics and resource allocation are required for the proper performance of the Services and shall be paid for at the rates set forth in EXHIBIT "B" only for that amount of time during which such services are directly performed for CUSTOMER's project. Similarly, all equipment and materials provided by NRCES that are listed on EXHIBIT "B", whether rented or owned, shall be paid for at the rates contained therein. CUSTOMER shall also pay for all expenses incurred by NRCES in connection with the Services, including but not limited to expenses for travel (including local travel), meals, lodging, reproduction, deliveries, equipment rental, freight, transportation, disposal and subcontractor charges, all in accordance with EXHIBIT "B". CUSTOMER acknowledges that all equipment rentals, subcontractor charges, disposal services, material costs and other third party charges for services, personnel, materials or equipment not listed on EXHIBIT "B" will be invoiced by NRCES and paid for by CUSTOMER at the cost of such services, personnel, equipment or materials to NRCES plus a markup of 20%

5.1.1 The rates set forth in EXHIBIT "B" shall be firm from the date of execution until NRCES provides written notice of a rate change. NRCES reserves the right to modify such rates at any time, provided, however, that no such rate change will take effect until thirty (30) days after NRCES provides written notice of the rate change to CUSTOMER. *See Retainer Addendum of even date herewith between the parties hereto.

5.2 Unless specifically stated otherwise by NRCES in a written proposal for Planned Services, estimates of the cost of Services provided by NRCES are provided for budgetary purposes only, and shall not be deemed guaranteed maximum prices or otherwise limit the amount of compensation that NRCES shall receive for performance of the Services. This provision applies notwithstanding language to the contrary appearing on any purchase order or other written documentation provided to NRCES by CUSTOMER.

5.3 NRCES shall submit invoices setting forth the amounts due for all current charges and expenses on a monthly basis or upon completion of the Services, whichever occurs first. Unless a different address is provided by CUSTOMER, NRCES shall submit all invoices to the address shown on the signature page of this Agreement. All invoices will be due upon receipt, but no later than thirty (30) days from the date of the invoice. CUSTOMER shall send payment to NRCES at the following address:

NRC Environmental Services Inc.
P.O. Box 8500-2886
Philadelphia, PA 19178-2886

5.3.1 CUSTOMER shall, within fifteen (15) days of receipt of invoice, communicate in writing to NRCES any invoice errors, discrepancies or disputes. If such communication is not made within this 15-day period, the invoice will be deemed to be approved and shall be paid. If an error, discrepancy or dispute is identified, then the parties will endeavor to resolve the dispute within fifteen (15) days. If no resolution is made within this time frame, the disputed amount will be excluded from the total invoice amount, with the parties endeavoring to resolve the dispute within thirty (30) days. The balance of the invoice shall be deemed approved and shall be paid within thirty (30) days after the original invoice date.

5.3.2 Balances outstanding more than thirty (30) days after the invoice date (or outstanding more than thirty [30] days after resolution of a disputed amount) shall be deemed delinquent and shall earn interest at the rate of 1.5 % per month, or the maximum rate permitted by law (whichever is lesser), from the due date until paid. In addition to interest, CUSTOMER shall be responsible for all costs incurred by NRCES to collect overdue amounts, including collection fees, filing fees, court costs and attorney's fees. NRCES reserves all legal rights and recourses against CUSTOMER and its property for failure of CUSTOMER to pay such invoices when due. Further, NRCES shall have the right to suspend performance of the Services in the event any invoice is delinquent, and to continue such suspension until all delinquent invoices are paid. CUSTOMER shall pay for all costs incurred by NRCES during, and arising as a result of the suspension period in accordance with EXHIBIT "B".

5.4 For one year from the completion of each request for Services, NRCES will maintain records of all labor, materials, equipment and expenses invoiced to CUSTOMER on a rate sheet or reimbursable basis and will make such records available to CUSTOMER during normal business hours at the NRCES office providing the Services, or by mail if so requested.

ARTICLE 6. CHANGES IN THE SERVICES

6.1 Without invalidating this Agreement, CUSTOMER and NRCES may request changes in the Services within the general scope of the Services. In the event changes in the Services, emergencies, changed conditions, or delays and interferences result in increased work requirements, extended schedule or

increased cost to perform the Services, CUSTOMER shall pay NRCES for such changed or increased Services or delays in accordance with EXHIBIT "B" unless otherwise mutually agreed by the parties in writing.

6.2 CUSTOMER acknowledges that Response Services may be governed and regulated by certain state, federal and local laws and the regulations and other requirements of various government agencies with jurisdiction over emergency events and other environmental matters. To the extent any of these governmental requirements increase the scope of Response Services to be rendered and the expenses associated with such Response Services, CUSTOMER shall pay NRCES for all Response Services and expenses in accordance with Article 5.

ARTICLE 7. INSURANCE

7.1 NRCES shall carry at its expense, during the term of this Agreement, the insurance coverages set forth below:

COVERAGE	LIMITS
(a) Worker's Compensation	Statutory
(b) Employer's Liability	$1,000,000 each occurrence
(c) Commercial General Liability (Bodily Injury & Property Damage)	$1,000,000 combined single limit/aggregate
(d) Automobile Liability (Bodily Injury & Property Damage)	$1,000,000 combined single limit/aggregate
(e) Contractor's Pollution Liability	$1,000,000 per claim
(f) Excess Liability serving to increase all primary coverage set forth in all sections above	$4,000,000 minimum limit

NRCES agrees to furnish to CUSTOMER insurance certificate(s) evidencing such coverages and CUSTOMER will be named an additional insured on the General Liability policy, but only to the extent of negligent operations performed by NRCES. NRCES shall provide at least thirty (30) days' notice of cancellation, material change, or reduction of the limits described above.

The providing of insurance and the granting of additional insured status shall not be construed as an assumption of any liability by NRCES for the acts, omissions, negligence or other liability caused by CUSTOMER or any third party. Except only as expressly set forth in Article 8 hereof, the insurance required to be carried by NRCES under this Agreement shall not limit, or be construed to limit, the undertakings of NRCES in said Article 8. CUSTOMER shall be responsible for purchasing and maintaining its own liability insurance.

7.2 CUSTOMER and NRCES waive all rights against each other for damages covered by property insurance during and after completion of the Services, except in the case of gross negligence or willful misconduct of the other party.

ARTICLE 8. INDEMNIFICATION

8.1 Subject to section 8.1.1 below, CUSTOMER's indemnification obligations, and the provisions of Articles 14 and 15 hereof, NRCES agrees to indemnify, defend and save harmless CUSTOMER from and against all liabilities, claims, demands, damages, causes of action, costs and expenses, including reasonable attorney's fees and costs of defense (collectively referred to as "Claims") for bodily injury to or death of any person or destruction of or damage to any property of any third party, but only to the extent arising from (i) the negligent and gross negligent acts or omissions or willful misconduct of NRCES, its agents, employees or subcontractors in the performance of the Services, and/or (ii) the failure of NRCES or any of its agents, employees or subcontractors to observe or comply with any of NRCES' duties and obligations as a response contractor under the law or this Agreement. This indemnification does not extend to Claims arising from (a) CUSTOMER's failure to comply with and fulfill its obligations under the law or this Agreement, (b) negligent or gross negligent acts or omissions or willful misconduct of CUSTOMER, any one under contract with CUSTOMER or otherwise under CUSTOMER's direction and control, or (c) acts or omissions of any third party.

8.1.1 Notwithstanding any other provision contained in this Agreement, NRCES' obligation to indemnify CUSTOMER shall not extend to any Claims that NRCES would otherwise be protected against, exempt from or liability limited under any federal or state laws protecting response contractors from certain liability in connection with their response efforts, even if such Claims arise from negligent acts or omissions of NRCES. It is agreed that NRCES' liability under section 8.1 will not in any case exceed NRCES' liability under such laws.

8.2 CUSTOMER shall indemnify, defend and hold harmless NRCES, its parent and affiliated companies, their directors, officers, employees, agents, insurers and subcontractors against Claims to the extent arising out of or as a result of (i) the negligent acts or omissions or willful misconduct of CUSTOMER, its employees, representatives, agents and other contractors; and/or (ii) the failure of CUSTOMER or any of its employees, agents or other contractors to observe or comply with any of CUSTOMER's duties and obligations under the law or this Agreement. This indemnification does not extend to Claims arising from (a) NRCES' failure to comply with and fulfill its obligations under the law or this Agreement or (b) negligent or gross negligent acts or omissions or willful misconduct of NRCES, its agents, employees, or subcontractors.

8.3 CUSTOMER shall indemnify, defend and hold harmless NRCES, its parent and affiliated companies, their directors, officers, employees, agents and subcontractors against any and all Claims arising out of or as a result of (i) the presence of NRCES or its subcontractors on the Site if the Site is not owned by CUSTOMER; and/or; (ii) the discharge, escape or release of Waste from CUSTOMER's property or the property of others, except to the limited extent caused by the active negligence, gross negligence or willful misconduct of NRCES in the performance of the Services, provided that this exception shall not apply to the extent NRCES is immune or NRCES' liability is limited under federal or state laws.

ARTICLE 9. CONFIDENTIALITY

9.1 For purposes of this Article, "Information" means any verbal, handwritten, typewritten, printed, recorded or graphic matter (including computer-generated mediums) containing proprietary business information of either party which may come within the knowledge of the other party in the performance of this Agreement. "Confidential Information" is any Information that has been designated in writing by the party seeking to impose any obligation hereunder as "Confidential". In the case of verbal or visual Information, the party seeking to apply this Article to such Information shall, within three (3) days of the conveyance of the Information to the other party, notify the other party of that the Information is considered Confidential Information and to be treated as such under this Article.

9.2 NRCES and CUSTOMER (including both parties' employees, officers, agents, and directors) shall treat Confidential Information as confidential and proprietary and not disclose it to others during or for a

period of three (3) years after the completion of any Services performed under to this Agreement (except as is necessary to perform Services under this Agreement), without securing the prior written consent of the other party.

9.3 Nothing contained within this Article shall prevent either NRCES or CUSTOMER from disclosing to others or using in any manner information which either party can show:

a. has been published and has become part of the public domain other than by acts, omissions, or fault of NRCES or CUSTOMER;

b. has been furnished or made known to NRCES or CUSTOMER by third parties (other than those acting directly or indirectly for or on behalf of NRCES or CUSTOMER) as a matter of legal right without restrictions on its disclosure; or,

c. was in either party's possession prior to the disclosure thereof by CUSTOMER or NRCES to the other.

9.4 If either party shall be required by subpoena, court, or administrative order (hereinafter "the Order") to disclose any Confidential Information of the other party, the disclosing party shall give immediate notice to the other party. Upon receipt, the party whose information may be the subject of the Order may interpose all objections it may have to the disclosure of its Confidential Information at its cost. If the party owning the Confidential Information fails to make timely objections to the disclosure of such Confidential Information, the party who received the Order shall comply with the Order without liability to the other party.

ARTICLE 10. EXCUSE OF PERFORMANCE

10.1 The performance of this Agreement, except for the payment of money for services already rendered, may be suspended by either party in the event performance of this Agreement is prevented by a cause or causes beyond the reasonable control of either party. Such causes shall include, but not be limited to: acts of God; acts of war; acts of terrorism; riot; fire; explosion; accident; flood; abnormal weather; sabotage; lack of adequate fuel, power, raw materials, labor, transportation or disposal facilities; requirements of Governmental laws, regulations, permits, ordinances, rules, orders or actions; breakage or failure of machinery or apparatus; national defense requirements; injunctions or restraining orders; failure or refusal of disposal facilities to handle or receive Wastes; and labor trouble, strike, lockout or injunction (provided that neither party shall be required to settle a labor dispute against its own best judgment). It is expressly understood that NRCES' failure to secure adequate fuel, power, raw materials, and labor to perform the Services shall not be grounds for suspending performance hereunder unless such inadequacies were caused by events beyond the reasonable control of NRCES.

10.2 The party asserting a right to suspend performance under this Article must, within a reasonable time after it has knowledge of the effective cause, notify the other party of the cause for suspension, the performance suspended, and the anticipated duration of suspension.

10.3 Upon receipt of notice as set forth in 10.2, advising the other party of a suspension of performance, the parties shall mutually agree on one of the following:

a. termination of all or any part of the Services affected;

b. demobilization of affected personnel and equipment from the Site with remobilization to the Site occurring at a mutually agreeable time after the end of the suspending event; or,

c. placement of affected personnel and equipment in a standby mode until the end of the suspending event.

If the parties agree to option a. above, CUSTOMER shall compensate NRCES, unless otherwise agreed to, as set forth in Section 12.3. If the parties agree to either option b. or c. above, the parties shall agree to schedule adjustments and adjustment to compensation in the manner as set forth in Articles 5 and 6.

ARTICLE 11. DIFFERING SITE CONDITIONS

11.1 NRCES shall be entitled to equitable adjustments in the compensation for and schedule of the Services in the event it encounters physical, structural, subsurface, soil or other conditions at the Site differing from those indicated, provided to or represented to NRCES. Thereafter, the parties shall agree in writing upon an appropriate amendment to this Agreement to reflect the cost and schedule impact of such conditions. NRCES shall not be required to continue performance of the Services upon notification to CUSTOMER of such differing site conditions until the appropriate amendment is agreed upon.

11.2 Absent mutual agreement to the contrary, NRCES shall be entitled to compensation for Services rendered as a result of changed conditions in accordance with EXHIBIT "B".

ARTICLE 12. TERMINATION

12.1 This Agreement, or Services being performed under this Agreement, may be terminated with or without cause by either party upon thirty (30) days written notice to the other party. *See Retainer Addendum of even date herewith between the parties hereto.

12.2 This Agreement, or Services being performed under this Agreement, may be terminated by either party upon forty-eight (48) hours written notice should the other party fail substantially to perform its obligations under this Agreement through no fault of the party initiating the termination, provided the party initiating the termination has previously given the other party written notice of the deficiency, and allowed that party a reasonable period of time, not to exceed five (5) working days, to commence to cure the deficiency before notice of termination is issued.

12.3 In the event of termination not the fault of NRCES, CUSTOMER shall compensate NRCES for all Services performed prior to termination in accordance with the compensation for such Services as well as charges for demobilization, decontamination and other termination charges in accordance with EXHIBIT "B".

ARTICLE 13. DELEGATION AND ASSIGNMENT

13.1 NRCES may at any time, without the prior consent of CUSTOMER, delegate, orally or in writing, the performance of a portion of the Services. However, any delegation by NRCES shall not operate to relieve NRCES of its responsibilities hereunder.

13.2 Neither party may assign any rights or remedies hereunder without the prior written consent of the other party.

ARTICLE 14. HANDLING OF SUBSTANCES

14.1 In the performance of this Agreement, NRCES may handle Waste that pre-existed NRCES' presence at the Site. CUSTOMER acknowledges that CUSTOMER has exclusive title to all Waste under this Agreement and is responsible for any real or personal property contaminated with or otherwise affected by such Waste. Nothing contained within this Agreement nor the performance of any Services by NRCES shall be construed or interpreted as requiring NRCES to assume the status or liability as an owner, operator,

manager or person in charge of all or any portion of the Site, as arranger for the treatment, transportation or disposal of any Waste, or as owner or generator of any Waste under the Resource Conservation and Recovery Act, 42 USCA, Section 6901. et seq., as amended, (hereinafter "RCRA"), Comprehensive Environmental Response Compensation and Liability Act, 42 USCA, Section 9601. et seq., as amended (hereinafter "CERCLA"), or within any other federal or state statute governing the treatment, storage and disposal of Waste (herein collectively referred to as "Regulations"). NRCES has not taken and will not take title, control of or otherwise own any Waste under this Agreement.

14.2 CUSTOMER shall retain the primary responsibility for compliance with the provisions of such Regulations governing the treatment, storage and disposal of Waste. NRCES will transport or cause to be transported any Waste under this Agreement to a disposal or treatment facility selected by CUSTOMER. Any such transportation undertaken under this Agreement shall be undertaken or arranged solely as CUSTOMER's agent and under CUSTOMER's direction.

14.3 CUSTOMER shall provide NRCES with CUSTOMER's EPA identification number and any other identification or authorization required by law and assigned to CUSTOMER.

14.4 If CUSTOMER requests NRCES' assistance, then NRCES, as requested and directed by CUSTOMER, may perform the following Services:

a. obtain analytical testing to assist CUSTOMER in the proper characterization of the Waste for manifest preparation;

b. identify potential transporters and disposal facilities which may be used in the transportation and disposal of Wastes collected;

c. enter into subcontract or purchase order arrangements with transporters and/or disposal facilities selected by CUSTOMER on behalf of CUSTOMER; and,

d. prepare manifests for CUSTOMER's approval and execution.

14.5 NRCES shall not be liable to CUSTOMER (or any person claiming through CUSTOMER) in any amount for any personal injury, illness, death or property damage caused in whole or in part by Waste that is handled by NRCES in the performance of this Agreement, except to the extent caused by the active negligent or gross negligent acts or omissions or willful misconduct of NRCES, its agents, employees, or subcontractors.

14.6 NRCES shall have no liability to CUSTOMER (or any person claiming through CUSTOMER) for contamination or change in character or properties of any Waste that is off-loaded by NRCES by pump, vacuum or otherwise into equipment supplied by CUSTOMER or NRCES for transportation by CUSTOMER, NRCES or a third party to a destination designated by CUSTOMER. CUSTOMER hereby releases NRCES from and indemnifies NRCES against any such liability or damages. Any increase in cleanup, transportation, treatment or disposal costs as a result in any such contamination or change in character or properties of the Waste shall be paid for by CUSTOMER at its sole expense.

ARTICLE 15. WARRANTIES AND LIMITS OF LIABILITY

15.1 NRCES warrants that its provision of the Services under this Agreement will conform to the standards of care, skill and diligence normally observed by contractors performing similar services. THIS WARRANTY IS IN LIEU OF, AND EXCLUDES ALL OTHER WARRANTIES, STANDARDS AND GUARANTEES, WHETHER EXPRESSED OR IMPLIED, ARISING BY OPERATION OF LAW OR OTHERWISE, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY OF ANY EQUIPMENT, MACHINERY, PROCESS OR

SYSTEM EMPLOYED OR PROVIDED BY NRCES. CUSTOMER'S SOLE REMEDY AND NRCES' SOLE LIABILITY FOR BREACH OF WARRANTY SET FORTH IN THIS AGREEMENT OR OTHERWISE SHALL BE THE PERFORMANCE OF THE SERVICES IN QUESTION TO THE EXTENT NECESSARY TO CURE THE BREACH. Such remedy shall be available to CUSTOMER only if CUSTOMER reports the breach to NRCES within a reasonable period of time after discovery of the breach and in any event prior to completion and demobilization of Response Services, or not later than one (1) year after completion of Planned Service in question.

15.2 To the fullest extent allowed by law, NRCES, its parent and affiliated companies, their directors, officers, employees, agents and subcontractors, shall not be liable to CUSTOMER, and CUSTOMER hereby releases them from special, indirect, incidental, consequential or exemplary damages in any way related to or in connection with the Services, this Agreement or their presence at the Site, regardless of the cause, including negligence, gross negligence, willful misconduct or strict liability.

ARTICLE 16. ADDITIONAL GENERAL PROVISIONS

16.1 Waiver - Any waiver by either party of any provision or condition of this Agreement shall not be construed or deemed to be a waiver of any other provision or condition of this Agreement, nor a waiver of a subsequent breach of the same provision or condition, unless such waiver be so expressed in writing and signed by the party to be bound.

16.2 Arbitration and Applicable Law - Any controversy or claim arising out of or relating to this Agreement, or the breach thereof, shall be settled by negotiation of NRCES and CUSTOMER, or by arbitration in Los Angeles County, California, in accordance with the Commercial Rules of Arbitration of the American Arbitration Association ("AAA"). The tribunal shall be composed of one neutral arbitrator if the controversy or claim involves a maximum exposure of less than $1,000,000. If the Parties are unable to agree on a neutral arbitrator, one will be appointed pursuant to the rules of the AAA. If the controversy or claim involves a maximum exposure in excess of $1,000,000, then the tribunal shall consist of three (3) arbitrators, with each party appointing one arbitrator, and the two arbitrators so appointed appointing the third arbitrator who shall act as Chair. Judgment upon any award rendered may be entered in any court having jurisdiction thereof. All statutes of limitation that would otherwise be applicable shall apply to the controversy or claim. NRCES and CUSTOMER shall treat all matters relating to the arbitration as confidential. Subject to either party's obligation to cooperate fully with governmental authorities having jurisdiction over such matters, NRCES and CUSTOMER understand and agree that this confidentiality obligation extends to information concerning the fact of any request for arbitration, any ongoing arbitration, as well as all matters discussed, discovered, or divulged, (whether voluntarily or by compulsion) during the course of such arbitration proceeding. The laws of the State of California shall govern any matter arising out of or relating to this Agreement, or the breach thereof.

Should any controversy or claim arising hereunder be settled by arbitration, the losing party in such matter shall pay to the prevailing party, in addition to other relief ordered by the arbitrator(s), the prevailing party's reasonable costs and expenses incurred in connection with the arbitration, including reasonable attorneys' fees.

16.3 Severability - If any article, subarticle, sentence or clause of this Agreement shall be adjudged illegal, invalid or unenforceable, this shall not affect the legality, validity or enforceability of this Agreement as a whole or of any other part of this Agreement not so adjudged.

16.4 Successors and Assigns - The covenants and agreements contained in this Agreement shall apply to, inure to the benefit of and be binding upon the parties hereto and upon their respective successors and permitted assigns.

16.5 Notice - Any notice to be given hereunder shall be in writing and deemed to have been sufficiently given when sent by confirmed facsimile transmission, courier service, delivered in person or by registered or certified mail, postage prepaid, return receipt requested, to the address of the respective party shown on the signature page. Either party may, by notice to the other, change the addresses and names identified below.

16.6 Applicability: All limitations of and releases from liability, and exclusive remedy provisions and entitlement to indemnity applicable to NRCES by law or under this Agreement shall apply to NRCES, its parent, affiliates and subsidiaries of either, their officers, directors, employees, insurers and agents, and to any vessel owned or chartered by any of the above, and the master and crew of any such vessel.

Correspondingly, all limitations of and releases from liability, and exclusive remedy provisions and entitlement to indemnity applicable to CUSTOMER by law or under this Agreement shall apply to CUSTOMER, its parent, affiliate and subsidiary companies, together with their respective directors, officers, employees, insurers, and agents.

16.7 Entire Agreement - This Agreement consists of: (i) this Agreement and its Exhibits; (ii) CUSTOMER accepted NRCES Proposals ;(iii) and amendments approved by the parties in writing after the execution of the Agreement. This Agreement represents the entire understanding and agreement between the parties hereto and supersedes any and all prior agreements, whether written or oral, that may exist between the parties. All Exhibits are by this reference incorporated into this Agreement.

16.8 Amendments - This Agreement may be amended or modified only by a written amendment to the Agreement signed by both parties. Additional or different terms on a Purchase Order, or other document provided by CUSTOMER shall be deemed material and shall be rejected, unless expressly accepted by NRCES in writing.

16.9 Term of Agreement - This Agreement is effective as of the date first written above and shall continue thereafter until either party terminates the Agreement as provided in Article 12 hereof. This termination shall not apply to ongoing work until such work is completed as provided herein.

16.10 Authority – Each party represents and warrants that the person signing this Agreement on its behalf is duly authorized and has the requisite corporate authority to bind such party to the terms and conditions of this Agreement. Each party is entitled to rely upon this representation as respects the authority of the person signing this Agreement on behalf of the other party. This Agreement can be signed in multiple counterparts. A facsimile of a signature or other electronically transmitted signature has the same force and effect as an original signature.

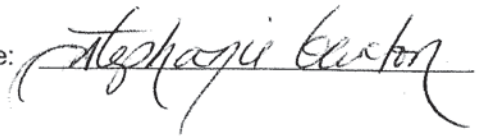
IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives as of the day and year first written above.

NRC ENVIRONMENTAL SERVICES INC.

Name: Stephanie Barton

Address: 20500 Richmond Beach Drive NW

Seattle, WA 98177

Signature: 

Title: Director, Emergency Response Programs

Attn: Stephanie Barton

Phone: 206-546-7162

Fax: 206-546-7170

E-mail: sbarton@nrces.com

CUSTOMER

Personal identifying information has been removed

Address: 290 Maple Court, Suite 290

Ventura, CA 93003

EXHIBIT "A"

TYPE OF OPERATION AND COVERAGE AREA
FOR RESPONSE SERVICES

1. Type of Operation: CUSTOMER's facilities and operations that may require Response Services under this Agreement are:

CUSTOMER's crude oil and natural gas platforms and pipelines located offshore from Ventura, Santa Barbara, and Orange Counties, California; as well as onshore facilities and pipelines in those and other counties.

2. Coverage Area: The coverage areas requiring Response Services are:

Southern California shorelines

EXHIBIT "B"

NRCES SCHEDULE OF RATES

RETAINER ADDENDUM

THIS RETAINER ADDENDUM modifies and amends the following sections of that certain Emergency Response and Service Agreement ("Agreement") effective this 1st day of July, 2006, by and between NRC ENVIRONMENTAL SERVICES INC. ("NRCES") and DCOR, LLC ("CUSTOMER") to the extent expressly stated below. In the event of any conflict between the terms and conditions of this Retainer Addendum and the terms and conditions of the Agreement, the terms and conditions of this Retainer Addendum shall prevail.

2.3: NRCES expressly agrees that NRCES is obligated under the Agreement to provide CUSTOMER with primary emergency response capability for Shoreline Cleanup and CUSTOMER may name NRCES as its contractor for Shoreline Cleanup for response to discharges as required under Federal Law and State Law, limited to the Shoreline Cleanup requirement that CUSTOMER ensure the availability of a contractor capable of effecting a shoreline cleanup operation commensurate with the quantity of emulsified petroleum oil to be planned for in shoreline cleanup operations. Unlike other planning requirements for response resources under Federal Law and State Law, there are no planning requirements, response resource criteria or response times for Shoreline Cleanup capability and this Agreement shall not create any obligation beyond that required under Federal or State Law. This Agreement does not include any obligation for NRCES to provide other response resources required by Federal Law or State Law other than shoreline cleanup operations, unless the Agreement is modified to include these additional services for additional fees. This Agreement does, however, include the right for CUSTOMER to request NRCES to provide response resources to respond to a Discharge as a supplemental resource, without any response time or response resource capability commitment.

2.3.1 Personnel and Equipment. In order to provide CUSTOMER with the primary emergency response action capability described in Article 2.3 and to continuously maintain in a state of readiness in accordance with industry standards, NRCES will:

(a) Maintain personnel current in spill control and cleanup technology and capable of administering the response to spills of Waste required by this Agreement (Personnel).

(b) Maintain equipment and vessels (Equipment) able to be deployed to a spill site without delay, not counting normal maintenance and repairs and prior response initiations; and

(c) Upon an initiation of Response Services, promptly dispatch Personnel and Equipment to the scene of the emergency, the size and scope of each to be determined by Customer.

2.3.2. Upon an initiation request by CUSTOMER, NRCES shall notify CUSTOMER immediately if NRCES cannot carry out the Response Services in the event a CUSTOMER spill occurs while NRCES Personnel and Equipment are committed to other work. Recognizing NRCES' obligation to continue a response action once begun, in such event NRCES will solicit a prioritization decision from the Federal or State On Scene Coordinator if so requested by CUSTOMER.

2.5 Contingency Plans. During the term of this Agreement, including all renewal periods, CUSTOMER shall be entitled to name NRCES in its state and federal contingency plans as a primary responder available to provide oil spill cleanup services described in Article 2.3 to CUSTOMER to the extent set forth in this Agreement.

5.1.2 Standby Service Fee. CUSTOMER will pay NRCES a standby service fee in the amount of Twelve Hundred and Fifty Dollars ($1250.00) per year in advance for NRCES to provide the services described in this Addendum. This fee is due and payable upon the execution of this Retainer Addendum by CUSTOMER and NRCES and thereafter upon every anniversary of the

effective date of this Agreement. Beginning of this first anniversary of the effective date of this Agreement, and annually thereafter (each such date an "Adjustment Date"), the standby service fee shall be adjusted in accordance with the change, if any, in the Consumer Price Index, All Urban Consumers, Los Angeles-Riverside-Orange County Area, 1982-1984 = 100 (the"CPI"). The adjustment shall be calculated as follows: The initial standby service fee of $1,250.00 shall be multiplied by a fraction, the numerator of which shall be the CPI for the month of March in which the Adjustment Date occurs, and the denominator shall be the CPI for March 2006. The sum so calculated shall constitute the adjusted standby service fee due and payable that year. The service fee shall also be subject to any other reasonable increases due to changes in operational or legislative requirements. This standby service fee is in addition to the obligation of CUSTOMER to pay for all Response Services, including drills and exercises, provided under this Agreement for Personnel and Equipment mobilized to the spill site in accordance with Article 5 of the Agreement.

12.1 Term: The Agreement, as modified by this Addendum, will commence on the date it is executed by both CUSTOMER and NRCES and will continue in effect for a period of one year. This Agreement shall be automatically renewed for additional one year periods unless either party gives written notice to the other of termination by at least ninety (90) days prior to the end of any annual period.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives as of the day and year as referenced above.

CUSTOMER **NRCES**

Personal indentifying information has been removed

BENFIELD

CERTIFICATE OF LIABILITY INSURANCE

7/26/2006

PRODUCER:	THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.	
BENFIELD CORPORATE RISK ONE NEW YORK PLAZA, STE. 3210 NEW YORK, NY 10004	**COMPANIES AFFORDING COVERAGE**	
	COMPANY A	ZURICH AMERICAN INSURANCE COMPANY
	COMPANY B	AMERICAN ZURICH INSURANCE COMPANY
INSURED:	COMPANY C	STEADFAST INSURANCE COMPANY
NRC Environmental Services Inc. Pier D, Berth D47 Long Beach, CA 90802	COMPANY D	SIGNAL MUTUAL INDEMNITY ASSOCIATION LIMITED
	COMPANY E	UNITED STATES FIDELITY AND GUARANTY COMPANY
	COMPANY F	STEADFAST INSURANCE COMPANY
	COMPANY G	

COVERAGES

NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, CONDITIONS AND EXCLUSIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	**GENERAL LIABILITY**				GENERAL AGGREGATE	$ 1,000,000
	[X] COMMERCIAL GENERAL LIAB.	GLO 9009313	11/1/2005	11/1/2006	PRODUCTS-COMP/OP AGG	$ 1,000,000
	[ ] CLAIMS MADE [X] OCCUR.				PERSONAL & ADV INJURY	$ 1,000,000
	[ ] OWNER'S & CONTRACTOR'S PROT.				EACH OCCURRENCE	$ 1,000,000
	[ ] _____				FIRE DAMAGE (ANY ONE FIRE)	$ 100,000
					MED. EXP. (ANY ONE PERSON)	$ 5,000
B	**AUTOMOBILE LIABILITY**					
	[x] ANY AUTO	BAP 9009314	11/1/2005	11/1/2006	COMBINED SINGLE LIMIT (each)	$ 1,000,000
	[ ] ALL OWNED AUTOS				BODILY INJURY (per person)	
	[ ] SCHEDULED AUTOS				BODILY INJURY (per accident)	
	[x] HIRED AUTOS				PROPERTY DAMAGE (per accident)	
	[x] NON-OWNED AUTOS					
	[ ] _____					
C	**EXCESS/UMBRELLA LIABILITY**					
	[ ] [ ] CLAIMS MADE [X] OCCUR.	SEO 9029881	11/1/2005	11/1/2006	EACH OCCURRENCE	$ 10,000,000
					EXCESS OF	
D	**U.S. LONGSHORE & HARBOR WORKERS (Compensation Risks)**	21400	10/1/2005	10/1/2006	[X] STATUTORY [ ] OTHER	
E	**WORKERS' COMPENSATION AND EMPLOYERS LIABILITY**				[X] STATUTORY [ ] OTHER	
	THE PROPRIETOR / PARTNERS / EXECUTIVE OFFICERS ARE:	D274W00069	10/1/2005	10/1/2006	EL EACH ACCIDENT	$ 1,000,000
	[ ] INCLUDED				EL DISEASE - EACH EMPLOYEE	$ 1,000,000
	[ ] EXCLUDED				EL DISEASE - POLICY LIMIT	$ 1,000,000
F	**CONTRACTORS POLLUTION / E&O**	PEC 9009310	11/1/2005	11/1/2006	LIMIT (ANY ONE OCCURRENCE)	$ 1,000,000

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS:

RE: Emergency Response and Services Agreement
DCOR, LLC is an additional insured as required by written contract.

CERTIFICATE HOLDER	CANCELLATION
DCOR, LLC 290 Maple Court, Suite 290 Ventura, CA 93003 Attn: Jeff Warren	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.
	AUTHORIZED REPRESENTATIVE **BY:** Sherrie Boatman Sherrie Boatman

DCOR, LLC
MASTER SERVICE AGREEMENT

SEE ATTACHED CONDITIONS

NOTICE: THIS AGREEMENT CONTAINS INDEMNITY, RELEASE, DEFENSE AND ARBITRATION PROVISIONS

THIS AGREEMENT is made and entered into this 14th day of June, 2007 by and between DCOR, LLC, a Texas limited liability company (herein called "COMPANY"), with offices at 290 Maple Court, Suite 290, Ventura, CA 93003, (805) 535-2000 voice, (805) 535-2100 facsimile and PATRIOT ENV. SERVICES, INC., [on behalf of itself and its direct and indirect wholly-owned subsidiaries] (herein called "CONTRACTOR"), with offices at;

1900 W. ANAHEIM ST.
LONG BEACH, CA 90813

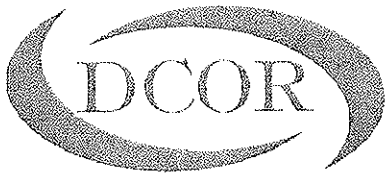
Voice: 800 624 9136
Facsimile: 562 436 2688

I. DESCRIPTION OF WORK:

COMPANY desires to employ CONTRACTOR from time to time to perform work, provide services and/or the sale of equipment, materials, supplies or other products offered by CONTRACTOR ("Work"). Such Work to be rendered by CONTRACTOR shall be in the scope of its usual business, excluding any geophysical seismic surveys or geophysical data processing or analysis. Work as may be mutually agreed upon shall be performed by CONTRACTOR in accordance with the terms and conditions attached hereto as Exhibit "A" ("Conditions") and in accordance with the relevant scope of work document ("Work Order"). Such Work Orders for work estimated to cost less than $1,000 may be oral, all other work orders must be in writing. CONTRACTOR's representative, identified below and any subsequent representative designated in writing, is authorized to act for and on behalf of CONTRACTOR and to accept and execute on behalf of CONTRACTOR supplements to any such Work Orders.

II. MATERIAL, EQUIPMENT, FACILITIES, SERVICES, LABOR, ETC.:

All materials, equipment, machines, tools, supplies, facilities, services, labor and supervision required to perform such Work shall be furnished by CONTRACTOR as set forth in the applicable Work Order. CONTRACTOR shall have no responsibility for any materials furnished by COMPANY, nor any responsibility for materials specified by COMPANY; provided such materials used are the same materials as specified by COMPANY.



III. AGREEMENT PRICE:

COMPANY will pay CONTRACTOR for such Work in accordance with paragraph 10 of the Conditions. CONTRACTOR shall submit invoices and field drop tickets to COMPANY for all such Work to which shall be attached such documentation as shall be designated by COMPANY.

IV. PERIOD OF PERFORMANCE:

This Agreement shall be effective upon execution by both parties and shall continue in force until either party to this Agreement shall cancel the same by giving fifteen (15) days prior written notice, except as to Work then in progress as to which this Agreement shall remain in force until completion of the same, subject to the provisions of paragraph 8 of the Conditions. Neither party hereto shall by the termination of this Agreement be relieved of its respective obligations and liabilities arising from or incident to Work performed prior to the date of such termination. In the event of termination by COMPANY, CONTRACTOR shall be entitled to recover from COMPANY all monies due for that part of the Work completed prior to such termination, plus reasonable costs actually incurred or committed to by CONTRACTOR (such as costs which are not cancelable or recoverable or for specially engineered or manufactured equipment) and demobilization costs, if applicable.

V. OTHER TERMS AND PROVISIONS:

A. This Agreement (including the Conditions in Exhibit "A", the Insurance Coverage Requirements in Exhibit "B", and, if and insofar as applicable to the Work, the Radioactive Source Procedures in Exhibit "C") and all applicable Work Orders constitute the whole agreement between CONTRACTOR and COMPANY. Any purported contrary or additional provisions of any type or kind (including any provisions in any schedule of rates, purchase order, field work orders, work tickets, invoices, statements or any other type of memoranda or other documents used by either party in the normal course of business) which change or purport to change the contractual relationship between COMPANY and CONTRACTOR, to limit the liability of CONTRACTOR or COMPANY, or to otherwise change the provisions of this Agreement, shall be null and void.

B. No supplement to or any modification of this Agreement (other than oral Work Orders) shall be binding upon either party for any reason or by any means unless first accepted in writing by an authorized representative of each party.

C. Should any conflict exist between this Agreement (including the Conditions and attached Insurance Coverage Requirements) and any other document attached to, incorporated or referred to in, or contemplated by this Agreement, including without limitation any Work Order (written or oral), statement, purchase order, invoice, or any other type of memoranda or other form of expression, the provisions of this Agreement shall control. Should any conflict exist between the printed Conditions of this Agreement and any other provisions of this Agreement, the printed Conditions of this Agreement shall control.

D. All notices and other communications provided for herein shall be given or made by telecopy, courier, or U. S. Mail in writing and telecopied, mailed, or delivered to the recipient at the addresses specified within the opening paragraph of this Agreement. All such communications shall be deemed to have been duly given (i) when transmitted, if transmitted by telecopier before 1:00 PM local time on a business day (otherwise the next business day), (ii) when delivered, if personally delivered, or (iii) in the case of a mailed notice, three (3) business days after the date deposited in the U. S. Mail, postage prepaid, and in each case given or addressed as provided above. Either party may change its address shown by giving written notice thereof to the other party.

Executed in duplicate as of the first date above written.

"CONTRACTOR"
PATRIOT ENVIRONMENTAL SERVICES, INC.

By: _____

Title: PRES/CEO

"COMPANY"
DCOR, LLC

Personal identifying information has been removed

Title: Vice President

License Number: _____

CONTRACTOR'S AUTHORIZED REPRESENTATIVES:

JOHN T. HOLMES [NAME]
VP - OPERATIONS [OFFICE/TITLE]
MIKE SULLIVAN [NAME]
CFO [OFFICE/TITLE]
_____ [NAME]
_____ [OFFICE/TITLE]
_____ [NAME]
_____ [OFFICE/TITLE]

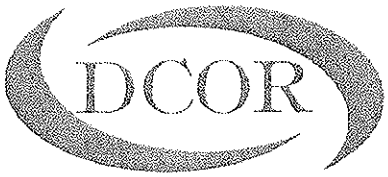


EXHIBIT "A"

CONDITIONS TO MASTER SERVICE AGREEMENT

1. Safety: The equipment and work areas involved in the Work under this Agreement are in and part of a producing oilfield and may contain hazards, including without limitation, flammable, corrosive and/or toxic liquids or gases. CONTRACTOR acknowledges that CONTRACTOR accepts the entire risks of such hazards to the employees, tools, equipment and materials of CONTRACTOR and its subcontractors. CONTRACTOR shall be solely responsible for notifying its employees, and those of its subcontractors, of all health and safety hazards to which they may be exposed, and CONTRACTOR hereby assumes the responsibility to train them in accordance with federal and state OSHA requirements and to provide all necessary protective clothes and equipment for them.

[Initials] _____

While performing work under this Agreement, CONTRACTOR shall provide and maintain a safe working environment for, and shall adequately protect the health and safety of the employees and representatives of COMPANY, CONTRACTOR, CONTRACTOR's subcontractors, and all third parties. CONTRACTOR shall at all times prescribe and enforce appropriate safety standards for the Work which shall comply with its own safety rules and regulations as well as all applicable federal, state and local standards. CONTRACTOR will comply with such safety rules as may be requested by COMPANY.

2. Information; Reports; Safety Audits: Upon its execution of this Agreement. and in any event prior to commencement of any Work, and annually thereafter CONTRACTOR shall provide COMPANY, in writing, (a) CONTRACTOR's current Experience Modification Rate as determined by CONTRACTOR's Workers Compensation insurance carrier, (b) CONTRACTOR's current OSHA "Form 300" summary of its past 3-years' OSHA statistics, (c) a copy of CONTRACTOR's injury and illness prevention plan, and (d) a description of all other safety programs and plans of CONTRACTOR. CONTRACTOR shall orally report to COMPANY and follow up with a written report to COMPANY (both as soon as practicable) all incidents or occurrences involving death or significant injury or property damage in connection with CONTRACTOR's performance. CONTRACTOR shall furnish COMPANY copies of all reports made by CONTRACTOR to its insurer, to any government agent or agency, or to others regarding such incident or occurrence. COMPANY shall have the right to audit the books and records of CONTRACTOR bearing on the matters discussed in this Condition 2, on reasonable notice and during normal business hours in the offices of CONTRACTOR.

3. Title and Quality: CONTRACTOR warrants the title to all articles sold and materials supplied hereunder and warrants that all articles sold and materials and work supplied hereunder are of good quality, free of any defects in full accord with all COMPANY specifications. All manufacturers' warranties or guarantees shall specifically extend to COMPANY and shall be furnished to COMPANY, but such extension and furnishing shall in no way relieve CONTRACTOR of any of its obligations hereunder. Should CONTRACTOR's title to any article or material fail, the provisions of Condition 19 hereof shall apply. Should any article, material or work, in COMPANY's sole opinion, not be of good quality, not be free of defects, or not conform to COMPANY's specifications, CONTRACTOR shall promptly replace same at CONTRACTOR's sole expense and subject to the provisions hereof. Payment or acceptance by COMPANY shall not constitute a waiver of the foregoing. Nothing herein contained shall be construed to exclude or limit any warranties implied by law.

4. Taxes: Unless otherwise provided, CONTRACTOR assumes exclusive liability for, and shall pay before delinquent, all sales, use, excise and other taxes, charges or contributions of any kind now or hereafter imposed on, with respect to, or measured by, the articles sold or materials or work furnished hereunder or the wages, salaries, or other remuneration paid to persons employed in connection with the performance of the work hereunder, and CONTRACTOR shall indemnify and hold COMPANY harmless from any liability and expense by reason of CONTRACTOR's failure to pay such taxes, charges, or contributions.

5. Compliance with Laws, Permits: In the performance of this Agreement and in every activity connected therewith, CONTRACTOR shall comply fully with all applicable federal, state and local laws, ordinances, rules, regulations, and orders, and shall furnish COMPANY such evidence of compliance as COMPANY may require at any time. CONTRACTOR shall secure and keep in effect all permits and licenses required by public bodies in connection with qualifying for and performing the work covered hereby, and CONTRACTOR shall obtain and pay for all mechanical, electrical and plumbing plan checks and permits required for such work. CONTRACTOR agrees not to discriminate against any employee or applicant for employment because of race, color, religion, sex, ancestry, national origin, age or otherwise. Any failure of CONTRACTOR to meet its obligations under this paragraph shall constitute a default of this Agreement by CONTRACTOR.

6. Patent Infringements: CONTRACTOR shall defend, indemnify and hold COMPANY harmless from and against any and all loss, liability or expense by reason of any claim or suit for alleged infringement of any copyright, trademark, or patent, resulting from or arising in connection with the manufacture, sale, use or other disposition of any article or material furnished hereunder, or the performance of any work hereunder, and shall defend any such claim or suit and pay all costs and expenses incidental thereto; provided, however, that COMPANY shall have the right, at its option, to participate in the defense of any such claim or suit, without relieving CONTRACTOR of any obligations hereunder.

7. Assignments and Subcontracts: Any assignment, whether by operation of law or otherwise, of this Agreement or of any claim against COMPANY arising directly or indirectly out of or in connection with this Agreement, and any subcontract of any obligation hereunder, whether by operation of law or otherwise, shall be void without the prior written consent of COMPANY.

8. Default: Notwithstanding the provisions of Condition 11 hereof, if CONTRACTOR or any subcontractor shall breach any provision hereof, shall become insolvent, enter voluntary or involuntary bankruptcy or receivership proceedings, or make an assignment for the benefit of creditors, or if CONTRACTOR shall fail, neglect, refuse or be unable at any time to provide ample equipment or labor to perform the work at a rate of progress deemed reasonably sufficient by COMPANY, COMPANY shall have the right (without limiting any other rights or remedies which it may have hereunder or by operation of law) to terminate this Agreement by written notice to CONTRACTOR, whereupon COMPANY shall be relieved of all further obligation hereunder except only the obligation to pay the reasonable value of CONTRACTOR's prior performance, and CONTRACTOR shall be liable to COMPANY for all costs incurred by COMPANY in completing or procuring the completion of performance in excess of the difference between the agreed price and such reasonable value of CONTRACTOR's prior performance.

[Initials] _____

COMPANY's right to require strict performance of any obligation hereunder shall not be affected by any previous waiver, forbearance, or course of dealing.

9. Withholding of Payments: COMPANY shall have the right to withhold any monies payable by it to CONTRACTOR hereunder and apply same to the payment of any obligations of CONTRACTOR to COMPANY whether or not arising out of this Agreement.

10. Prices: Unless otherwise specified in any applicable supplement hereto, COMPANY shall pay CONTRACTOR, for the complete performance of CONTRACTOR's obligations, the prices quoted by CONTRACTOR, of if there are no such prices quoted then in accordance with applicable posted or published price lists or schedules, or if there are no such lists or schedules then in accordance with the prices of CONTRACTOR in effect on the date of shipment of any article covered hereby or the date of any work performed hereunder, less applicable discounts. If this agreement is based upon a bid of CONTRACTOR as awarded by COMPANY, any attached schedules or rates may be changed only pursuant to any provisions for such change set forth in COMPANY's request for bid. Any other schedules of rates may be changed from time to time by CONTRACTOR filing revised and dated schedules of rates with COMPANY, which revised schedules of rates, shall become effective only after written approval thereafter by COMPANY. Provided COMPANY has given prior approval for CONTRACTOR to furnish any item through a third party or on a subcontracted basis, COMPANY shall pay CONTRACTOR for same at CONTRACTOR's net cost (after applicable discounts) plus a handling charge as set forth in any applicable supplement hereto. Copies of third party subcontractor invoices shall support CONTRACTOR's billings for such items.

11. Excuses for Non-performance: Except as provided in Condition 8 hereof, either party shall be absolved from its obligations under the Agreement when and to the extent that performance is delayed or prevented (and in COMPANY's case when and to the extent that its need for the articles, materials or work to be supplied hereunder is reduced or eliminated) by reason of acts of God, fire, explosion, war, riots, strikes, or governmental laws, order or regulations.

[Initials] _____

12. Audit: If any payment provided for hereunder is to be made on the basis of CONTRACTOR's cost, rates or other flexible billing basis, COMPANY shall have the right to audit CONTRACTOR's books and records pertinent thereto. CONTRACTOR agrees to maintain such books and records for a period of two (2) years from the date of invoice to COMPANY and to make such books and records available to COMPANY at any reasonable time or times within the two-year period for COMPANY's use in making such audits.

[Initials] _____

13. Arbitration and Applicable Law: Any controversy or claim arising out of or relating to this Agreement, or the breach thereof, shall be settled by negotiation of the parties, or by arbitration in Ventura County, California, in accordance with the rules, then obtaining, of the American Arbitration Association, and judgment upon any award rendered may be entered in any court having jurisdiction thereof. The laws of the State of California shall govern any matter arising out of or relating to this Agreement, or the breach thereof.

14. Performance: CONTRACTOR shall diligently and carefully perform all work in a good and workmanlike manner and shall be fully responsible for all work and services performed by any subcontractors. CONTRACTOR shall conduct all operations in CONTRACTOR's own name as an independent CONTRACTOR and not in the name of, or as agent for, COMPANY. COMPANY shall have no voice in the control of CONTRACTOR's employees, representatives or subcontractors, nor shall it have any right to direct or control CONTRACTOR in the method of performance or the means of accomplishing the desired result. CONTRACTOR shall be responsible for the results.

15. Liability and Indemnity: CONTRACTOR shall be solely responsible for and shall defend, indemnify and hold COMPANY and COMPANY's officers, agents and employees, harmless from and against all losses, claims, liabilities, demands, expenses and causes of action of all kinds (including without limitation those for damage to or loss of property of the parties and/or for injury, illness or death of persons who are employees of the parties) that may, in whole or in part, arise out of or in any way be connected to the performance of or the failure to perform work hereunder by CONTRACTOR or anyone on behalf of CONTRACTOR, whether negligent or not, and whether COMPANY is actively, passively, or not at all negligent or is held absolutely or strictly liable or to have breached any expressed or implied warranty. The only exceptions to the above undertakings of CONTRACTOR in this Condition 15 are that (1) COMPANY shall pay for any damage to or loss of CONTRACTOR's property which is under the sole control of COMPANY at the time of damage or loss unless arising out of or resulting from any negligence on the part of CONTRACTOR or its subcontractors, (2) CONTRACTOR shall not pay for any damage to or loss of subseafloor (offshore) or subsurface (onshore) property, except only and insofar as arising out of or resulting from any negligent or otherwise wrongful act or omission on the part of CONTRACTOR or its subcontractors, and (3) CONTRACTOR's undertakings other than to defend shall not apply to any matter which is determined by final judgment of a court having jurisdiction to have been caused solely by the negligence or willful misconduct of COMPANY. Except only as expressly set forth above, the insurance required to be carried by CONTRACTOR under this Agreement shall not limit, or be construed to limit, the undertakings of CONTRACTOR in this Condition 15.

[Initials] _____

16. Acceptance: Either CONTRACTOR's written acceptance hereof, the shipment of any articles by CONTRACTOR, or the commencement of any work hereunder by CONTRACTOR shall constitute acceptance by CONTRACTOR of this Agreement and no contrary or additional terms or conditions shall apply notwithstanding any oral or written statement made by CONTRACTOR.

17. Use of Premises: CONTRACTOR shall perform all work in such manner as to cause a minimum of interference with COMPANY operations and the operations of other contractors working on COMPANY's lands, or facilities (the "Premises"), shall take all necessary precautions to protect the Premises and all persons and property thereon from damage or injury, and shall assume responsibility for the taking of such precautions by CONTRACTOR's employees, agents, licenses, permit tees and subcontractors. Upon completion of the work, CONTRACTOR shall leave the premises clean and free of all tools, equipment, waste materials and debris.

18. Prohibited Items: It is COMPANY's policy that no person shall be under the influence of alcohol or drugs while on Premises and that the use, possession, sale, transfer, or purchase of alcohol, drugs, firearms, or contraband on Premises is prohibited. Entry into or onto properties by employees of CONTRACTOR or of its subcontractors shall be deemed acceptance of COMPANY's policy and consent to inspection of persons, personal effects, vehicles and other property at any time. Violation of such policy or refusal to submit to inspection shall be cause for removal from premises. CONTRACTOR agrees that each of its and its subcontract employees entering Premises shall fully comply to such policy. As requested by COMPANY from time to time, CONTRACTOR shall require such employees to satisfactorily pass testing procedures at CONTRACTOR's cost.

19. Payments of Bills and Liens: CONTRACTOR shall pay promptly all indebtedness for labor, materials, tools and equipment furnished by CONTRACTOR and any subcontractors in the performance of this Agreement. Before CONTRACTOR shall be entitled to receive payment, CONTRACTOR shall, when requested by COMPANY, furnish evidence satisfactory to COMPANY of the full payment of such indebtedness. CONTRACTOR shall not permit any lien or charge to attach to the work or the premises upon which the work is

being performed. Should any lien attach, CONTRACTOR shall promptly procure its release and shall indemnify COMPANY for all loss, cost, damage, fees, or expense incidental thereto.

20. Changes in Work: Changes in the work may be required from time to time by COMPANY. Should changes be so required, they shall not be commenced until CONTRACTOR is given written instruction from COMPANY which shall specify the changes, the sums (or the method of determining the sums) to be added to or subtracted from the agreed price as a result of such changes, and the effect, if any, of such changes on the completion or delivery dates. Should CONTRACTOR dispute any of the provisions of the instructions it shall notify COMPANY within forty-eight (48) hours and the parties shall settle their differences by negotiation.

21. Insurance: As provided in the attached Insurance Coverage Requirement Sheet (Exhibit "B").

22. Time Sheets: All services which are calculated on a time-worked basis shall be evidenced by time sheet (individually signed by employees) to be prepared daily by CONTRACTOR and submitted to COMPANY as may be required by COMPANY. Such time sheets shall reflect the date, names, classifications and hours worked by each person, and the description, identification and hours of use of each item of equipment used, and such other information as may be required by COMPANY.

EXHIBIT "B"

DCOR, LLC
INSURANCE COVERAGE REQUIREMENTS

At all times during the term of this Agreement, CONTRACTOR shall at its own expense maintain in force insurance of the type noted below, written by an insurance company or companies : 1) Licensed to do business in the State in which the work is located, 2) Maintain a rating in the most recent "Best Insurance Guide" of not less than A-6, 3) Be acceptable to COMPANY, 4) Maintain limits not less than the amounts provided below in this Insurance Coverage Requirement Sheet. All such insurance shall be evidenced by the completion, execution and delivery to COMPANY of an Insurance Certificate in the form attached hereto. Upon request, CONTRACTOR shall furnish to COMPANY certified copies of such insurance policies. References herein to the COMPANY Group mean and include COMPANY and COMPANY's parent, affiliates, subsidiaries and related companies and its and their officers, directors, agents, consultants and employees, and references herein to the CONTRACTOR Group mean and include CONTRACTOR and CONTRACTOR'S parent, affiliates, subsidiaries and related companies and its and their officers, directors, agents, consultants and employees.

To the extent of the release and indemnity obligations assumed by CONTRACTOR under the terms of this Agreement, each policy shall contain an agreement whereby the CONTRACTOR and its insurer waive their right of subrogation, whether by loan receipt, equitable assignment or otherwise, against COMPANY Group. To the extent of the release and indemnity obligations assumed by COMPANY under the terms of this Agreement, each insurance policy of COMPANY shall contain an agreement whereby COMPANY and its insurer waive their right of subrogation, whether by loan receipt, equitable assignment or otherwise, against CONTRACTOR Group.

1. Statutory Workers' Compensation and Employer's Liability insurance in full compliance with all state and federal laws and regulations applicable to any work or services to be performed hereunder and covering all of CONTRACTOR's employees and agents. Where necessary, for proper coverage of such operations, this insurance shall be endorsed to cover Maritime Employer's Liability, Jones Act, Death on the High Seas Act, Federal Long shore and Harbor Worker's Compensation Act including extension to the Outer Continental Shelf for statutory limits. The Employer's Liability coverage shall provide for (1) "All States" endorsement, (2) Voluntary Maritime Compensation of $250,000 for each person and $1,000,000 for each accident with maintenance, wages and cure provided, and (3) Employer's Liability limit of $1,000,000 each accident.

   This policy shall also be endorsed to provide that claims "in rem" shall be treated as if made "in person am".

2. Comprehensive or Commercial general liability insurance , on a occurrence form, including :

   Premises/Operations covering all Contractors' operations, Products/Completed Operations liability, Independent Contractor's and blanket contractual liability coverage (subject to policy terms, conditions and exclusions). The Comprehensive General Liability policy shall contain a limit of **$1,000,000** combined single limit for bodily injury and property damage each occurrence. If this Contract contemplates Work over water, the Watercraft Exclusion shall be deleted. COMPANY Group shall be named as additional insured, but only to the extent of the release and indemnity

obligations assumed by CONTRACTOR under this Agreement. The policy shall be endorsed to provide XCU coverage and that claims "in rem" shall be treated as if made "in person am".

3. Comprehensive Automobile liability insurance policy on an occurrence basis covering the ownership , maintenance and use of all owned, hired or otherwise operated non-owned vehicles with a minimum combined single limit for bodily injury and property damage of $1,000,000 each occurrence. This policy shall be endorsed to name Company Group as additional Insured.

4. To the extent this Agreement requires CONTRACTOR to provide any aircraft, Aircraft Liability insurance shall be provided for all owned and non-owned aircraft (including motorcraft and helicopters) with a limit of not less than **$5,000,000** single limit Bodily Injury and Property Damage Liability each occurrence, including passengers.

5. Excess Liability with a minimum limit of **$4,000,000** serving to increase all primary coverage set forth in all Sections above.

INSURANCE PROVISIONS APPLICABLE TO ALL SECTIONS ABOVE:

- CONTRACTOR shall provide at least thirty (30) days notice of cancellation, material change or reduction thereof and Insurance Companies shall endorse all policies required to provide 30 day notice of policy cancellation or non renewal.

- If any Claim for which CONTRACTOR is liable to COMPANY or any third party under this Agreement, and which is within the scope of the insurance required to be maintained by CONTRACTOR under this Agreement, is denied, in whole or in part, by the underwriters of said insurance, CONTRACTOR shall hold harmless COMPANY and its underwriters against all such Claims insofar but only insofar, as CONTRACTOR is liable for the same.

- CONTRACTOR shall provide COMPANY with certificates of insurance which evidence the Insurance waivers and endorsements required by this Exhibit before the commencement of any Work. Renewal certificates of insurance are required for insurance coverage required in this Exhibit which expire during the term of this Agreement.

EXHIBIT "C"

RADIOACTIVE SOURCE PROCEDURES

1. If a tool or drill string, containing radioactive materials, becomes lodged below the rotary table,

   COMPANY will:

   A. Make a reasonable effort to recover the source. The recovery effort shall not be performed in a manner which, in the opinion of CONTRACTOR or COMPANY, could result in the rupture of the source capsule.

   CONTRACTOR will:

   A. Provide to COMPANY a complete description of the instrument or sub including the specific location of the source capsule in the instrument or sub.

   B. Advise COMPANY and the fishing service company that any procedures used must not damage or rupture the sealed source capsule.

   C. Conduct radiation monitoring to check for mud contamination.

   D. Notify COMPANY and the fishing service company to immediately cease all operations if damage to the source capsule is detected.

   E. Notify the appropriate governmental agencies as required by applicable regulations.

2. If it becomes apparent that efforts to recover the source will not be successful,

   CONTRACTOR will:

   A. Notify the appropriate governmental agencies by telephone and obtain requisite approval of abandonment procedures.

   B. Advise COMPANY of the abandonment procedures required based upon prior approval from the governing agencies.

3. The following steps will be accomplished within thirty (30) days after permission to abandon is granted,

   COMPANY will:

   A. Follow all abandonment procedures that were reported to and approved by the appropriate agencies. Normal abandonment procedures for drill string tools include:

      1) Install a deflection device above the source(s) to prevent the source(s) from being drilled into during other drilling operations. In most cases the CONTRACTOR's drill collar will be used as the deflection device.

      2) Immobilize and seal in place the CONTRACTOR's sub(s) containing the sealed source(s) by cementing operations.

      3) Mix red dye into the cement as required.

      4) Pump enough cement to leave a minimum of 100 ft. above the fish.

      5) Mount a permanent identification plaque at the surface of the well or wellhead unless the mounting of the plaque is not practical.

   B. Follow all abandonment procedures that were reported to and approved by the appropriate agencies. Normal abandonment procedures for wireline instrument tools include:

      1) Immobilize and seal in place the CONTRACTOR's instrument(s) containing the sealed source(s) by cementing operations

2) Mix red dye in to the cement as required.
3) Pump enough cement to leave a minimum of 100 ft. above the fish.
4) Install a deflection device above the cement to prevent the source(s) from being drilled into during other drilling operations.
5) Mount a permanent identification plaque at the surface of the well or wellhead unless the mounting of the plaque is not practical.

CONTRACTOR will:

A. File a written report to the appropriate governmental agencies.

B. Provide to COMPANY a permanent identification plaque for mounting to the wellhead. The plaque will:
   1) Be constructed of long lasting material,
   2) Contain the following information engraved on its face:
      - the word "CAUTION"
      - the radiation symbol without color requirement
      - the date of abandonment
      - the COMPANY name
      - the well name and identification number or designation
      - the sealed source(s) by radionuclide and quantity of activity
      - the source(s) depth and the depth to the top of the plug
      - an appropriate warning, depending on the specific circumstances of each abandonment.

4. If damage to the source is detected, COMPANY will restrict the flow of drilling fluids, and the fluids coming from the wellhead will be contained and isolated in a restricted area.

5. If the environment, any equipment, or personnel are contaminated with radioactive material, COMPANY will assure that they are properly decontaminated.

6. COMPANY will furnish sufficient space for CONTRACTOR to properly store radioactive materials when those materials are not in use.

MASTER SERVICE AGREEMENT

THIS MASTER SERVICE AGREEMENT (this "Agreement") is made and entered into this 1st day of MAY, 2008, by and between DCOR, LLC, a Texas limited liability company ("Company") and American Integrated Services, Inc. ("Contractor").

For and in consideration of the mutual covenants and agreements herein contained and of the payments that may be made by Company to Contractor pursuant to the provisions hereof, the parties hereto mutually agree as follows:

1. Scope of Agreement. It is contemplated that, from time to time during the term of this Agreement, Company may (a) request that Contractor perform work or render services for the benefit or account of Company in connection with the construction and operation of Company's properties and facilities used in the exploration, development, production, and marketing of oil, gas, and other hydrocarbon substances and/or (b) purchase or rent equipment, materials, supplies, or other products offered by Contractor for use in connection with such activities (the "Services"). The word "Services", as used herein, contemplates any business activity of Contractor that requires its employees, agents, or representatives, or the employees, agents, or representatives of its subcontractors, to enter upon or utilize any property owned, leased, or operated (in whole or in part) by Company (the "Premises"), and/or that requires Contractor, or its subcontractors, to construct, install, recondition, maintain, or repair, for the benefit of Company, any personal property or fixture owned, leased, or operated (in whole or in part) by Company.

The Services may be requested by Company either orally or in writing. In the event Contractor agrees to undertake the performance of such Services for Company, the provisions of this Agreement shall govern and be fully applicable to the performance of all such Services and the relationship of the parties relating to or arising out of the performance of such Services shall be controlled and regulated hereby, except as specifically provided in writing to the contrary by the parties.

This Agreement does not obligate Company to order or request any Services from Contractor, nor does it obligate Contractor to accept orders or requests for Services from Company.

2. Term of Agreement. This Agreement shall have a term of one (1) year from and after the date hereof, and shall continue in full force and effect thereafter, on a year to year basis, until terminated by either Company or Contractor as hereinafter provided. It is understood and agreed that either party hereto may cancel this Agreement at any time, with or without cause, by giving the other party at least thirty (30) days' prior written notice of such cancellation. The cancellation or termination of this Agreement shall not apply to any Services in progress and the provisions of this Agreement shall remain in full force and effect until the completion of such Services.

Contractor shall be entitled to recover from Company all monies due for that portion of the Services completed prior to such cancellation or termination, plus reasonable costs actually incurred or committed to by Contractor (such as costs that are not cancelable or recoverable for specially engineered or manufactured equipment) and demobilization costs, if applicable. Neither party hereto shall by the cancellation or termination of this Agreement be relieved of its respective obligations and liabilities arising from or incident to Services rendered prior to the effective date of such termination.

3. Performance of the Services. All Services contemplated by the provisions of this Agreement shall be performed or rendered by Contractor with due diligence and in a good, workmanlike, and timely manner and Contractor shall be fully responsible for all Services performed by any subcontractors. Contractor shall perform the Services in such manner as to cause a minimum of interference with Company's operations and the operations of other contractors working on the Premises.

All materials, equipment, machinery, tools, supplies, labor, and supervision required by Contractor to perform the Services shall be furnished by Contractor at its sole expense; provided, however, Company may furnish such equipment, machinery, tools, supplies, labor, and supervision if agreed to in advance by Company and Contractor in connection with the performance and completion of a particular Service. If required, the cost of transporting Contractor's equipment, supplies, employees, and subcontractors to Company's offshore platforms will be negotiated by Company and Contractor prior to Contractor commencing the Services requiring such transportation.

Upon the completion of the Services, Contractor will promptly remove its materials and equipment from the Premises, clean up the Premises in a good and workmanlike manner, and pile excess or unused materials and debris at locations designated by Company for subsequent removal by Company or Contractor.

Contractor represents that it is an expert in the Services to be performed, that its employees have been trained to follow applicable laws, rules, and regulations and to work in a safe manner, and that all of Contractor's equipment has been thoroughly tested and inspected and is safe, sufficient, and free of any defects. Contractor acknowledges that Company will rely upon these representations.

4. Changes in the Services. Changes in the Services may be required from time to time by Company. Should changes be so required, they shall not be commenced until Contractor is given written instructions from Company that specify the changes, the sums (or the method of determining the sums) to be added to or subtracted from the previously agreed price as a result of such changes, and the effect, if any, of such changes on the completion or delivery dates. Should Contractor dispute any portion of these instructions it shall notify Company within forty-eight (48) hours after receipt of the instructions and the parties shall promptly attempt to negotiate a settlement of their disagreement. If Company and Contractor are unable to settle their disagreement, the matter may proceed to arbitration as provided herein, or either party may terminate this Agreement or the particular Service giving rise to the disagreement, as also provided herein.

5. Warranty of Title and Quality of Services. Contractor warrants the title to all equipment sold and materials supplied hereunder and further represents and warrants that all Services performed hereunder are of good quality, free of any defects, and in full compliance with all Company specifications. All third party manufacturers' warranties or guarantees shall extend to

Company and shall be specifically assigned to Company, but the extension and furnishing of such warranties and guarantees shall in no way relieve Contractor of any of its obligations hereunder. Should Contractor's title to any equipment or materials fail, Contractor shall indemnify and hold Company harmless from and against any and all losses, claims, demands, or causes of action arising thereunder. In such event, Company shall have the right to withhold payment for the equipment or materials and related Services until Contractor has cured its title defect to the complete satisfaction of Company. Should any Services performed hereunder not be of good quality, free of all defects, and not conform to Company's specifications, Contractor will immediately repair or replace such defective equipment or materials or reperform the defective Services as identified by Company at Contractor's sole expense subject to the provisions of this Agreement. Payment for or acceptance of the Services by Company shall not constitute a waiver of the foregoing provisions. Nothing herein shall be construed to exclude or limit any warranties implied by law.

6. Patent Infringement. Contractor shall defend, indemnify, and hold Company harmless from and against any and all losses, liabilities, or expenses by reason of any claim, demand, or suit for alleged infringement of any copyright, trademark, or patent resulting from or arising in connection with the manufacture, sale, use, or other disposition of any equipment, article, or material furnished hereunder or the performance of the Services and Contractor shall defend any claim or suit and pay all costs and expenses incidental thereto; provided however, Company shall have the right, at its option, to participate in the defense of any such claim or suit without relieving Contractor of any obligations hereunder.

7. Safety. Contractor understands that the Premises are located within and are a part of a producing oilfield and may contain hazards, including, without limitation, flammable, corrosive and toxic liquids and gases. With its execution of this Agreement, and subject to the provisions of Paragraph 14 herein, Contractor accepts the entire risk of such hazards to its employees, tools, equipment, and materials, and its subcontractors. Contractor shall be solely responsible for notifying its employees, and those of its subcontractors, of all health and safety hazards to which they may be exposed while working on the Premises, and Contractor assumes the responsibility to train such employees in accordance with applicable federal and state Occupational Safety and Health Administration ("OSHA") requirements and to provide all necessary protective clothing and equipment to its employees and the employees of its subcontractors.

While performing the Services, Contractor shall provide and maintain a safe working environment for, and shall adequately protect the health and safety of the employees and representatives of Company, Contractor, Contractor's subcontractors, and all third parties. Contractor shall at all times prescribe and enforce appropriate safety standards for the Services that comply with its own safety rules and regulations as well as all applicable federal, state, and local standards. In addition, Contractor will comply with any appropriate safety rules as may be requested by Company. Contractor agrees to limit smoking and the use of heat and/or fire implements, including welding and torch cutting tools, to such locations and occasions as are specifically authorized by Company.

8. Safety Reports and Audits. Upon the execution of this Agreement by Contractor (and prior to the performance of any Services) and annually thereafter, Contractor shall provide Company, in writing, (a) Contractor's current Experience Modification Rate as determined by Contractor's Workers' Compensation Insurance carrier, (b) Contractor's current OSHA Form 300 summary of its past three (3) years' OSHA statistics, (c) a copy of Contractor's injury and illness prevention plan, and (d) a description of all other safety programs and policies maintained by Contractor. Company shall have the right to audit the records of Contractor with respect to the

safety reports, programs, and policies described herein subject to providing Contractor reasonable notice of its intention to perform such audit. The audit will be performed during normal business hours in the principal office of Contractor.

9. Accidents. All accidents must be reported. In the event an accident involving the property, equipment, or employees of Contractor, Company, Contractor's subcontractors, or any third party arises out of, results from, or is in any way related to the performance of the Services or Contractor's presence on the Premises, Contractor shall immediately report such accident to Company's Safety Coordinator. The initial report of such an accident may be transmitted orally but this notification must be followed within twenty-four (24) hours of the accident by a written report prepared by Contractor and delivered to Company's Safety Coordinator. The written report must only contain factual information and should not contain opinion, speculation, or supposition as to fault, liability, or prevention. In addition, for each accident, Contractor shall provide Company's Safety Coordinator a copy of any and all reports, including statements or other investigative material or documents, that Contractor is required to submit to any regulatory agency, Contractor's insurers, or other third parties.

10. Prohibited Items. It is Company's written policy that no person shall be under the influence of alcohol or drugs while on the Premises and that the use, possession, sale, or purchase of alcohol, drugs, firearms, or contraband on the Premises is strictly prohibited. Entry onto the Premises by any employee of Contractor or its subcontractors shall be considered acceptance of this policy and consent to the inspection of persons, personal effects, vehicles, and other property at any time while on the Premises. In the case of Services performed on any Company offshore platform, such inspection may also be performed at the location of departure from shore or on the boat or vessel during transport. Violation of this policy or refusal to submit to inspection shall be cause for removal of the person involved from the Premises and may result in his or her permanent ban from the Premises, at Company's sole discretion. Contractor agrees that each of its employees, and the employees of its subcontractors, entering the Premises shall fully comply with this policy. At the request of Company, Contractor shall require its employees, and the employees of its subcontractors, to satisfactorily pass random urine testing procedures at the sole cost of Contractor.

11. Payment for the Services. Unless otherwise specified in any applicable supplement or amendment hereto, the consideration to be paid by Company to Contractor for the complete performance of the Services shall be the amount set forth and agreed to in any written work order, purchase order, delivery ticket, invoice, or other written agreement between the parties. If the Services are performed on the basis of a bid of Contractor as awarded by Company, any rates or schedules attached to the accepted bid may be changed only upon written approval of Company and Contractor. Any other rates and schedules of Contractor may be changed from time to time by Contractor only after Contractor has filed revised and dated schedules of rates with Company. With respect to the performance of future Services by Contractor, Company can either accept the revised rates and schedules of Contractor or employ the services of another contractor. Provided Company has given prior approval for Contractor to furnish any item or perform the Services through a third party or on a subcontracted basis, Company shall pay Contractor for the same at Contractor's net cost (after any applicable discounts) as set forth in any applicable supplement to this Agreement. Copies of third party and subcontractor invoices shall support Contractor's invoices for such items or Services.

Contractor shall submit an invoice(s) and field drop tickets, if applicable, covering charges for Services performed during the preceding calendar month. The invoice(s) shall be mailed to Company at P. O. Box 3401, Ventura, CA 93006-3401 and shall provide (a) a complete

description of the Services performed and/or equipment and materials delivered, (b) the date, location, and hourly rates applicable to the Services performed, (c) the cost of the equipment and materials delivered, (d) a designation of whether an item is taxable and non-taxable, (e) any applicable work order or purchase order number issued by the Company, and (f) any other information reasonably required by Company to verify the completeness and accuracy of an invoice. All Services that are calculated on a time-worked basis shall be evidenced by time sheets (signed by each employee) to be prepared daily by Contractor and submitted to Company as may be required by Company. Such time sheets shall reflect the date, names, classifications, and hours worked by each employee, the description, identification, and hours of use of each item and equipment used, and such other information as may be reasonably required by Company.

Company shall pay all invoices within thirty (30) days following the receipt of each invoice that satisfies the requirements of this Paragraph 11. Any amounts that remain outstanding after such thirty (30)-day period shall accrue interest at the rate of twelve percent (12%) per annum or the maximum rate permitted by law, whichever is less. In the event Company disputes any invoice in whole or in part, Company shall promptly notify Contractor of the dispute and shall pay the undisputed portion of the invoice in accordance with the provisions herein. Thereafter, Company and Contractor will promptly settle and adjust any disputed amount.

12. Liens. Contractor shall promptly pay all indebtedness for labor, materials, tools, and equipment furnished by Contractor and any subcontractors in the performance of the Services. When requested by Company, Contractor shall furnish evidence satisfactory to Company of the full payment of such indebtedness and Company may withhold payment for the Services until such evidence has been furnished by Contractor. Contractor shall not permit any lien or charge to attach to the Services or the Premises. Should any lien so attach, Contractor shall promptly procure its release and shall indemnify and hold Company harmless from and against any and all losses, costs, damages, fees, or expenses incidental thereto.

13. Withholding of Payments. Company shall have the right to withhold any monies payable by it to Contractor hereunder and apply the same to the payment of any obligations of Contractor to Company whether arising out of this Agreement or otherwise.

14. Liability and Indemnity. Contractor shall be solely responsible for and shall defend, indemnify, and hold Company, and its parent, affiliate, subsidiary, and related companies, and its and their directors, officers, employees, insurers, and agents ("Company Group") harmless from and against all losses, claims, liabilities, demands, expenses, and causes of action of all kinds (including, without limitation, such matters arising out of damage to or loss of property of Company Group, Contractor, or third parties and injury to, illness, or death of persons employed by Company Group, Contractor, or third parties) that may, in whole or in part, arise out of or in any way be connected to the performance of or the failure to perform the Services by Contractor or anyone acting on behalf of Contractor, whether negligent or not, and whether Company is actively, passively, or not at all negligent or is held absolutely or strictly liable or to have breached any express or implied warranty. The only exceptions to the undertakings of Contractor hereunder are that (a) Company shall pay for any damage to or loss of Contractor's property that is under the sole and exclusive control of Company at the time of damage or loss unless arising out of or resulting from any negligence on the part of Contractor or its subcontractors, (b) that Contractor shall not pay for any damage to or loss of subseafloor (offshore) or subsurface (onshore) property, except and only insofar as arising out of or resulting from any negligent or otherwise wrongful act or omission on the part of Contractor or its subcontractors, and (c) Contractor's undertakings herein, other to defend, shall not apply to any matter that is determined

by final judgment of a court having jurisdiction to have been caused solely by the negligence or willful misconduct of Company.

The liability and indemnity provisions of this Agreement shall be without limit and shall include the obligation to indemnify for any punitive damages that might be awarded and reasonable attorneys' fees and costs incurred by the party receiving indemnification. With respect to the defense obligations of Contractor hereunder, Contractor shall indemnify Company for any claims, demands, and causes of action covered by the provisions set forth herein; provided, however, Company reserves the right, at its option, to participate at its own expense with attorneys of its choice, in the defense of any such claims, demands, or causes of action without releasing Contractor from any indemnity obligations hereunder.

Notwithstanding the foregoing, neither party hereto shall be liable to the other party for special, indirect, or consequential damages resulting from, arising out of, or related to this Agreement, including, without limitation, loss of profit, business interruption, and loss or delay of oil and gas production, however the same may be caused.

The indemnity provisions of this Paragraph 14 shall survive the termination of this Agreement.

15. Insurance. Contractor agrees to secure and maintain at its sole expense during the entire term of this Agreement the policies of insurance, and in the specified minimum amounts, set forth on Exhibit "A" attached hereto and by this reference made a part hereof.

Commencement of the Services without the required policies of insurance, failure to secure the endorsements on the policies as may be necessary to satisfy the terms and provisions of this Agreement, or failure to otherwise fully comply with any and all of the insurance provisions of this Agreement shall not constitute a waiver of any rights under this Agreement or act to relieve Contractor from the obligations of this Agreement. In the event that liability for any loss or damage be denied by an insurance company or underwriter, in all or in part, because of a breach of said insurance by Contractor or any other reason, the insolvency or bankruptcy of the insurance company or underwriter, or if Contractor fails to maintain any of the insurance policies required herein, such act shall not be held to affect, negate, or waive any of the provisions of this Agreement and Contractor shall defend, indemnify, and hold Company Group harmless from and against any and all claims, demands, costs, and expenses, including reasonable attorneys' fees, which would otherwise be covered by such insurance.

It is expressly agreed and understood that the insurance required to be carried by Contractor under the terms of this Agreement shall not limit, or be construed to limit, the undertakings of Contractor as provided in Paragraph 14 herein.

16. Payment of Taxes. Unless otherwise provided, Contractor assumes exclusive liability for, and shall pay before delinquent, all sales, use, excise, and other taxes, charges, or contributions of any kind now or hereafter imposed on, with respect to or measured by the articles sold, materials furnished, or Services rendered or the wages, salaries, or other remuneration paid to persons employed in connection with the performance of the Services, and Contractor shall indemnify and hold Company Group harmless from and against any liability and expense by reason of Contractor's failure to pay such taxes, charges, and contributions.

17. Compliance with Laws. In connection with the performance of the Services, Contractor agrees to fully comply with all applicable federal, state, and local laws, ordinances, rules,

regulations, and orders, and shall provide Company evidence of such compliance as Company may reasonably require from time to time. Contractor shall secure and maintain in effect all permits and licenses required by regulatory agencies in connection with qualifying for and performing the Services and Contractor shall obtain and pay for all mechanical, electrical, plumbing, and other plan checks and permits required for such Services. If the Services are of a type to be licensed by the State of California, Contractor must also secure and maintain such state license and provide a copy to Company prior to the commencement of the Services. Contractor agrees not to discriminate against any employee or applicant for employment because of race, color, religion, sex, ancestry, national origin, age, or otherwise. Any failure of Contractor to meet its obligations under this Paragraph 17 shall constitute a default of this Agreement by Contractor.

18. Force Majeure. Except for the duty to make payments when due and the indemnification provisions of this Agreement, neither Company nor Contractor shall be liable for any delay or damage due to, occasioned by, or caused as a result of a "Force Majeure Event". As used in this Agreement, the term "Force Majeure Event", includes an act of God, action of the elements, explosions, fires, earthquakes, war, strikes, labor disputes, inability to obtain required permits, inability to obtain materials, equipment, and labor in the open market to perform the Services, and any other unforeseeable cause beyond the control of either party. Upon the occurrence of a Force Majeure Event, the party rendered unable to carry out its obligations under this Agreement shall give written notice and full particulars of the cause of such delay to the other party and the cause of such delay, so far as possible, shall be remedied with all reasonable dispatch. Delays due to a Force Majeure Event shall not be considered a breach of or failure to perform under this Agreement. Neither Company nor Contractor shall be required against its will to settle or adjust any labor or similar disputes except in accordance with applicable law.

19. Default. The following described events shall be considered an "Event of Default" under the provisions of this Agreement:

A. Contractor (i) becomes insolvent or makes an assignment for the benefit of creditors or admits in writing its inability to pay its debts generally as the same become due, or (ii) any proceedings be instituted by Contractor under any federal, state, or local laws for relief of debtors or for the appointment of a receiver, trustee, or liquidator of Contractor, or (iii) a voluntary petition in bankruptcy or a request for reorganization or an adjudication of Contractor as insolvent or bankrupt be filed, or (iv) an attachment be levied upon Contractor's equipment and not be removed within five (5) days therefrom.

B. Contractor breaches any material provision of this Agreement or fails, neglects, refuses, or is unable at any time to provide adequate equipment or labor to perform the Services at a rate of progress considered reasonably sufficient by Company and such breach or failure to perform continues for a period of thirty (30) days after written notice thereof is given by Company to Contractor.

Upon an Event of Default, Company shall have the right (without limiting any other rights or remedies that it may have hereunder or by operation of law) to immediately terminate this Agreement and all Services then being performed by giving written notice thereof to Contractor. Should Company elect to so terminate this Agreement, Company shall be relieved of all further obligations hereunder except the obligation to pay the reasonable value of Contractor's performance of the Services up to the date of termination. In such event, Contractor shall be liable to Company for all costs incurred by Company in completing or procuring the completion of performance of the Services in excess of the difference between the agreed price and such reasonable value of Contractor's prior performance. Company's right to require strict

performance of any obligation hereunder shall not be affected by any previous waiver, forbearance, or course of dealing.

Contractor may, at any time, in its sole discretion terminate this Agreement and its performance of the Services in the event any amounts remain outstanding for sixty (60) days or more and Company shall be responsible for the payment of such outstanding amounts up to and including the date of termination.

20. Audit. If Company compensates Contractor for the Services performed on a "cost plus", "time and material", or "time" basis, Company or its duly authorized representatives shall have the right to audit and inspect the books, records, and payroll schedules maintained by Contractor pertinent thereto. Contractor agrees to maintain such books, records, and payroll schedules for a period of two (2) years from the date of invoice to Company and to make such books, records, and payroll schedules available to Company at any time or times during the two (2)-year period for use by Company in performing its audit. The audit(s) will be performed in Contractor's offices during normal working hours and subject to reasonable notice by Company. Contractor shall have the right to exclude any and all trade secrets, formulas, or processes from inspection or audit by Company.

21. Status as Independent Contractor. It is expressly understood that Contractor is an independent contractor and that neither Contractor nor Contractor's principals, partners, employees, or subcontractors are servants, agents, or employees of Company. Contractor shall be responsible for the supervision and control of Contractor's employees and for determining the manner in which the Services are performed, including, without limitation, the hours of labor of or method of payment to Contractor's employees. Company shall have no right or authority to supervise or give instructions to the employees, agents, or representatives of Contractor, but such employees, agents, and representatives at all times shall be under the direct and sole supervision and control of Contractor. It is the understanding and intention of the parties hereto that no relationship of master and servant, principal and agent, or employer and employee shall exist between Company and Contractor, its employees, agents, or representatives. As an independent contractor, Contractor agrees to comply with all laws, rules, and regulations, whether federal, state or local, which now or in the future may be applicable to the Services performed hereunder or applicable to Contractor's business, equipment, or employees engaged in the Services.

22. Assignment. Contractor may not assign or subcontract this Agreement or any of the Services performed hereunder without the prior written consent of Company, which consent shall not be unreasonably withheld, and the assignment of this Agreement or the subcontracting of any of the Services, if so permitted, shall not relieve Contractor of its duties and obligations hereunder. In the event Contractor shall assign or subcontract this Agreement, or attempt to do so in violation of the foregoing provision, or should any assignment of Contractor's rights, duties, and obligations in this Agreement be required by operation of law, Company may immediately declare such assignment or subcontract void and terminate this Agreement and Contractor shall be liable to Company for any loss or damage caused by such purported assignment or subcontract. This restriction on assignment or subcontracting on Contractor shall not apply with respect to any assignment or subcontract made to any parent, affiliated, or subsidiary company of Contractor.

23. Arbitration. Any controversy or claim arising out of or relating to this Agreement, or the breach thereof, shall be settled by negotiation of the parties, or by arbitration in Ventura County, California, in accordance with the Commercial Rules of Arbitration of the American Arbitration Association ("AAA"). The tribunal shall be composed of one neutral arbitrator if the controversy

or claim involves a maximum exposure of less than One Million Dollars ($1,000,000). If the parties are unable to agree on a neutral arbitrator, one will be appointed pursuant to the rules of the AAA. If the controversy or claim involves a maximum exposure in excess of One Million Dollars ($1,000,000), then the tribunal shall consist of three (3) arbitrators, with each party appointing one arbitrator, and the two arbitrators so appointed appointing the third arbitrator who shall act as Chair. No award shall be made for punitive, special, exemplary, or consequential damages or losses, including loss of profits or loss of business opportunity, and judgment upon any award rendered may be entered in any court having jurisdiction thereof. All statutes of limitation that would otherwise be applicable shall apply to the controversy or claim. The parties shall treat all matters relating to the arbitration as confidential. Subject to either party's right to cooperate fully with the United States authorities, the parties understand and agree that this confidentiality obligation extends to information concerning the fact of any request for arbitration, any ongoing arbitration, as well as all matters discussed, discovered, or divulged, (whether voluntarily or by compulsion) during the course of such arbitration proceeding.

24. Choice of Law. This Agreement shall be governed by and construed and enforced in accordance with the substantive laws of the State of California, excluding the conflict of laws provisions thereof that would otherwise require the application of the laws of any other jurisdiction.

25. Attorneys' Fees. If any party hereto brings an action or proceeding involving this Agreement whether founded in tort, contract, or equity, or to declare rights hereunder, the prevailing party (as defined below) in any such proceeding, action, or appeal thereon, shall be entitled to reasonable attorneys' fees in addition to any other relief ordered by the court or the arbitrator(s). Such fees may be awarded in the same suit or recovered in a separate suit, whether or not such action or proceeding is pursued to decision or judgment. The term "prevailing party" shall include, without limitation, the party who substantially obtains or defeats the relief sought, as the case may be, whether by compromise, settlement, judgment, arbitration, or the abandonment by the other party of its claim or defense. The attorneys' fees awarded shall not be computed in accordance with any court or arbitration fee schedule, but shall be such as to fully reimburse all attorneys' fees reasonably incurred by the prevailing party.

26. Notices. All notices and other communications provided for herein shall be given or made by telecopy, courier, or U. S. Mail in writing and telecopied, mailed, or delivered to the recipient at the addresses specified below. All such communications shall be deemed to have been duly given (i) when transmitted, if transmitted by telecopier before 1:00 PM local time on a business day (otherwise the next business day), (ii) when delivered, if personally delivered, or (iii) in the case of a mailed notice, three (3) business days after the date deposited in the U. S. Mail, postage prepaid, and in each case given or addressed as provided herein. Either party may change its address or telecopier number shown by giving written notice thereof to the other party.

To Company:

DCOR, LLC

290 Maple Court, Suite 290
Ventura, CA 93003
Telephone (805) 535-2000
Telecopier (805) 535-2100

To Contractor:

American Integrated Services, Inc.
Attention: DAVID HERRERA
1502 E. Opp St.
Wilmington, CA 90744
Telephone 310-522-1168
Telecopier 310-522-0474

27. Confidentiality. In the course of providing the Services, Contractor may come into possession of financial and accounting data and information, studies, compilations, and records pertaining to oil and gas properties that are operated by Company (the "Data"). Contractor acknowledges that the Data belongs to Company, constitutes specialized and highly confidential information not generally known in the industry, and in some instances, constitutes trade secrets of the Company. Accordingly, Contractor agrees that during the term of this Agreement, and for a period of two (2) years after the termination of this Agreement, it will not permit or authorize its employees, agents, representatives, and its subcontractor's employees, agents, and representatives, to disclose, furnish, or reveal such Data to any individual or entity that is not a party to this Agreement without the prior written consent of Company. This restriction on disclosure of the Data shall not apply to (a) any Data that are known to Contractor at the time of receipt of such Data from Company, (b) any Data that Contractor may obtain from a source other than Company that are free on restrictions of further disclosure, (c) any Data independently developed by Contractor without access to Company's Data, (d) any Data that may fall within the public domain through no fault or breach of the terms of this Agreement by Contractor, or (e) any Data that Contractor is obligated to disclose to a judicial or administrative process.

Contractor agrees that the breach of the terms of this Paragraph 27 by Contractor, or its employees, agents, and representatives, and those of its subcontractors, will result in immediate and irreparable injury to Company for which there is no adequate remedy at law. If such a breach occurs, Company will be entitled to temporary, preliminary, and permanent injunctive relief and specific performance as well as to all other legal and equitable remedies available to Company. No remedy conferred by law of any of the provisions of this Paragraph 27 is intended to be exclusive of any other remedy, and each and every remedy shall be cumulative and in addition to every other remedy given hereunder or now or hereafter existing at law or in equity, by statute, or otherwise. The election of any one or more remedies by Company shall not constitute a waiver of the right to pursue other available remedies.

It is expressly understood that Company has a duty under this Paragraph 27 to notify Contractor when it gives Contractor information that it considers confidential or proprietary. Company's failure to so designate confidential or proprietary information shall relieve Contractor from any liability for divulging such information to third parties.

28. Radioactive Source Procedures. If, and only if, the performance of the Services involves the use of radioactive materials, and if a tool or drill string containing radioactive materials becomes lodged below the rotary table, then Company and Contractor will employ the procedures set forth within Exhibit "B" attached hereto and by this reference made a part hereof.

29. Conflict of Provisions. In the event of a conflict or inconsistent terms between the provisions of this Agreement and any pre-prepared purchase order, work order, job ticket, invoice, statement, or other similar form submitted to Company by Contractor in connection with the Services, notwithstanding any express language to the contrary therein, the provisions of this Agreement shall prevail and be controlling, unless the instrument purporting to modify this Agreement satisfies the requirements of Paragraph 30.B herein.

30. Additional Provisions.

A. If any part of the Services is commenced by Contractor under an oral agreement or a written agreement previously executed by Company and Contractor, this Agreement shall apply thereto in the same manner as if made before said Services were commenced and the prior agreement shall no longer be effective, it being understood that this

Agreement supersedes and replaces all prior agreements between the parties with respect to the subject matter herein.

B. No change, modification, or extension of this Agreement or any of the provisions hereof or representation, promise, or condition relating to this Agreement shall be binding upon either party unless made in writing specifically referring to this Agreement by title and date, stating in conspicuous writing that this Agreement is to be superseded thereby, and signed by an authorized representative of each party.

C. In the event any provision within this Agreement is found to be contrary to or inconsistent with any laws or governmental regulations, then such provision shall be modified so as to conform to such laws or regulations, and this Agreement, as so modified, shall remain in full force and effect.

D. No benefit, right, or duty provided within this Agreement shall be considered waived unless the waiver is in writing, expressly refers to this Agreement, and is signed by an authorized representative of the party charged with the waiver. The waiver of one instance of any act, omission, condition, or requirement shall not constitute a continuing waiver unless specifically so stated within a written waiver statement. Moreover, a waiver by either party of one or more defaults by the other party hereunder shall not operate as a waiver of any other defaults (past or future) whether of a like or of a different character.

E. Each of the persons executing this Agreement represents and warrants that he or she has the full right and authority to execute this instrument on behalf of the Company or Contractor, as the case may be, and to bind such party to the fulfillment of all of the provisions hereof.

F. Subject to the provisions of Paragraph 22 herein, this Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

IN WITNESS WHEREOF, the parties hereto have executed this Master Service Agreement effective as of the date and year first written above.

DCOR, LLC, a Texas limited liability company

AMERICAN INTEGRATED SERVICES, INC.
(Insert Company Name)

Personal identifying information has been removed

"Company"

Title: President

Tax ID # _____

"Contractor"

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Section 10 Training, Drills, and Inspections

10.1 Training

All Company personnel receive training in the safe and proper operation of facility equipment as an integral part of The Company's environmental policy. This and other aspects of spill prevention can be reviewed and documented on the Spill Prevention Meeting Log (Figure 10-1) (Required at SPCC facilities).

Personnel who respond to a spill receive Hazardous Material Response Training. This training covers this Plan and fulfills the requirements for Hazardous Waste Operations and Emergency Response (HAZWOPER) found in OSHA 29 CFR 1910.120(q)(6).

Members of the Incident Management Team (IMT) receive annual Incident Command System (ICS) training commensurate with their positions so that they are prepared to discharge their responsibilities during an oil spill incident. Pursuant to BSEE regulations (30 CFR 254.41), members of the Initial Response Team (IRT) and the IMT receive annual training. This training includes:

- Annual hands-on training in operating response equipment for personnel in the IRT is provided, normally in the second quarter;
- Annual training in directing the deployment and use of response equipment for personnel in the IRT is provided, normally in the second or third quarter;
- Annual training for the spill response management team (IMT) is provided, normally in the second or third quarter, regarding;
  - Locations, intended use, deployment strategies, and operational and logistical requirements of response equipment;
  - Incident Command System (ICS);
  - Spill reporting procedures;
  - Spill trajectory analysis and predicting spill movement; and
  - Any other management responsibilities.
- Annual training is offered for the qualified individuals to insure they are sufficiently trained to perform their duties.

Training records for all personnel are maintained for a minimum of three years at the Ventura Office. The Emergency Preparedness Coordinator is responsible for maintaining these records.

In addition to the training that the Company conducts in-house, IMT personnel may attend numerous training sessions conducted on an annual schedule by Clean Seas or MSRC, the oil spill cooperatives of which DCOR is a member. The Oil Spill Cooperative training program includes initial training, hands-on training with response equipment, and annual refreshers. Specialized training on Company equipment is also provided. Training may be conducted in

Spill Prevention Meeting Log

(Conduct prevention discussion in conjunction with semiannual equipment deployment drill)

Regulation (EPA):40 CFR 112., App. F
Discharge prevention meeting logs shall be included in … the response plan.

Facility: _____

Date: _____

Lead Operator: _____
Discussion Leader: _____
Topic(s) discussed:

Issue(s) Identified	Required Action	Implementation Date

Participating Personnel: Name	Company	Name	Company

Upon completion: Retain this form for a minimum of 5 years (EPA).

Figure 10-1. Spill Prevention Meeting Log

environmentally sensitive sites within the Clean Seas/MSRC area of interest such as harbors, bays, wetlands, and rivers.

The Company maintains a computer database of available training, and the Company personnel who participate in the training. This system is also used to notify Company personnel when additional or updated training is required. Table 10-1 provides a summary of training applicable to oil spill response.

Table 10-1. Spill Response Training Matrix

Course	Attendees	Instructor	Frequency
24 hr HAZWOPER 29 CFR 1910.120	Field personnel, Safety Officer, QI, & Management	Consultant	Initial hire & as required
8 hr HAZWOPER 29 CFR 1910.120	Field personnel, Safety Officer, QI	Consultants, Clean Seas, &/or On-line	Annual refresher
Incident Command System 29 CFR 1910.120	Spill Management Team	Consultant &/or DCOR personnel	Annual
Oil Spill Response Plan Position responsibilities Operator notification QI/NRC notification Notification process Characteristics and hazards of crude oil Conditions likely to worsen emergencies Discharge control Firefighting	Field personnel, Spill Management Team	Consultant &/or DCOR personnel	Initial hire & Annual refresher
Equipment deployment – shoreline protection 29 CFR 1910.38 49 CFR 194.117	Field response personnel	Clean Seas/ MSRC	Annual
Spill Response Management	Spill Management Team, QI	Clean Seas & Consultant	Annual & as required
First Aid/CPR	All field personnel	Red Cross	Annual & as required

10.2 Spill Response Drills

Facility personnel conduct a minimum of one tabletop exercise and two equipment deployment exercises (using Company, Clean Seas, or MSRC equipment) annually. An Incident Management Team drill may be held in conjunction with Clean Seas/MSRC drills.

The Company has also voluntarily adopted the guidelines for exercises developed for the National Preparedness for Response Exercise Program (PREP) and for BSEE regulation 30 CFR 254.42. The majority of these exercises are conducted either internally or by Clean Seas or MSRC and conform to the following requirements:

- The entire Plan is exercised at least once in the triennial cycle;
- The following minimum drill requirements are met:

  - An annual spill management team tabletop exercise;
  - An annual deployment exercise of response equipment that is staged at onshore locations;
  - A notification exercise is conducted for each facility to test the ability of facility personnel to communicate pertinent information in a timely manner to the qualified individual (QI);
  - Semi-annual deployment exercises of each type of response equipment maintained by Clean Seas and MSRC such that each type of equipment is exercised at least once annually;
  - Equipment is inspected, tested and repaired/maintained as necessary each drill;
- Exercises cover a range of scenarios and simulate local conditions and seasonal weather conditions and involve a worst case discharge scenario at least once during the triennial cycle;

DCOR will document each drill and keep the records on file for review by the relevant agencies. Summaries of offshore equipment deployment exercises and Table Top spill management team drills are documented using the Spill Notification Form (see Figure 3-1 in Vol. 1 of this Plan) and the Incident Action Plan developed during the drill. Onshore equipment deployment drills are documented using the form shown in Figure 10-2. DCOR QI Notification Forms are illustrated in Figures 10-3 (Federal) and 10-4 (State). State of California credit for drills will be requested by submittal of the CDFG/OSPR REQUEST FOR DRILL EXERCISE CREDIT form. Appropriate documentation includes:

  - Type of exercise;
  - Date and time of exercise;
  - Description of the exercise (scenario);
  - Objectives met; and
  - Lessons learned.
- Records of spill response exercises, including lists of participants, are maintained at the Ventura Office for a minimum of three years along with records of OSRO equipment deployment exercises;
- DCOR will inform the BSEE, DOT, and OSPR of the date of any exercise required at least 30 days prior to the exercise;
- DCOR will cooperate with the BSEE Regional Supervisor and other agencies during unannounced drills.

PREP Guidelines define fifteen Plan components that should be evaluated during each three-year cycle. These are:

1. Notifications
2. Staff mobilization
3. Ability to operate within the response management system described within the Plan
4. Discharge control
5. Assessment of discharge
6. Containment of discharge
7. Recovery of spilled material
8. Protection of economically and environmentally sensitive areas
9. Disposal of recovered product

Facility: _____

Date: _____ Time: _____

Regulation (EPA): 40 CFR 112.21(c)
The facility owner or operator shall develop a program of facility response drills/exercises, including evaluation procedures. A program that follows the National Preparedness for Response Exercise Program (PREP) will be deemed satisfactory for purposes of this section.

☐ Announced Drill or ☐ Unannounced Drill or Actual Response

Scenario: (amount, material, cause, area impacted; provide actual weather: wind, temp, clouds, etc.)

Describe equipment deployed/operated (check one or both, as appropriate)

☐ Facility Equipment	☐ OSRO [Oil Spill Response Organization] Equipment Name of OSRO: _____

Describe response activities:

Response time (minutes from detection of "spill" to deployment of equipment): _____

All equipment in good operating condition? Yes ☐ No ☐

Maintenance/replacement/additional equipment required/recommended? Yes ☐ No ☐
If "Yes," describe:

Evaluation Comments: _____

Drill Leader: _____

Additional participating personnel (legibly):
(Note that every facility response person is required to participate semiannually.) (Retain this record for 5 years.)

Name	Company	Name	Company

Figure 10-2. Onshore Semi-annual Equipment Deployment Drill Form

Internal Exercise Documentation Form

(OCS Platforms & EPA Facilities)

QI (Qualified Individual) **Notification Exercise**

1. Facility initiating exercise: _____

2. Date performed: _____

3. Exercise or actual response?: _____

4. Name of person notified: _____
   Is this person identified in Response Plan as QI or designee? _____

5. Time initiated: _____
   Time in which QI or
   Designee responded: _____

6. Method used to contact: (voice contact must be made)
   _____ Telephone
   _____ Pager
   _____ Radio
   _____ Other _____

7. Description of notification procedure and information provided to QI (simulate that which would be communicated in the event of an actual spill):

_____

_____

_____

_____

_____

8. Core components of DCOR's Response Plan exercised by this notification are:
   a. Testing notification procedures for QI and others identified in DCOR's Plan.
   b. Demonstrating establishment of an internal communications system.

_____
Certifying Signature

Upon completion:
Retain this form for a minimum of 3 years (for USCG/RSPA/BSEE) or 5 years (for EPA).

Figure 10-3. QI Notification Form (Federal)

Internal Exercise Documentation Form

(State Platforms)

Quarterly Notification Exercise

1. Facility initiating exercise: _____
2. Date performed: _____
3. Exercise or actual response?: _____
4. Names of individuals/entities contacted: (always inform person that this is an exercise)

   Immediate Response Team:

   Platform personnel: _____

   MSRC Representative: _____

   QI (Qualified Individual): _____

   Person-on-Call notified: _____
5. Time initiated: _____

   Time contact made:

Platform personnel	MSRC	QI	Person On-call

6. Method used to contact (check appropriate box): (voice contact must be made)

	Platform personnel	MSRC	QI	Person On-call
Telephone				
Page				
Radio				
Personal				
Other				

7. Description of information provided to individuals (simulate that which would be communicated in the event of an actual spill):

   _____

   _____

   _____

   _____

8. Core components of DCOR's Response Plan exercised by this notification are:
   a. Testing notification procedures for QI and others identified in DCOR's Plan.
   b. Demonstrating establishment of internal and external communications systems.

Certifying Signature: _____

Upon completion: Retain this form for a minimum of 3 years (OSPR)

Figure 10-4. QI Notification Form (State)

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

Volume 1 of this Oil Spill Response Plan, which constitutes the response action Plan, is organized to address the above Plan components. One or more sections or subsections of Volume 1 of this Plan correspond to each PREP component. In this way, it is easy to document that all Plan components are exercised in the triennial cycle.

10.3 Facility Inspections

While all facilities conduct daily inspections, certain facilities (e.g., ROSF) have EPA-required documentation. The following checklists provide guidance for inspecting (1) tanks, (2) secondary containment, and (3) response equipment. An example Inspection Report follows (Figure 10-5).

I. TANK INSPECTION CHECKLIST (monthly)

1. Check tanks for leaks, specifically looking for:
   A. drip marks;
   B. discoloration of tanks;
   C. puddles containing spilled or leaked material;
   D. corrosion;
   E. cracks; and
   F. localized dead vegetation.
2. Check foundation for:
   A. cracks;
   B. discoloration;
   C. puddles containing spilled or leaked material;
   D. settling;
   E. gaps between tank and foundation; and
   F. damage caused by vegetation roots.
3. Check piping for:
   A. droplets of stored material;
   B. discoloration;
   C. corrosion;
   D. bowing of pipe between supports;
   E. evidence of stored material seepage from valves or seals; and
   F. localized dead vegetation.

II. SECONDARY CONTAINMENT INSPECTION CHECKLIST (monthly)

1. Dike or berm system.
   A. Level of precipitation in dike/available capacity;
   B. Operational status of drainage valves;
   C. Dike or berm permeability;
   D. Debris;
   E. Erosion;
   F. Permeability of the earthen floor of diked area;
   G. Location/status of pipes, inlets, drainage beneath tanks, etc.
2. Secondary containment
   A. Cracks;
   B. Discoloration;
   C. Presence of spilled or leaked material (standing liquid);
   D. Corrosion;
   E. Valve conditions.
3. Retention and drainage ponds
   A. Erosion;
   B. Available capacity;
   C. Presence of spilled or leaked material;
   D. Debris;
   E. Stressed vegetation.

III. RESPONSE EQUIPMENT INSPECTION CHECKLIST (semi-annually)

Using the Onsite Equipment List provided in Appendix C (Vol. 1 of this Spill Response Plan) of the response plan, check the status of the following:

1. Inventory (item and quantity);
2. Storage location;
3. Accessibility (time to access and respond);
4. Operational status/condition;
5. Actual use/testing (last test date and frequency of testing); and
6. Shelf life (present age, expected replacement date).

Note any discrepancies between the Appendix C list and the available response equipment.

SPCC Plan—Monthly Operator's Inspection Report

Report all Oil Spills or Chemical Spills immediately.
Please explain any Deficiencies in the space provided.

Date:	**Operator Name:**

Tanks/Vessels & Tank Foundations	OK ☐ Deficient ☐
Drip marks; discoloration; rust; puddles of spilled or leaked material; corrosion; cracks; erosion; settling; gaps between tank and foundation; deteriorated supports; localized dead vegetation; damage caused by vegetation roots? Obstructed vents?	Comments:
Tank Berms / Secondary Containment	OK ☐ Deficient ☐
Cracks; erosion; discoloration; presence of spilled or leaked material; standing liquid; available capacity; corrosion; permeability of the earthen floor or berm; operational status of drainage valves; debris; stressed vegetation?	Comments:
Storm Water Drainage	OK ☐ Deficient ☐
Erosion; cracks; discoloration; presence of spilled or leaked material; standing liquid; debris, condition of grating?	Comments:
Drip Pans	OK ☐ Deficient ☐
Standing liquid; available capacity; presence of spilled or leaked material in vicinity?	Comments:
Piping, Valves, etc.	OK ☐ Deficient ☐
Droplets of stored material; discoloration; corrosion; bowing of pipe between supports; exposed buried pipe; evidence of stored material seepage from valves, gaskets, or seals; localized dead vegetation? Valve conditions?	Comments:

(See 40 CFR 112 part §112.9 and Appendix F, §1.8.1 for inspection criteria.)

Note: When this inspection report is completed, you are required to keep a copy of the report in the field SPCC Plan (or addendum/file) and retain for 5 years. Also send a copy to the Emergency Preparedness Coordinator. [i.e., FAX (805) 535-2075, or e-mail, to Scott Robertson].

Figure 10-5. Example of Inspection Report

Section 11 Worst Case Discharge Analysis

11.1 Overview

This section describes and provides calculations for the worst-case discharge that could occur for each of the Company's Santa Barbara Channel and San Pedro Channel Facilities. This section was prepared in accordance with the guidelines provided in 30 CFR 254.47 (BSEE); Title 14, California Code of Regulations, Section 817.02 (d)(1)(A) (OSPR); and 49 CFR 194.105 (DOT). Worst-case discharge volumes, in barrels, are presented for each platform and pipeline.

Based on an analysis of Bureau of Safety and Environmental Enforcement (BSEE) data for oil spills associated with oil operations on the OCS, the probability of a release greater than 50 barrels (bbls) from a platform is 4.5×10^{-3} per year or one spill approximately every 220 years, while the probability of a release greater than 1,000 bbls is 6.6×10^{-4} per year or one spill every 1,500 years.

The potential for a spill is higher during drilling activities because of the potential for blowouts. The inclusion of blowouts that have occurred during all phases of development, including exploration, development, production, workover, and completion results in a probability of blowout of 5.9×10^{-3} per well drilled or one blowout per 168 wells drilled. Of the 116 blowouts reported to BSEE between 1971 and 1989, only 7 resulted in a release of oil or condensate. This equates to a probability of 3.6×10^{-4} of a blowout with release of oil or condensate per well drilled or one blowout per 2,800 wells drilled.

Several oil spill sources may be associated with OCS platform operations. Minor fuel or diesel spills may result from normal platform operations and oil transfers between supply vessels and the platform. As discussed below, a minor to medium size spill could also occur if one of the pipelines between the platforms develops a leak or rupture.

The potential for an oil spill due to the normal operations on the Company's platforms is minimized by the following conditions and/or precautions:

- Platform equipment is protected by splash panels, curbs, gutters, and drains to effect primary containment.
- Remedial and well pulling operations are completed using well control equipment as established by Company policy.
- The Platforms are equipped with a full complement of alarms, sensors, monitoring devices, automatic shut-off systems, and operating procedures to provide maximum protection against equipment failures and personnel errors that could cause spills or lead to other emergencies.

11.2 Worst Case Discharge Estimates

Worst case discharge calculations have been conducted separately for Santa Barbara Channel and San Pedro Channel. This is done to demonstrate that sufficient resources are available to

respond for a worst case spill in each area. (In the tables that follow, rounded volumes are shown; totals are the sums of unrounded numbers.)

11.2.1 Pipeline Discharge Calculation

An oil spill from the offshore pipelines could occur from a pipeline rupture caused by failure of the pipe, damage by earthquake or other natural event, or damage caused by a vessel anchor or other external impact. The estimated total volume released due to a pipeline rupture considers the following three effects consistent with 30 CFR 254.47(c)(3) :

- Oil pumped from the line before the shipping pumps are shut down and valved out.
- Oil released due to the decreased oil density and reduced pipeline diameter as the line pressure decreases when the pumps are shut down.
- With the pump pressure relieved, the effect of hydrostatic pressure and buoyancy will cause some of the remaining oil to be released.

The key assumptions regarding the volumes released due to these three effects are:

1. **Shutdown time**. The worst case time required to detect a leak and shut down the shipping pumps in the event of a release is estimated to be 11 minutes (9 minutes to detect and 2 minutes to shut valves). The pumps are assumed to be operating at the maximum daily shipping rate prior to shutdown. Therefore, the volume released prior to full **shut down** of valve is:

$$\frac{\text{Pump rate (bbl/day)}}{(24\text{ h/day})(60\text{ min/h})} \times (11\text{ min.}) \times (\text{oil cut}) = \text{Volume oil released}$$

2. **Pipeline-specific factors.** A variety of elements factor into the amount of oil that will leak from a pipeline. These include

   De-pressuring of the pipeline. During pumping, the pressure created by the shipping pumps slightly increases the oil density and the diameter of the pipeline. When a leak occurs and the pumps are stopped, the internal pressure decreases as the pipeline returns to its nominal diameter and the oil decompresses and flows out the rupture.

   Buoyancy Effects. With the shipping pumps are stopped and the pressure due to pumping released, the remaining potential release volume is determined by hydrostatic pressure and buoyancy effects. Because oil is buoyant relative to water, oil in the pipeline deeper than the rupture will gradually be displaced by water as the denser water seeps into the rupture and the lighter oil seeps out. Oil above the rupture would remain in the pipeline as the denser water would prevent the oil from sinking.

   Hydrostatic Pressure. Oil may or may not leak from a break in a pipeline, in part as a function of the operating pressure of the pipeline relative to the ambient hydrostatic pressure (which is a function of water depth).

These factors are incorporated into worst-case discharge volumes calculated using the BSEE document: *Pipeline Oil Spill Volume Estimator* (OCS Study, MMS 2002-033).

Worst-case volume calculations for the State of California [CCR 14, Section 817.02(d)(1)] do not include consideration of the oil cut; thus they represent the total fluid that could be released (including produced water). The resulting volumes from the above calculations are summarized in Table 11-1 for Santa Barbara Channel pipelines and Table 11-2 for San Pedro Channel pipelines.

Table 11-1. SBC Pipeline Calculations

Component	Units	Gilda to Mandalay	Gina to Mandalay	C to B	B to A	A to Shore	Hillhouse to A	Henry to Hillhouse
Pipeline Length	feet	53,148	32,694	3,114	2,966	58,970	2,811	13,202
Pipe Diameter (outside)	inches	12.75	10.75	6.625	8.625	12.75	8.625	8.625
Pipe Volume	bbl	7,127	3,018	104	184	8,172	175	745
Pump Rate	bbl/day	7,000	1,150	5,000	1,800	4,000	1,050	1,960
Shut Down	minutes	11	11	11	11	11	11	11
Oil Cut	%	38	30	12	82	82	95	22
Pipeline Release Volumes								
Prior to shut down	bbl	53	9	38	14	31	8	15
Pressure & Buoyancy	bbl	4,984	1,856	52	86	4,464	53	0
Pipeline Total Oil	**bbl**	**1,994**	**546**	**11**	**92**	**3,685**	**57**	**3**
Pipeline Total Fluid[1]	**bbl**	**5,037**	**1,819**	**90**	**100**	**4,494**	**61**	**15**

1. Total fluid does not include the oil cut in the calculation (California calc.).

Table 11-2. SPC Pipeline Calculations

Component	Units	Esther to Shore	Edith to Elly	Eva to Shore	Shore to Ft Apache
Pipeline Length	feet	7,392	6,485	18,486	9,090
Pipe Diameter (outside)	inches	3.5	6.625	8.625	8.625
Pipe Volume	bbl	70	214	1,030	506
Pump Rate	bbl/day	1,100	500	2,300[1]	2,300[1]
Shut Down	minutes	11	11	11	11
Oil Cut	%	100	100	57[1]	57[1]
Pipeline Release Volumes					
Prior to shut down	bbl	8	4	18	N/A[2]
Pressure & Buoyancy	bbl	54	118	630	253[3]
Pipeline Total Oil	**bbl**	**62**	**122**	**369**	**622**[4]
Pipeline Total Fluid[5]	**bbl**	**62**	**122**	**647**	**900**[4]

1. Eva usually ships a 100% oil cut at 1,700 bbl/day. Periodically, large volumes of water are added, resulting in a 57% oil cut at 2,300 bbl fluid/day. The latter case represents Eva's WCD.
2. Not additive to calculation already made for Eva-to-Shore.
3. Rather than hydrostatic and buoyancy considerations, this is an estimate that 50% of the onshore portion of the pipeline could be drained if there was a break at the beach.
4. Sum of offshore and onshore.
5. Total fluid does not include the oil cut in the calculation (California calc.).

11.2.2 Platform Tank and Flowline Discharge Calculation

The estimated volumes of hydrocarbon storage tanks/vessels and piping were calculated for each platform consistent with 30 CFR Part 254.47. For oil vessels, the volume was calculated as the capacity of the tank. For oil/water vessels that operate at a constant level with an oil pad on water, the volume was calculated using a normal high and low level for top and bottom of oil pad. The volume of oil in the flow lines and other vessels (minimal oil pad) was estimated to be 10% of the total oil vessel volume. The total storage volumes (rounded to the nearest barrel) for the Santa Barbara Channel platforms are shown on Table 11-3 below. Similar data for San Pedro Channel platforms are provided in Table 11.4.

Table 11-3. SBC Platform Tank and Piping Capacities

Component	Gilda	Gina	A	B	C	Hillhouse	Henry	Habitat
Total capacity volume of all relevant tanks and vessels								
Oil[1] Tank Volume[2]	1676	774	2041	1982	912	2403	344	539
Misc. & Piping [4]	168	77	204	198	91	240	34	54
Total Tank Volume[2]	**1844**	**851**	**2245**	**2180**	**1003**	**2644**	**379**	**593**
Total volume of "oil cut" in all tanks								
Oil[1] Volume [3]	779	203	536	588	278	1395	108	350
Misc. & Piping [4]	78	20	54	59	28	139	11	35
Total Oil Volume[3]	**857**	**223**	**589**	**646**	**306**	**1534**	**118**	**385**

Table 11-4. SPC Platform Tank and Piping Capacities

Component	Esther	Edith	Eva
Total capacity volume of all relevant tanks and vessels			
Oil[1] Tank Volume[2]	1895	3600	723
Misc. & Piping [4]	189	360	72
Total Tank Volume[2]	2084	3960	795
Total volume of "oil cut" in all tanks			
Oil[1] Volume	830	2138	143
Misc. & Piping [4]	83	214	14
Total Oil Volume[3]	913	2352	157

Notes for Tables 11-3 and 11-4

(1) Oil = any liquid hydrocarbon (crude, diesel, condensate, lube oil, solvents, hydraulic oil)
(2) Total capacity volume of all relevant tanks and vessels (for OSPR WCD calculation)
(3) Total volume of "oil cut" in all tanks (for BSEE WCD calculation)
(4) Assumes 10% of base volume.

11.2.3 Well Blowout Calculations

Platform Gilda and Platform C are the only Company platforms that have free flowing wells. The only well on Platform C that could freely flow has characteristics such that the initial release of fluid (40% oil cut) on the first day might be 2 bbl, followed by flow of less than 0.5 bbl per day after that. Thus, using the 30-day scenario required by BSEE, the total volume of an uncontrolled blowout would be less than 7 bbl of oil.

Platform Gilda has several wells that can flow freely. The sum of these wells is approximately 350 bbl of oil per day. The best well has a rate of 200 bbl per day. If there was a loss of control

of this well, including failure of the subsurface safety valve (below the sea floor), the 30-day total volume of a blowout would be 6,000 bbl of oil.

State of California regulations call for a volume based on a seven-day uncontrolled blowout scenario. This would result in 5 bbl (2 bbl oil) at Platform C and 1400 bbl oil at Platform Gilda. In evaluating the adequacy of response capabilities in the Company's area of operation (see Section 13–Response Capability Analysis) the larger, BSEE, worst case volumes are used.

Table 11-5 summarizes the WCD blowout characteristics for each of the Santa Barbara Channel platforms, and Table 11-6 shows similar data for the San Pedro Channel platforms. The duration of blowouts in the drilling scenarios are a function of the estimated length of time to gain control from the platform or to drill a relief well from an adjacent facility. The only platforms from which a WCD resulting from loss of control in a drilling scenario could occur are Gilda and the Dos Cuadras platforms (A, B, C, & Hillhouse) (see Table 11-5). Such an event is extremely unlikely, but, should it occur, the likelihood that such a blowout could be killed from the platform is high. It is estimated that a Gilda well could be killed within 10 days, and from a Dos Cuadras platform within 7 days. If the nature of the incident rendered it impossible to control the blowout well from the drilling platform, a relief well would have to be drilled from an adjacent platform (e.g., Gilda from Platform Grace; Hillhouse from A, A from Hillhouse or B, B from A or C, C from B [see map of Santa Barbara Channel Operations on page A-5]). The time to complete a relief well includes time for mobilization and for drilling. It is estimated that the total time for a relief well for Gilda would be 120 days, and for a Dos Cuadras platform would be 50 days.

Note that loss of well control in a production scenario does not result in the same uncontrolled flow rates as in a drilling scenario. In evaluating the adequacy of response capabilities in the Company's area of operation the larger worst case volumes are used.

Table 11-5. SBC Platform Blowout Potentials

Uncontrolled flow rate	Gilda	Gina	A	B	C	Hillhouse	Henry	Habitat
Production Scenarios (using the worst-case well on each platform) (bbl fluid/day)								
First day	200	—(6)	—	—	2	—	—	—
Subsequent days	200	—	—	—	0.5	—	—	—
Oil Cut (%)	100%	—	—	—	40%	—	—	—
7-day blowout (oil) " " (fluid) (1)	1,400	—	—	—	2 5	—	—	—
30-day blowout (oil) (2)	6,000	—	—	—	7	—	—	—
Drilling Scenarios (bbl oil/day)								
Initially	6 (5)	—(6)	∗ (7)	∗ (7)	15	∗ (7)	—	—
After 7 days	6 (5)	—			1(5)		—	—
7-day blowout(3)	n/a	—			53		—	—
10-day blowout (3)	60	—			n/a		—	—
50-day blowout (4)	n/a	—			106		—	—
120-day blowout(4)	720	—			n/a		—	—

— Dash indicates that there is no well with a possibility of an oil blowout.
(1) Per California OSPR regulations.
(2) Per BSEE regulations
(3) The length of time to kill a blowout from same platform.
(4) The length of time to kill a blowout by drilling from adjacent platform.
(5) Average daily flow. Pattern would be flowing for a few hours, then stopping to "reload."
(6) Oil reservoir would not flow. Gas reservoir WCD: 3.8 MMscfd and 4bwpd (water, no condensate; i.e., no liquid hydrocarbons).
(7) See Platform C data for worst-case example from same oil reservoir.

Table 11-6. SPC Platform Blowout Potentials

	Esther	Edith	Eva
Production Scenarios (using the worst-case well on each platform) (bbl oil/day)			
Initially	—	—	—
Subsequent days	—	—	—
Drilling Scenarios (bbl oil/day)			
Initially	—	—	—
Subsequent days	—	—	—

— Dash indicates that there is no well with a possibility of an oil blowout.

11.2.4 Onshore Facility Calculations

At the Santa Barbara Channel (SBC) onshore facilities, the volumes of the largest tanks at the Rincon Onshore Facility (ROSF) and the Mandalay Onshore Facility (MOSF) are both 3,000 barrels. All tanks are located within secondary containment capable of holding greater than 110% capacity of the tanks.

The volume of the largest tank at Ft Apache, the San Pedro Channel (SPC) onshore facility is 1000 bbl. As with the MOSF and ROSF tanks, it is built to API Standard 650 and it (and all other tanks) is within secondary containment designed according to NFPA 30. It also has automatic high-level alarms/shutdowns designed according to NFPA/API RP 2350.

The estimated volume of a worst-case spill from either the Rincon Onshore Facility or the Mandalay Onshore Facility has been determined as outlined in DOT's 49 CFR 194.105(b)(3) (although these are not breakout tanks) and EPA's 40 CFR 112, Appendix D. Using allowances from 49 CFR 194.105(b)(4), the DOT worst-case discharge would be 1,200 bbl (see Table 11.7), while the EPA worst-case discharge volume, with no allowances, is volume of the largest tank, (3,000 bbl). Similar calculations for Ft Apache (Table 11.8) show a DOT worst case discharge of 350 bbl from the tank, and an EPA WCD of 1,000 bbl.

Table 11-7. SBC Onshore Facility Calculations

Description		Units	Amount
Largest tank at ROSF and MOSF (both)	LACT Tanks	bbl	3,000
Allowance – Secondary containment capacity greater than 100% capacity of tank and designed according to NFPA 30	Subtract 50% tank volume	bbl	-1,500
Allowance – Tank built to API Standard 650	Subtract 10% tank volume	bbl	-300
Allowance – Automatic high-level alarms/shutdowns designed according to NFPA/API RP 2350	Subtract 5% tank volume	bbl	-150
Worst Case Discharge (w/ DOT allowances)	$\mathbf{V_{WCD1}}$	**bbl**	**1,200**
Worst Case Discharge (for EPA calc. at ROSF)	$\mathbf{V_{WCD2}}$	**bbl**	**3,000**

Table 11-8. SPC Onshore Facility Calculations

Description		Units	Amount
Ft Apache Oil Storage Tank	T-4	bbl	1,000
Allowance – Secondary containment capacity greater than 100% capacity of tank and designed according to NFPA 30	Subtract 50% tank volume	bbl	-500
Allowance – Tank built to API Standard 650	Subtract 10% tank volume	bbl	-100
Allowance – Automatic high-level alarms/shutdowns designed according to NFPA/API RP 2350	Subtract 5% tank volume	bbl	-50
Worst Case Discharge (w/ DOT allowances)	**V_{WCD1}**	**bbl**	**350**
Worst Case Discharge (for EPA calc.)	**V_{WCD2}**	**bbl**	**1,000**

11.2.5 Onshore Pipeline Drainage

The Reasonable Worst Case Spill (RWCS) from the one applicable SBC onshore pipeline, consistent with 49 CFR 194.105, would involve the 14-inch pipeline that connects the Lower Rincon Onshore Facility to the Upper Facility. The worst case spill from this pipeline is calculated in Table 11-9.

In the San Pedro Channel region, a worst case spill for the 1.75 mile onshore pipeline to Ft Apache would originate at the shoreline. Such a spill would be additive to the volume released at the same location from the subsea portion of the pipeline. Therefore, the onshore volume has been included in the offshore presentation found in Table 11-2, rather than in a separate table here.

Table 11-9. SBC Onshore Pipeline Calculation

Description			Volume (bbl)
ROSF Lower to Upper–pipeline	Length: 2950 ft	Diameter: 14 inches	493
Oil Volume at 95% oil cut			468
Volume release prior to shut-down		11 min at 6,000 bbl/day[1]	44
Total Oil Volume			**512**
Total Fluid Volume			**539**[2]

1. Once or twice/year there may be a ~12 hr period of shipping 6% oil cut at rate of 31,300 BPD.
2. Total fluid does not include the oil cut in the calculation (California calc.).

11.2.6 Calculation Summary Results

To estimate the potential total oil that could be released, the contents of vessels, piping, and fuel storage on each platform is added to the amount potentially released from pipelines. In addition, where wells are under pressure, the maximum daily release from a well blowout is added. These

are shown in the following table. The vessel volumes are net oil accounting assuming vessels are full (volumes for State calculations are total fluid–no oil cut). Piping is assumed to be 10% of the total vessel volume. Diesel fuel storage is total maximum. Table 11-10 summarizes the calculations for subsea pipelines and platform tanks and pipes for Santa Barbara Channel (SBC) facilities. Table 11-11 provides the same information for San Pedro Channel (SPC) facilities. The sums are unrealistically high because worst case volumes for pipelines occur with a break closest to shore (shallowest level), while the other discharges assume a discharge nearest the platform (where a break at the deepest level of a pipeline would yield the smallest pipeline discharge).

Table 11-10. SBC Worst Case Spill Facility Totals

Component	Units	Gilda to Mandalay	Gina to Mandalay	C to B	B to A	A to Shore	Hillhouse to A	Henry to Hillhouse
Pipeline Total	bbl	1994 5037[1]	546 1819[1]	11 90[1]	92 100[1]	3685 4494[1]	57 61[1]	3 15[1]
		Gilda	**Gina**	**C**	**B**	**A**	**Hillhouse**	**Henry**
Vessel & Piping Totals	bbl	857 1844[1]	223 851[1]	306 1003[1]	646 2180[1]	589 2245[1]	1534 2644[1]	118 379[1]
Well Blowout	bbl	6000 1400[1]	0	106[2] 5[1]	0	0	0	0
TOTAL VOLUME	**bbl**	**8851** **8281**[1]	**769** **2670**[1]	**423** **1098**[1]	**738** **2370**[1,3]	**4331** **6774**[1,3]	**1591** **2720**[1,3]	**121** **394**[1]

1. California calc. (re Pipeline & vessels: total fluid, no allowance for oil cut; re Blowout: 7 days rather than 30)
2. BSEE calc is based on a drilling scenario that results in a greater discharge than a production scenario.
3. Includes pipelines both to and from platform.

Table 11-11. SPC Worst Case Spill Facility Totals

Component	Units	Esther to Shore	Edith to Elly	Eva to Ft. Apache
Pipeline Total	bbl	62	122	991 1547[1]
		Esther	**Edith**	**Eva**
Vessel & Piping Totals	bbl	913 2084[1]	2352 3960[1]	157 795[1]
Well Blowout	bbl	0	0	0
TOTAL VOLUME	**bbl**	**975** **2146**[1]	**2474** **4082**[1]	**1148** **2342**[1]

1. California calculation does not consider the oil cut.

11.2.7 Small and Medium Discharges–ROSF

While the worst-case discharge at ROSF is calculated to be 3,000 bbl from a tank (Table 11-7), their medium case discharge would be 539 bbl from the Lower to Upper Level pipeline (Table 11-9). Smaller spills may occur from smaller lines and valves. As seen in actual examples of responses (see Spill History–§12.5.1), most of these spills would be confined to secondary containment. The one exception would be wind-blown spray from a high pressure leak. Potentially impacted environments are reviewed in the Vulnerability Analysis (§12.6.2.5).

11.3 Worst Case Discharge Summary

The estimated volume of a worst case spill consistent with the requirements of 30 CFR 254.47 (BSEE); CCR 14, Section 817.02(d)(1) (California OSPR); 40 CFR 112 (EPA) and 49 CFR 194.105(b)(3) (DOT) is provided in Table 11-12 for Santa Barbara Channel platforms and pipelines, and Table 11-13 for San Pedro Channel. Where differences in the calculation methods of the different agencies result in different worst case volumes, the larger volume is used in the following tables.

Table 11-12. SBC Worst Case Discharge Summary

Source	(see Table No.)	**Worst Case Volume (bbl)**
Pipelines–offshore (B to shore)	(11-1)	6078[2]
Pipeline–onshore (Rincon)	(11-9)	539[2]
Platform Vessels, Piping, & Misc. (Hillhouse)	(11-3)	2644[1]
Well Blowout (Gilda)	(11-5)	6000[1]
Onshore Tank (ROSF or MOSF)	(11-7)	3000[3]
Facility worst case total (Single facility) (Gilda)	(11-10)	**8366**[1]

1–BSEE, 2–California, 3–EPA

Table 11-13. SPC Worst Case Discharge Summary

Source	(see Table No.)	**Worst Case Volume (bbl)**
Pipelines (Eva to Ft Apache)	(11-2)	900[1]
Platform Vessels, Piping, & Misc. (Edith)	(11-4)	3960[2]
Well Blowout	(11-6)	0
Onshore Tank (Ft Apache)	(11-8)	1000[2]
Facility worst case total (Single facility) (Edith)	(11-11)	**4055**[1]

1–California, 2–EPA

As shown by the data presented in Tables 11-12 and 11-13, the worst case discharge, on which planning volumes should be based, would be 8366 barrels for Santa Barbara Channel and 4055 barrels for San Pedro Channel.

11.4 California Planning Volumes– Persistence and Emulsification

On-water and shoreline response planning volumes of the Company are calculated by first applying a persistence factor and then an emulsification factor based on the type of oil. Company crude oil is classified as Group 3 (medium) crude, which has a persistence factor of 0.5 and an emulsification factor of 2.0. Mathematically, these result in a multiplier of 1.0. Thus, there is no change to the Worst Case Spill planning volumes calculated above.

11.5 Additional Facility Details

As discussed earlier, the worst-case spills from the onshore facilities are based on the sizes of the largest tanks, with credit applied for a variety of mitigating measures built into the tanks and the nearby protection measures. More detailed information on the tanks at these facilities is provided in the facility descriptions in Section 12.5.

Section 12 Risk and Hazards Analysis

12.1 Setting

12.1.1 Climate

The climate in offshore and nearshore Southern California is generally mild, with moderate coastal fog and about 15 inches of average annual rainfall. Prevailing winds are from the west and northwest and can become relatively severe during winter storms, which normally last between 8 to 18 hours.

12.1.2 Temperature

Average onshore temperatures are approximately 60°F. Local sea surface temperatures range from about 50°F to 65°F with slightly greater ranges in shallow areas near shore.

12.1.3 Precipitation

Rainfall along this segment of the California coast averages about 15 inches annually with most rain occurring between November and April. Rainfall varies considerably both in annual quantity and in the months of occurrence. Summers are usually very dry. Heavy precipitation is not uncommon during the rainy season, although it rarely occurs for extended periods.

Operations at sea report the occurrence of precipitation averaging 6 percent of the time in winter to only about 1 percent of the time in summer. Generally, precipitation at sea does not interfere with oil spill containment and cleanup; however, very heavy rain will present some difficulties, especially in tracking the spread of oil at sea.

12.1.4 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. Wind speeds tend to be strongest during March, April, and May. Strong winter storm winds, which can exceed 25 miles per hour (mph), will produce the most severe conditions for responding to an oil spill emanating from the company's facilities.

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 percent or less, and the accompanying temperatures are generally 5°F warmer than the monthly average. In areas downwind of canyon and mountain passes, these winds can be especially severe.

12.1.5 Visibility

Visibility is important in oil spill containment and recovery operations at sea. Low visibility may present difficulties in coordination of vessels and in tracking the movement and spread of oil slicks. In the general area offshore, in which oil spill operations would be conducted, visibility of less than ½-mile occurs about 25 percent of the time annually.

12.1.6 Tides

Tides along this segment of the coast are mixed diurnal and semi-diurnal. There are usually two high tides and two low tides each day. The mean tidal range is about 4 feet with extreme ranges during spring tides of 6½-feet. Tides are factors in distributing spilled oil across the beach, churning oil throughout intertidal habitats, and thus aggravating the extent to which the oil affects the food and breeding process upon which myriad birds and sea creatures depend.

12.1.7 Ocean Shoreline and Bathymetry

The shoreline along the south coast of California contains gravel and sand beaches punctuated by rocky headlands and wave cut rock benches. Intermittent and perennial streams cut to the shoreline through the bluffs adjacent to the shore in numerous locations. Where streams reach the ocean, they typically empty over sandy beaches between rocky headlands. The entire shoreline is subject to continual surf, although the Channel Islands moderate the swell from the south and minimize the height of surf within the Santa Barbara Channel itself.

The sea floor offshore the south coast of Santa Barbara and Ventura County between Santa Barbara and Port Hueneme slopes from the shoreline toward the middle of the Santa Barbara Channel where depths reach over 200 fathoms (1,200 feet). The 50 fathom line (300 foot water depth) is approximately 5 to 7 miles from the shoreline with respect to the platforms of the Carpinteria and Ventura Groupings. Bathymetry is shown on the Carpinteria and Ventura Groupings location charts in Figures 1-1 and 1-2 of Volume 1.

The sea floor in the San Pedro Channel, between the mainland and Santa Catalina Island, ranges from a shallow shelf south of San Pedro Bay to almost 500 fathoms (3,000 ft) in the San Pedro Basin. The 50 fathom line (300 foot water depth) of the shelf where Platform Edith is located is approximately 12 miles from the shore. This broad shelf essentially disappears to the southeast: the 50 fathom contour is about 1.4 miles offshore of Newport Beach. Bathymetry in the vicinity of the company's San Pedro Channel facilities is shown on Figure 1-3 of Volume 1.

12.1.8 Ocean Currents

The primary ocean current off the west coast of the U.S. is the California Current, a broad, slow current, extending offshore about 250 miles, flowing equatorward at about 0.5 knots. Maximum speeds occur at the surface, in the spring and summer. Periodically, within 90 miles of the coast, the surface current reverses to poleward. This countercurrent is strongest in fall and winter, when it may reach 0.08 knots. The California Current continues its southerly flow, even as the shoreline trends eastward past Pt. Arguello. This creates a large, counterclockwise gyre in the

Southern California Bight. South of San Diego, part of the California Current, mixed with warm, saline north-central Pacific water from the west and warm, saline equatorial Pacific water from the south, spins eastward, toward shore, then poleward along the coast. Currents in the upper 600 ft over the San Pedro-Santa Monica basins (San Pedro Channel and offshore of Santa Monica Bay) are poleward year round (as discussed below, this is not necessarily true of surface currents). Current speed is 0.3 to 0.4 kts from late spring to winter and approximately 0.1 kts from late winter to early spring (MMS 2001).

Santa Barbara Channel

Current patterns within Santa Barbara Channel are complicated by topography/ bathymetry and wind. A summary discussion has been prepared by MMS (2001) and additional details can be found in Harms and Winant (1998) and Winant, Dever, and Henderschott (2003). There are three primary flow regimes (Figure 12-1), which can occur anytime during the year, but are found predominantly as noted below. While these general patterns are well described, minor eddies and transitions from one state to the other make it difficult to impossible to predict currents at a specific place and time.

Upwelling State: Primarily February-June. Strong north winds (equatorward) at western end of Santa Barbara Channel; weaker to the east (protected by the mountains). Cyclonic (counterclockwise) flow in the Channel; weaker current speed on mainland side, strong along the islands. Southerly flow off Pt Conception. Flow out of eastern end of Channel.

Convergent State: Primarily all year (except mid-spring). Similar wind regime as during upwelling, but insufficient to overcome the poleward current. Cyclonic flow in the Channel; similar speeds on either side of the Channel. Western flow off Pt Conception. Flow into eastern end of Channel.

Relaxation State: Primarily September-January. Weaker north winds. Strong western flow on northern (mainland) side of channel, including at Pt Conception, continuing poleward north of Pt Conception; weak eastern flow along island side of Channel. Flow into eastern end of Channel.

San Pedro Channel

The shoreward portion of the large counterclock-wise gyre (eddy) in the Southern California Bight (SCB), mentioned above, is called the Southern California Countercurrent (SCC). While the primary water-mass (midwater) currents through San Pedro Channel and offshore of Santa Monica Bay are poleward year round, surface currents over the continental slope are more variable, with seasonal differences:

Spring: SCC essentially absent. Flow enters the SCB, but turns equatorward rather than poleward.

Summer: SCC strong, eddy like (flow rejoins the California Current).

Winter: SCC strong, when poleward flow through Santa Barbara Channel is continuous with the flow north of Point Conception.

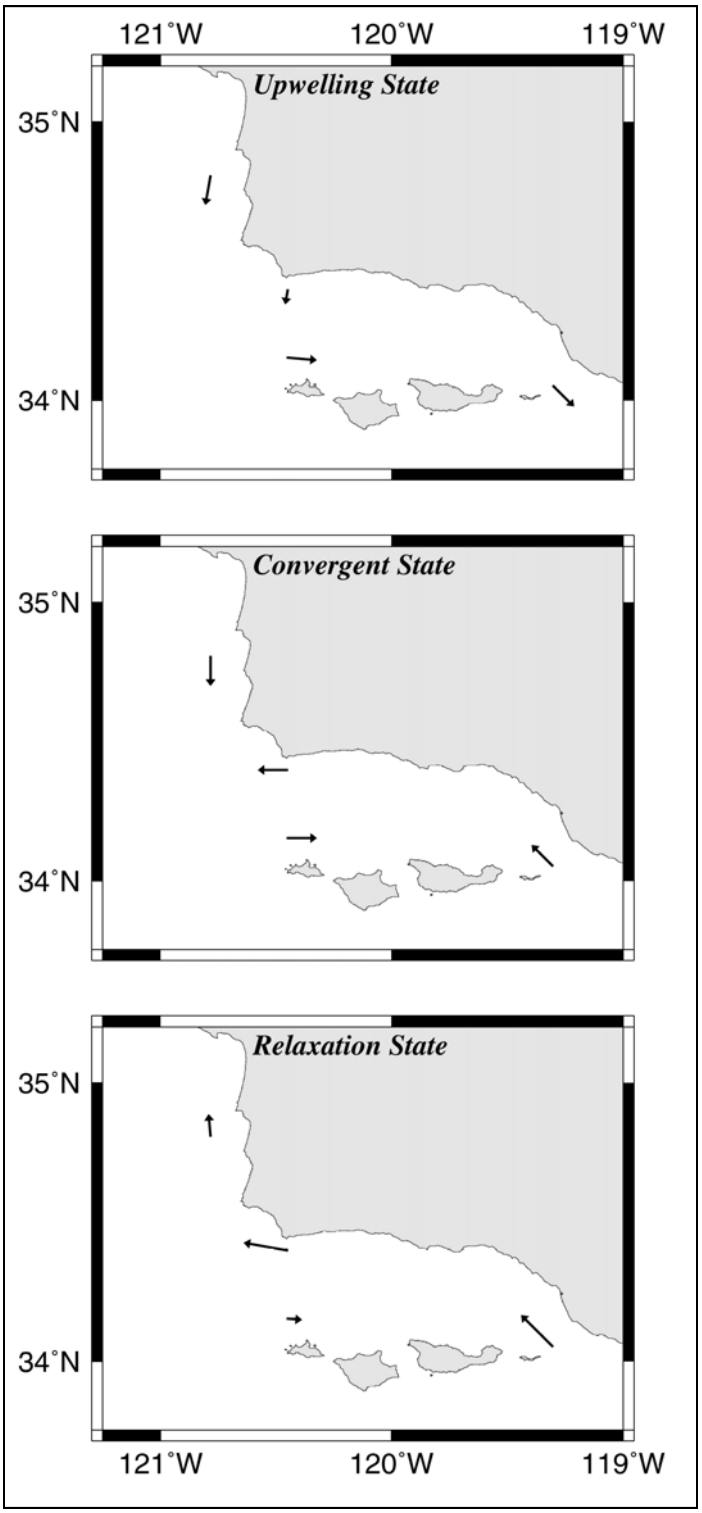

Figure 12-1. The three primary flow regimes in Santa Barbara Channel
(from MMS 2001)

In general, surface currents (0–45 ft) over the mainland continental shelf of the Southern California Bight are predominantly equatorward, even when deeper currents of the SCC are poleward. However, direct measurements over the San Pedro shelf indicate the following (for 15–30 ft interval):

Spring: Weak currents to the east (equatorward).
Summer: Weak currents to the west (poleward).
Winter: Strong currents to the west (poleward).

It must be remembered that, within any season, variability over the shelf is likely, with tides and winds also influencing the surface current direction.

References

Harms and Winant. 1998. Characteristic patterns of the circulation in the Santa Barbara Channel. J. Geophys. Res. 103(C2):3041-3065.

Hickey, B.M. 1993. Chapter 5. Physical Oceanography. *In* M.D. Dailey, D.J. Reish, & J.W. Anderson (eds). Ecology of the Southern California Bight. University of California Press. 925 p.

Minerals Management Service (MMS). 2001. Delineation Drilling Activities in Federal Waters Offshore Santa Barbara County, California. Draft Environmental Impact Statement.

Winant, Dever, and Henderschott. 2003. Characteristic patterns of shelf circulation at the boundary between central and southern California. J. Geophys. Res. 108:3021.

12.2 Trajectory Analysis

Despite the fact that the incidence of oil spills associated with offshore production operations has declined sharply during the past 26 years, oil spills continue to be one of the major concerns with offshore oil and gas operations. Accordingly, the Company has chosen the best available tool for predicting spill movements, as required by 30 CFR 254.26(b).

During the Santa Barbara Channel–Santa Maria Basin Circulation Study, up-to-date data from buoys and drifters in the Santa Barbara Channel were available on the Center for Coastal Studies web site, http://www-ccs.ucsd.edu/oilspill. Although that study is no longer active, the web site offers links to UCSB CODAR Real-Time Data (currents) and the Southern California Swell Model (waves). There are also links to various archived data as well.

In 2000, MMS published the tabular results of a probabilistic analysis of oil spill trajectories from various locations in the Pacific OCS (Oil-Spill Risk Analysis: Pacific Outer Continental Shelf Program). These results are available on the Internet for use in preparing spill response plans (http://www.mms.gov/itd/pubs/2000/2000-057.pdf). The results of the OSRA model runs were reviewed to identify land segments and resources on the California coast and nearby islands most likely to be impacted by an oil spill from the following Santa Barbara Channel OCS area facilities and pipelines:

Platform Gina	34.117496° North,	119.276260° West
Platform Gilda	34.182343° North,	119.418564° West
Platform Habitat	34.286617° North,	119.588097° West
Platform Hillhouse	34.331345° North,	119.603249° West
Platform C	34.332924° North,	119.630768° West
Pipeline, “B to Rincon Plant”	34.328011° North,	119.567947° West
Pipeline, “B to Rincon Plant”	34.326141° North,	119.506783° West
Pipeline, "Gilda to Mandalay Plant"	34.189835° North,	119.317764° West
Pipeline, "Gina to Mandalay Plant"	34.165417° North,	119.262939° West
Platform Edith	33.595787° North,	118.140686° West
Platform Eva	33.661797° North,	118.061127° West
Platform Esther	33.718769° North,	118.113174° West
Representative Pipeline, "Elly to Shore"	33.676243° North,	118.101540° West

Figure 12-2 shows the Southern California coastline and nearby islands with a grid numbering system used by MMS to identify specific land segments. USGS quadrangle maps can provide geographic details within these segments (see Table 12-1). Additional maps can be found in Section 9800 of the 2008 Los Angeles/Long Beach (Northern/Southern Sector) Area Contingency Plan (ACP).

The MMS tables list probabilities that specific land segments will be contacted by an oil spill starting at particular locations within 3, 10, and 30 days. The seasonal average probabilities for three and ten days are useful for identifying segments and resources at risk for each of the four primary seasonal periods (Tables 12-2 through 12-5 for Santa Barbara Channel facilities; Tables 12-6 through 12-9 for San Pedro Channel facilities). Thirty day periods were not used for this exercise due to their excessive duration compared to the spill response capabilities available. It is highly improbable that a spill would go without a response for 30 days.

Oceanographic and wind conditions can create seasonal differences in the possible distributions of oil spills. It is important to note that these tables are summaries of many runs of the model and a single oil spill would not actually impact every area cited.

(Note that, although MMS was reorganized into BOEM and BSEE in 2011, since the document referenced in this section was an MMS document, that acronym is retained for this discussion.)

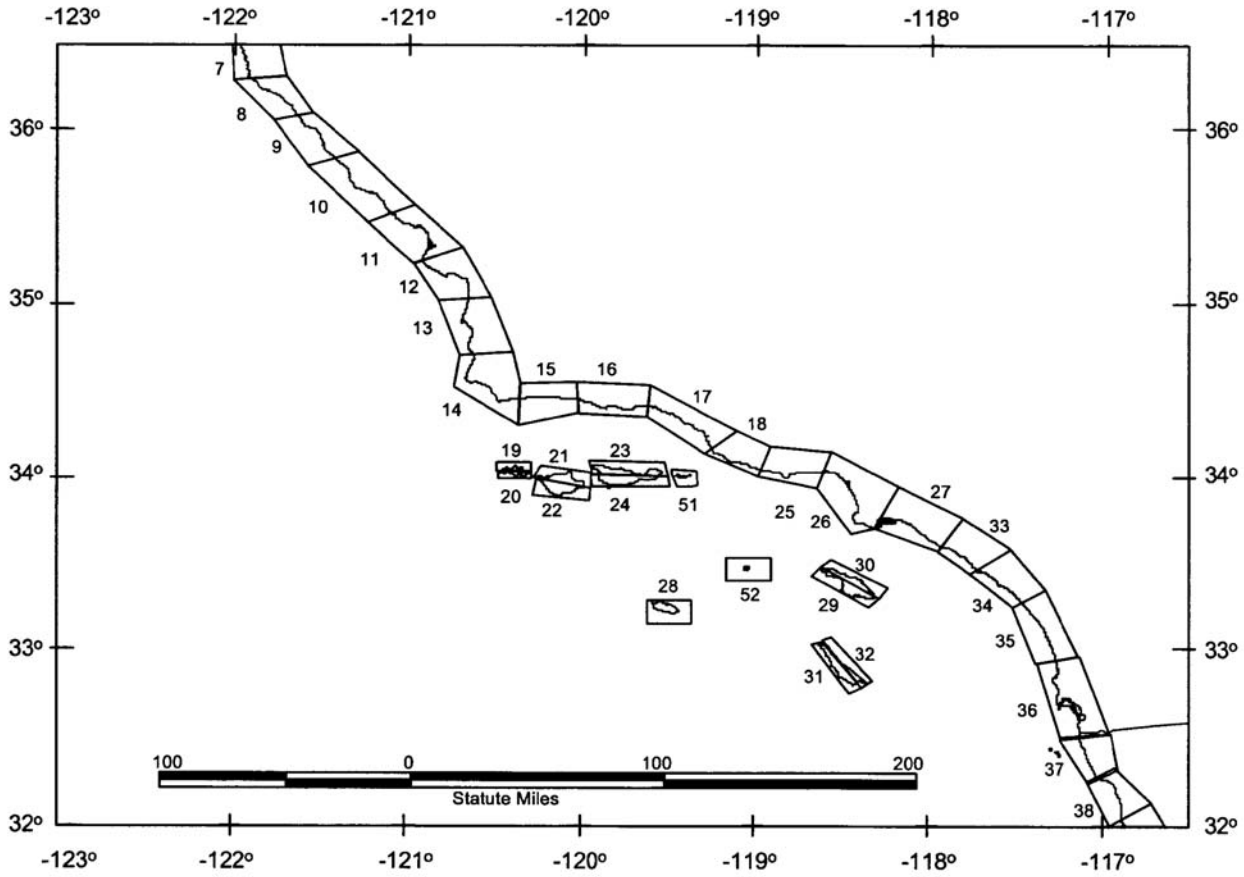

Figure 12-2. Southern California Coastline Land Segments
with MMS (2000) Grid Identifying Specific Land Segments

Table 12-1. Cross-Reference Guide to MMS Land Segments, USGS 7.5' Quad Maps and ACP (LA/LB 2008) Maps

MMS Land Segment	USGS 7.5' Quad Map Name	ACP Sensitive Sites Locator Map Page
Monterey County		
9	Lopez Point	*a*
	Cape San Martin	*a*
	Villa Creek	*a*
San Luis Obispo County (ACP Section 9811)		
10	Burro Mountain	9811.1–6
	Piedras Blancas	9811.1–30
	San Simeon	9811.1–30
	Pico Creek	9811.1–30
	Cambria	9811.1–72
11	Cayucos	9811.1–82, –95
	Morro Bay North	9811.1–95
	Morro Bay South	9811.1–115, –145
12	Port San Luis	9811.1–158
	Pismo Beach	9811.1–172, –188
	Oceano	9811.1–188
13	Point Sal	9811.1–221
Santa Barbara County (ACP Section 9812)		
13	Point Sal	9811.1–221, 9812.1–3
	Casmalia	9812.1–3
14	Surf	9812.1–3
	Point Arguello	9812.1–3
	Tranquillon Mountain	9812.1–3
	Point Conception	9812.1–49
15	Sacate	9812.1–49
	Gaviota	9812.1–49
	Tajiguas	9812.1–49
16	Dos Pueblos Canyon	9812.1–49
	Goleta	9812.1–123
	Santa Barbara	9812.1–123
17	Carpinteria	9812.1–123
	White Ledge Peak	9812.1–123
Ventura County (ACP Section 9813)		
17	Pitas Point	9812.1–123, 9813.1–1
	Ventura	9813.1–1
17,18	Oxnard	9813.1–1
18	Point Mugu	9813.1–1
Channel Islands (ACP Section 9814)		
19,20	San Miguel Island West	9814.1–3
	San Miguel Island East	9814.1–3
21,22	Santa Rosa Island West	9814.1–3
	Santa Rosa Island East	9814.1–3
23,24	Santa Cruz Island A	9814.1–3
	Santa Cruz Island B	9814.1–3
	Santa Cruz Island C	9814.1–3
	Santa Cruz Island D	9814.1–3
21	Santa Rosa Island North	9814.1–3
22	Santa Rosa Island South	9814.1–3
51	Anacapa Island	9814.1–3
Los Angeles County (ACP Section 9841)		
25	Triunfo Pass	9841.1–3
	Point Dume	9841.1–3
	Malibu Beach	9841.1–3
26	Topanga	9841.1–3
	Beverly Hills	9841.1–3
	Venice	9841.1–3
	Redondo Beach	9841.1–3
	San Pedro	9841.1–41
27	Long Beach	9841.1–41
Los Angeles Islands (ACP Section 9841)		
28	San Nicolas Island	9841.1–67
29	Santa Catalina Island South	9841.1–67
29,30	Santa Catalina Island West	9841.1–67
	Santa Catalina Island North	9841.1–67
	Santa Catalina Island East	9841.1–67
Orange County (ACP Section 9842)		
27	Seal Beach	9841.1–41
33	Newport Beach	9842.1–3
	Laguna Beach	9842.1–3
	San Juan Capistrano	9842.1–3
34	Dana Point	9842.1–3
San Diego County		
31,32	San Clemente Island North	*b*
	San Clemente Island Central	*b*
	San Clemente Island South	*b*
34	San Clemente	*b*
	San Onofre Bluff	*b*
	Las Pulgas Canyon	*b*
35	Oceanside	*b*
	San Luis Rey	*b*
	Encinitas	*b*
36	Del Mar	*b*
	La Jolla	*b*
	Point Loma	*b*

a – the "Sector San Francisco" ACP is not used in this Spill Response Plan.
b – the "Sector San Diego" ACP is not used in this Spill Response Plan.

Table 12-2. SBC Conditional Probabilities of Oil Spill Contact (Winter)

(Expressed as percent chance that an oil spill starting at a particular OCS lease location in the Winter Season will contact a certain land segment within 3 and 10 Days. [MMS 2000])
Note: blank cells = less than 0.5 percent probability.

MMS shoreline segment number	Contact within 3 days					Contact within 10 days				
	Platform Gina	Platform Gilda	Platform Habitat	Platform Hillhouse	Platform C	Platform Gina	Platform Gilda	Platform Habitat	Platform Hillhouse	Platform C
Mainland Segments										
14							1	1	1	1
15			1			1	3	9	8	9
16			3	6	6		1	6	14	14
17	3	1		1		3	1	4	3	2
18	3					10	3			
25						1				
Island Segments										
20										
21						1	2			1
22						1	1			
23	1	2	1			4	5	8	6	7
24						3	2	1	1	1
29						1				
30						1	1			
51	5	14	2			10	31	9	5	6
52						1				

MMS shoreline segment number	Contact within 3 days				Contact within 10 days			
	Pipeline B to Rincon Plant 1	Pipeline B to Rincon Plant 2	Pipeline Gilda to Mandalay Plant	Pipeline Gina to Mandalay Plant	Pipeline B to Rincon Plant 1	Pipeline B to Rincon Plant 2	Pipeline Gilda to Mandalay Plant	Pipeline Gina to Mandalay Plant
Mainland Segments								
14					1	1		
15					8	6	1	1
16	6	5			14	13	2	1
17	2	4	8	10	5	9	11	11
18			2	4		1	5	9
25							1	1
Island Segments								
21							1	1
22								
23			1		6	5	3	3
24					1	1	1	2
28							1	
30							1	1
51		1	7	4	4	10	15	11

Table 12-3. SBC Conditional Probabilities of Oil Spill Contact (Spring)

(Expressed as percent chance that an oil spill starting at a particular OCS lease location in the Spring Season will contact a certain land segment within 3 and 10 Days. [MMS 2000])
Note: blank cells = less than 0.5 percent probability.

MMS shoreline segment number	Contact within 3 days					Contact within 10 days				
	Platform Gina	Platform Gilda	Platform Habitat	Platform Hillhouse	Platform C	Platform Gina	Platform Gilda	Platform Habitat	Platform Hillhouse	Platform C
Mainland Segments										
16			1	4	6			1	10	15
17		1	2	1			1	10	19	11
18	3	1				3	2	3	3	3
Island Segments										
19										
20										
21										
22										
23										
24										
29						2	1			
30						4	3	1	1	
51										
52						1	1			

MMS shoreline segment number	Contact within 3 days				Contact within 10 days			
	Pipeline B to Rincon Plant 1	Pipeline B to Rincon Plant 2	Pipeline Gilda to Mandalay Plant	Pipeline Gina to Mandalay Plant	Pipeline B to Rincon Plant 1	Pipeline B to Rincon Plant 2	Pipeline Gilda to Mandalay Plant	Pipeline Gina to Mandalay Plant
Mainland Segments								
16	2	1			6	1		
17	6	24	3	1	30	48	3	1
18		1	3	9	4	4	4	10
25								
Island Segments								
21								
22								
23								
24								
28								
29							1	1
30					1	1	4	4
51								
52							1	

Table 12-4. SBC Conditional Probabilities of Oil Spill Contact (Summer)

(Expressed as percent chance that an oil spill starting at a particular OCS lease location in the Summer Season will contact a certain land segment within 3 and 10 Days. [MMS 2000])
Note: blank cells = less than 0.5 percent probability.

MMS shoreline segment number	Contact within 3 days					Contact within 10 days				
	Platform Gina	Platform Gilda	Platform Habitat	Platform Hillhouse	Platform C	Platform Gina	Platform Gilda	Platform Habitat	Platform Hillhouse	Platform C
Mainland Segments										
16			1	3	4			1	3	6
17								1	6	6
18	7	1				33	22	28	36	29
25						4	4		1	
Island Segments										
19										
20										
21										
22										
23										
24										
29										
30										
51										
52										

MMS shoreline segment number	Contact within 3 days				Contact within 10 days			
	Pipeline B to Rincon Plant 1	Pipeline B to Rincon Plant 2	Pipeline Gilda to Mandalay Plant	Pipeline Gina to Mandalay Plant	Pipeline B to Rincon Plant 1	Pipeline B to Rincon Plant 2	Pipeline Gilda to Mandalay Plant	Pipeline Gina to Mandalay Plant
Mainland Segments								
16	2				2			
17	1	19			8	21		
18	1	13	29	43	42	46	47	56
25					2	1	3	3
Island Segments								
21								
22								
23								
24								
28								
29								
30								
51								
52								

Table 12-5. SBC Conditional Probabilities of Oil Spill Contact (Autumn)

(Expressed as percent chance that an oil spill starting at a particular OCS lease location in the Autumn Season will contact a certain land segment within 3 and 10 Days. [MMS 2000])
Note: blank cells = less than 0.5 percent probability.

MMS shoreline segment number	Contact within 3 days					Contact within 10 days				
	Platform Gina	Platform Gilda	Platform Habitat	Platform Hillhouse	Platform C	Platform Gina	Platform Gilda	Platform Habitat	Platform Hillhouse	Platform C
Mainland Segments										
14						1	1	1	2	1
15					1	1	2	9	12	13
16			1	8	8	1	3	6	18	18
17	1					4	1			
18						1				
Island Segments										
19						1	3	10	13	13
20								1	1	1
21							2	15	9	10
22								1		1
23						2	3	7	5	5
24						1				1
51		1				3	3	1	1	1

MMS shoreline segment number	Contact within 3 days				Contact within 10 days			
	Pipeline B to Rincon Plant 1	Pipeline B to Rincon Plant 2	Pipeline Gilda to Mandalay Plant	Pipeline Gina to Mandalay Plant	Pipeline B to Rincon Plant 1	Pipeline B to Rincon Plant 2	Pipeline Gilda to Mandalay Plant	Pipeline Gina to Mandalay Plant
Mainland Segments								
14					1	1	1	
15					11	7	1	1
16	4	2			16	22	2	1
17		1	3	4		1	8	11
18				1				1
25								
Island Segments								
19					11	8	1	
20					1	1		
21					7	4		
22					1			
23					5	3	2	1
24								
51					1	1	1	1

Table 12-6. SPC Conditional Probabilities of Oil Spill Contact (Winter)

(Expressed as percent chance that an oil spill starting at a particular OCS lease location in the Winter Season will contact a certain land segment within 3 and 10 Days. [MMS 2000])
Note: blank cells = less than 0.5 percent probability.

MMS shoreline segment number	Contact within 3 days				Contact within 10 days			
	Platform Edith	Platform Eva	Platform Esther	Pipeline Elly to shore	Platform Edith	Platform Eva	Platform Esther	Pipeline Elly to shore
Mainland Segments								
18					1			
25	3	2	10	3	4	4	15	6
26					1			
Island Segments								
22	1	5	1	2	10	8	2	6
23	4	32	33	27	11	36	39	35
24	1	1		1	2	1	2	2

Table 12-7. SPC Conditional Probabilities of Oil Spill Contact (Spring)

(Expressed as percent chance that an oil spill starting at a particular OCS lease location in the Spring Season will contact a certain land segment within 3 and 10 Days. [MMS 2000])
Note: blank cells = less than 0.5 percent probability.

MMS shoreline segment number	Contact within 3 days				Contact within 10 days			
	Platform Edith	Platform Eva	Platform Esther	Pipeline Elly to shore	Platform Edith	Platform Eva	Platform Esther	Pipeline Elly to shore
Mainland Segments								
18								
25			2				2	
26								
Island Segments								
22	1	12	1	4	12	15	3	7
23		42	56	44	5	43	60	49
24	1	1		1	2	1	2	2

Table 12-8. SPC Conditional Probabilities of Oil Spill Contact (Summer)

(Expressed as percent chance that an oil spill starting at a particular OCS lease location in the Summer Season will contact a certain land segment within 3 and 10 Days. [MMS 2000])
Note: blank cells = less than 0.5 percent probability.

MMS shoreline segment number	Contact within 3 days				Contact within 10 days			
	Platform Edith	Platform Eva	Platform Esther	Pipeline Elly to shore	Platform Edith	Platform Eva	Platform Esther	Pipeline Elly to shore
Mainland Segments								
18								
25			2		1		2	
26								
Island Segments								
22	11	3		1	31	5	2	2
23	9	71	75	71	24	72	76	73
24								

Table 12-9. SPC Conditional Probabilities of Oil Spill Contact (Autumn)

(Expressed as percent chance that an oil spill starting at a particular OCS lease location in the Autumn Season will contact a certain land segment within 3 and 10 Days. [MMS 2000])
Note: blank cells = less than 0.5 percent probability.

MMS shoreline segment number	Contact within 3 days				Contact within 10 days			
	Platform Edith	Platform Eva	Platform Esther	Pipeline Elly to shore	Platform Edith	Platform Eva	Platform Esther	Pipeline Elly to shore
Mainland Segments								
15					1	1	1	1
18					1	1	1	1
25	1	1	12	4	7	6	16	11
26					1			
Island Segments								
22	2	3		3	12	7	3	6
23	5	51	51	44	27	59	56	54
24	1		1		3	2	3	2

The MMS tables show non-zero probabilities for locations on the mainland and most Southern California islands. These tables are summaries of many runs of the model and a single oil spill would not actually impact every area cited.

The ACP (Volume II–Section 9800) lists environmentally sensitive resources for each of these locations (see Table 12-1 of this Oil Spill Response Plan). For virtually all locations, marine mammals and seabirds are of concern. Wetland biota, including various fish species, are listed for the coastal segments. Cultural and economically sensitive areas are also listed and described.

Protection strategies in the ACP for each segment emphasize containment and offshore recovery and consideration of early use of alternative response strategies, including use of dispersants. Sensitive resources and their protection strategies are discussed in Section 5.3.2 of Volume 1 of this Plan. Response techniques are discussed in Volume 1, Section 5.6 of this OSRP.

12.3 Resources at Risk

The current Area Contingency Plan (ACP) contains the most detailed and up-to-date information available on sensitive areas and response strategies. This information has been compiled by the Coast Guard and the California Office of Spill Prevention and Response (OSPR), with input from other Federal, State, and local agencies and industry. Maps within the ACP will be utilized by the Company in coordination with the RRT during a spill response.

A copy of the current ACP will be available to Company response personnel throughout a spill event. The natural resources of concern that are present in areas identified by the MMS OSRA model as having a greater than zero percent probability of being a landfall for a hypothetical oil spill from a Company platform or pipeline are included in Table 5-4 (Resources cited in ACP) in Volume 1 of this Plan. Table 5-4 covers resources in all land segments noted in Tables 12-2 through 12-9 as well as those for which no impact was predicted in the MMS model runs. Table 12-1 provides cross-references between the MMS Land Segments and ACP maps. For virtually all locations, marine mammals and seabirds are of concern. Wetland biota, including various fish species, are also listed for the coastal segments.

Protection strategies in the ACP for each segment emphasize containment and offshore recovery and consideration of early use of alternative response strategies, including use of dispersants. Protection strategies for sensitive resources are discussed in Section 5.6.1 of Volume 1 of this Plan. Response techniques and resources at risk are discussed in Volume 1, Section 5 of this OSRP.

Table 12-10 summarizes the resources within the potential impact zones as identified in Tables 12-2 through 12-9. Section 5.7.3 of Volume 1 describes response strategies to protect wildlife resources. Section 5.6.2.4 of Volume 1 describes precautions necessary to protect resources during oil spill response and recovery operations.

Table 12-10. Summary of Resources at Risk

Resource Category	Species and Areas of Concern	
Marine Mammals	Sea Otters	Harbor Seal
	California Sea Lions	Steller Sea Lions
	Northern Elephant Seals	Guadalupe Fur Seals
Fish/Marine Resources	Steelhead trout	Crab
	Surfperch	Tidewater Goby
	Sculpin	California Grunion (during spawning)
	Red & Black Abalone	Surf Grass
	Spiny Lobster	Salt Marsh Bird's Beak
	Pismo Clams	Eelgrass
Birds	Brown Pelican	Shorebirds
	Seabirds	Western Gulls
	Black Oyster Catchers	Brandt's Cormorants
	Pelagic Cormorants	Peregrine Falcons
	Tufted Puffins	Pigeon Guillemots
	Western Snowy Plover	Sandpipers
	Yellowlegs	Grebes
	Dabbling Ducks	Wading birds
	Rhinoceros Auklet	California Least Terns
	Ashy Storm-Petrel	Cassin's Auklet
	Belding's Savannah Sparrow	Light Footed Clapper Rail
	Leach's Storm-Petrel	Black Storm-Petrel
Other Natural Resources	Red-legged Frogs	Southwestern Pond Turtle
	Snowy Plover habitat	Compact Cobweb Thistle
	Two-striped Garter Snake	Wetland habitat
Habitats / Reserves	Point Conception to Ellwood	El Estero Lagoon
	Naples Reef	Allessandro Lagoon
	Burmah Beach	Santa Clara River Estuary Nat. Preserve
	Tecolote Creek	Mugu Lagoon
	Coal Oil Point	Wetlands
	Devereux Slough and Lagoon	Creek Mouths
	University Lagoon	Channel Islands National Park
	Goleta Rocks/Sough/Point	Channel Island Marine Sanctuary
	Offshore City of Santa Barbara	

(Continued on next page)

Table 12-10. Summary of Resources at Risk

Resource Category	Species and Areas of Concern	
Economic Resources	**Water Intakes**	**Parks, Beaches, Recreational Areas**
	City of Santa Barbara	Gaviota State Park
		Refugio State Beach Park
		El Capitan State Beach Park
	Mariculture Areas	Santa Barbara Shore Access
	Port Hueneme Area	Isla Vista Beach
	Ormond Beach Area	Goleta Beach County Park
	Santa Barbara Harbor, Stearns Wharf	Arroyo Burro Beach
	Arroyo Burro Beach	West & East Beaches, Santa Barbara
	Ellwood – Goleta	Stearns Wharf
	Summerland	Chase Palm Park
		Butterfly Beach
		Hammonds Beach
	Marine Services & Commercial Fishing	Eucalyptus Lane
	Santa Barbara Harbor	Miramar Beach
	Carpinteria Pier	Lookout County Park
	Ventura Harbor	Loon Point Access
	Ventura Yacht Club	Carpinteria City Beach
	Ventura Isle Marina	Carpinteria State Beach Park
	Ventura West Marina	Rincon Beach County Park
	Vintage Marina	Hobson County Park
	Channel Islands Harbor	Rincon Parkway North
	Anacapa Isle Marine	Faria County Park
	Bahia Cabrillo Yacht Landing	Emma K. Wood State Beach
	Channel Islands Commer. Fishing Marina	San Buenaventura State Beach
	Channel Islands Marina	Channel Islands National Park H.Q.
	Channel Islands Small Boat Marina	McGrath State Beach
	Cisco Sportfishing	Mandalay State Beach
	Pacific Corinthian Marina	Oxnard State Beach
	Peninsula Yacht Anchorage	Port Hueneme Beach Park
		Point Mugu State Park
Cultural Resources	None identified. A Cultural Resource Specialist would advise the spill response team as necessary.	

12.4 Toxicity Effects of Spilled Oil

The consequences of oil spills on wildlife and shoreline habitats are well documented. Crude oil persistence in the environment is related to specific gravity. Heavy oils contain fewer light hydrocarbons which evaporate more readily than heavier hydrocarbons. Therefore, a larger proportion of heavy oils remains in water and on shore compared to lighter oils which evaporate more readily. Also, heavier oils may coat or stick to substrate more readily than light oils, allowing them to remain in the environment for longer periods of time. Consistent with state and federal response planning regulations, heavier oils are considered to be more persistent in the environment than lighter oils. Generally, however, lighter oils are considered to be more toxic to wildlife.

Crude oil may contain varying amounts of Benzene and N-Hexane, both of which have demonstrated toxic effects in animals. Benzene has been shown to have immunotoxicity, testicular, reproductive cycle, chromosomal, and embryo/fetotoxicity effects in animal studies, but has not been found to be teratogenic (to cause deformations in embryos). N-Hexane has shown mild, transitory effects on the spleen and white blood cells, as well as evidence of lung damage. In addition, fetotoxicity has been demonstrated at levels which cause toxic effects in the mother. At high levels, N-Hexane exposure via inhalation has resulted in testicular and epididymal atrophy.

12.5 Facility Descriptions & Spill Histories

12.5.1 OCS Platforms

The Company's offshore platforms and their associated pipelines are described in Section 1.5 of this Oil Spill Response Plan.

Spill History
The vast majority of reportable spills from OCS Platforms have ranged from a few drops to a couple of Tablespoons. During the past ten years there has been one major petroleum release from a Company platform.

- December 7, 2008—A corrosion-caused hole on a "shipping can" on Platform A released approximately 27 bbl into the ocean. (This and similar vessels on Company platforms have since been taken out of service.) The IMT was activated. Unified Command was established with OSPR and USCG. This spill was completely cleaned up in three days.

12.5.2 Rincon Onshore Facility

Five pipelines enter or leave the Rincon Onshore Facility (ROSF). Incoming oil and incoming gas account for two of the lines. Another two are oil sales to pipeline, and gas sales to Southern California Gas Company. The last carries produced water.

1. A 12" pipeline brings wet oil into the lower level of the facility; then a 14" pipeline carries it to the upper level. The pipeline carries approximately 6,000 BPD at 110 psig at the receiver; then boosted to 300 psig to the upper level.
2. A 12" pipeline brings wet gas into the facility. It carries approximately 5.5 MMCFD at 50-60 psig.
3. A 6" pipeline carries dry oil from LACT units to pipeline at 50-70 psig.
4. A 6" pipeline carries dry gas to Southern California Gas Company at 8-900 psig.
5. A 4" pipeline carries produced water to Vintage Petroleum at 330 psig.

Incoming emulsion is heated in one of two Alpha Laval plate and frame heat exchangers, which are heated by Chevron 46 heating oil from the incinerator. The heated emulsion flows to the Freewater Knockout (FWKO) Vessel for separation of water and oil. Oil flows from the FWKO to one of five heater treaters for final separation. It then flows to LACT tanks and LACTs for sales to pipeline.

All the tanks at ROSF are above ground and within adequate secondary containment. Table 12-11 provides the volumes of the ROSF tanks and vessels, as well as their impoundment (secondary containment) volumes. All leaks are expected to be contained within secondary containment. If somehow secondary containment were to fail (e.g., in an extreme earthquake), the direction of flow from that area is also provided in Table 12-11. The locations of these tanks are provided in the ROSF Facility Diagram found in Appendix A. Site Drainage Diagrams are also provided in Appendix A. MSDSs of the material contained in the tanks are available in the ROSF facility office.

Spill History

Until April 1996, ROSF was operated by Unocal. From 1996 to May 2004, the facility was operated by Nuevo Energy. PXP operated it from May 2004 to February 2005. DCOR has been the operator since February 20, 2005. In the past ten years, there have been the following reportable oil spills:

- August 11, 2000 — Due to a power outage, two contained spills occurred: (1) backflow from a vessel caused an overflow into the sump's containment (approx. 8 bbl water), (2) drain under the grating of Vessel V-6 backed up and caused oil (approx. 2 bbl) to pool in the containment area of V-6. The spill was contained onsite and did not affect navigable waters or marine waters of the state. The Operators isolated the associated lines. Cleanup of containment areas was done by removing existing gravel and replacing it with clean gravel. A check valve has since been installed to prevent re-occurrence.
- February 1, 2003—Tank TK-1D overflowed. Oil was confined to secondary containment except for a small amount that high winds blew outside the berm. No waterways or sensitive habitats were impacted. High-level alarms have been installed to alert operators.
- May 1, 2006—A turbine lube oil line parted, blowing 100 gal of oil inside its enclosure. Oil was contained inside the pan. Oil was removed by vac-truck and sent to the processor. Vibration through time probably weakened line. Line was repaired, and the turbine was put back in service, until October 2006, when it was removed from the facility.
- June 25, 2007—Valve on 1/2" line on high pressure side of booster pump experienced internal erosion, resulting in a leak. Wind carried vertical oil spray onto local road, and brush. Total estimated volume was 4 bbl. Contractors were used to clean road and clear the oiled brush. Pipeline was shut down and valve replaced.
- March 17, 2008—Lower Level 1/2" pump seal flush line leaked 16 bbl into concrete containment. Leak probably due to erosion by sand at 90° bend. Oil was squeeged to sump drain and put back into process flow. Cleaned containment area with soap and water. The line was turned off and isolated. It was replaced with stainless steel pipe.

Table 12-11. Rincon Onshore Facility Tanks & Containment

(And failure analysis. Any consequences from past failures and releases are described in §12.5.1 Spill History)

Tanks & Vessels									Secondary Containment		
ID No.	Tank Name	Volume (bbl)	Volume (gal)	Average Daily Vol. Stored (bbl)	Contents	Type of Failure	Rate (bbl/hr)	Direction of Flow	Dimensions (ft x ft x inch)	Approximate Volume (bbl)	Approximate Volume (gal)
TK - 1A	L.A.C.T. Tank	3,000	126,000	OOS	N/A	Rupture; leakage	N/A	SW if out of containment	120' x 120' x 20"	4,275	170,550
TK - 1B	L.A.C.T. Tank	3,000	126,000	240	Dry Oil	Rupture; leakage	3,000	SW if out of containment			
TK - 1C	L.A.C.T. Tank	3,000	126,000	240	Dry Oil	Rupture; leakage	3,000	SW if out of containment			
TK - 1D	L.A.C.T. Tank	3,000	126,000	240	Dry Oil	Rupture; leakage	3,000	SW if out of containment			
TK3	Wash Tank	3,000	126,000	Standby	N/A	Rupture; leakage	N/A	SW if out of containment	160' x 117' x 24"	6,670	280,140
TK4	Skim Oil Tank	500	21,000	90	Skim Oil and Gas	Rupture; leakage	500	SW if out of containment			
TK5	Wash Tank	3,000	126,000	1,250	Produced Water	Rupture; leakage	3,000	SW if out of containment			
TK8A	Clean Prod. Water	5,000	210,000	1,500	Produced Water	Rupture; leakage	5,000	SW if out of containment			
TK8B	Clean Prod. Water	5,000	210,000	300	N/A	Rupture; leakage	N/A	SW if out of containment			
GF-1A	Wemco Depurator	173	7,266	0	Prod. Water, Gas, and Oil	Rupture; leakage	173	SW if out of containment			
GF-1B	Wemco Depurator	173	7,266	173	Prod. Water, Gas, and Oil	Rupture; leakage	173	SW if out of containment			

Table 12-11. (Continued)

Tanks & Vessels									Secondary Containment		
ID No.	Tank Name	Volume (bbl)	Volume (gal)	Average Daily Vol. Stored (bbl)	Contents	Type of Failure	Rate (bbl/hr)	Direction of Flow	Dimensions (ft x ft x inch)	Approximate Volume (bbl)	Approximate Volume (gal)
V1[1]	Free Water Knockout	1,211	50,862	825	Produced Water and Oil	Rupture; leakage	1,100	SW if out of containment	86' x 28' x 2.5'	1072[1] (to 4,270 bbl[1])	45,033
V2A[1]	Heater Treater	1, 211	50,862	Standby	N/A	Rupture; leakage	N/A	SW if out of containment	86' x 22' x 2.5'	842[1] (to 4,270 bbl[1])	35,383
V2B[1]	Heater Treater	1, 211	50,862	825	Produced Water and Oil	Rupture; leakage	1,100	SW if out of containment	86' x 22' x 22"	620[1] (to 4,270 bbl[1])	26,040
V2C[1]	Heater Treater	1, 211	50,862	OOS	N/A	Rupture; leakage	N/A	SW if out of containment	86' x 22' x 22"	620[1] (to 4,270 bbl[1])	26,040
V2D[1]	Heater Treater	1, 211	50,862	OOS	N/A	Rupture; leakage	N/A	SW if out of containment	86' x 22' x 22"	620[1] (to 4,270 bbl[1])	26,040
V2E[1]	Heater Treater	1, 211	50,862	OOS	N/A	Rupture; leakage	N/A	SW if out of containment	86' x 22' x 20"	560[1] (to 4,270 bbl[1])	23,520
LOT	Lube Oil Tank[2]	150	6,300	27	Lube Oil				13' x 13' x 24"	60[2] (to 3,086 bbl[2])	2,520
V5	Flare Knockout	179	7,520	0	N/A				N/A[3]		
V5A	Flare Knockout	403	16,921	0	N/A				N/A[3]		
V6A	Condensate Vessel	50	2,100	20	Condensate				26' x 20' x 10"	75	3,150

Table 12-11. (Continued)

Tanks & Vessels								Secondary Containment		
ID No.	**Tank Name**	**Volume** (bbl)	(gal)	**Average Daily Vol. Stored** (bbl)	**Contents**	**Type of Failure**	**Rate** (bbl/hr)	**Direction of Flow**	**Dimensions** (ft x ft x inch)	**Approximate Volume** (bbl)	(gal)
—	Gasoline Tank	24	1,000	400 gal	Gasoline				24' x 10' x 15''	50	2,100
V7	Inlet Gas Scrubber	50	2,100	0	Water and Condensate				160' x 120' x 2'	1,960	82,320
Total ROSF		**35,547**	**1,492,974**								
TK-6A	Upper Level Sumps concrete-lined 1,000 bbl each			Standby	—	N/A			80' x 60' x 5'	4,270	179,340
TK-6B				750	Water & Oil	N/A					
TK-7A	Lower Level Sumps (concrete-lined emergency pits) 3,200 bbl each			0	—	N/A			160' x 120' x 2'	6,840	287,000
TK-7B				0	—	N/A					

OOS = Out of Service

(1) All vessel containment systems are tied together by a common drain line to the Upper Level Sumps, which are in a 4,270 bbl containment area.

(2) Lube Oil Tank containment is tied to a containment area (volume = 3,086 bbl) in the compressor plant building by a common 4" drain line. Also, refill orders are never more than 1000 gal.

(3) Any liquids that may accumulate prior toV5 are pumped into the Heater Treater discharge line before reaching vessel; therefore V5 remains dry. Also, for this reason, liquids never reach V5A.

- June 23, 2008—Lower Level booster pump seal flush line failed due to sand erosion. Over 2 bbls of oil and produced water flowed into secondary and tertiary containment area. No fluids were released to environment. Pump was shut down upon discovery of spill. Spilled oil was recovered with vacuum truck and returned oil to ROSF process system. The oil residue in the containment area was washed with soap and pressure washer. The oily gravel was removed for waste disposal and the area resurfaced with clean gravel. The company has intensified preventative maintenance procedures to inspect seal flush lines for wear every 30 days.
- August 4, 2008—Booster Pump seal flush line valve body washout released 62 bbl of oil into secondary containment. Response included: Returned oil to process drains. Washed down containment area with water. Replaced valve. Fabricated new orifice fitting to avoid valve failure. Additional remedial actions taken include: Fabricated and installed spill guards around each pump case and insulation over all pipelines to prevent high pressure leaks from spraying upward and to keep all leaks within containment; high level alarm with automatic system (pipeline and pump) shut-down has been installed in lower level containment area. Also, the position of Safety Tester has been created to continually check all systems.

The maturing nature of the source-oil fields has resulted in increased quantities of sand with the incoming oil. The potential for oil spills has increased because of the resulting erosional nature of the sand in the oil. As evidenced by the recent spills, it has caused pump, valve, and line failures. The company will continue to take steps to lessen these problems. Clearly, these kinds of leaks do not result in worst-case spills, which would be associated with failures on storage tanks. Our worst-case calculations (see § 11) are based on our tank volumes.

12.5.3 Mandalay Onshore Facility

Eight pipelines enter or leave the Mandalay Onshore Facility (MOSF). Gas sales to Southern California Gas Company, oil sales to pipeline, and fuel gas purchased from Venoco account for three of the lines. The other five lines run to and from Platforms Gina and Gilda.

1. A 10” line carries full well stream production from Platform Gina to the facility. It carries approximately 1,000-1,500 BPD (~70 % water cut) and 2,200 MCFD at 290-335 psig.
2. Oil and water production from Platform Gilda are brought onshore by a 12” pipeline. It carries 5,500 to 7,000 BPD (water cut 70%) at 140 psig.
3. Gas production from Platform Gilda is brought onshore by a 10” pipeline. Approximate volume is 950-1,300 MCFD at 250-300 psig.
4. A 6” pipeline carries treated water from MOSF to Platform Gilda for disposal. Approximate volume is 2,000-6,000 at 24-150 psig.
5. A 6” pipeline also runs from Platform Gina. It carries 75-90 MCFD at 27-50 psig gas production from all well casing on Platform Gina to the MOSF.

Production from the oil wells on Platforms Gilda and Gina enters the MOSF via 12" and 10" pipelines. Gina production goes to a two-phase separator and is metered on the discharge. Gilda

goes into a Micro motion meter, Heat Exchanger 1 or 2, and then to the treater, and is metered on the discharge. The oil is sold from the MOSF at either LACT Unit A or B to Pipeline.

Sales oil from the heater treaters is combined and sent through the hot side of Heat Exchanger Numbers 1 and 2 as the heating fluid. The sales oil then goes to Oil Shipping Tank T-5 prior to shipping through the LACT meter.

The oily water from Heater Treater Number 1 is combined with oily water from Heater Treater Numbers 2 and 3. The combined oily water stream goes to Heat Exchanger Number 3 as the heating fluid. It is then combined with oily water from the Free Water Knock Out, and sent to Water Wash Tank T-1 and the Leau Claire Flotation Cell. Treated water is sent back to Platform Gilda via a 6" line for offshore disposal. Reject oil from the LACT Unit is sent to Shipping/Rerun Tank T-5, and, if necessary, T-6.

The size and content of the various tanks at MOSF are presented in Table 12-12. All leaks are expected to be contained within secondary containment. Furthermore, tthe natural topography in which MOSF is situated is such that, even if the existing containment features within the facility were not present, a spill could not reach waters of the U.S. or the State. The locations of these tanks are shown in the MOSF Facility Diagram found in Appendix A. MSDSs of the material contained in these tanks are available in the facility office

Full well production from the oil wells on Platform Gina enters the MOSF via a 10" pipeline. The production goes to a two-phase separator, Vessel F-2. The Gina flash gas off of Separator F-2 is combined with gas from F-5 and sent to sales. This gas stream is metered before it enters the dehydration system. The fuel and make-up gas are metered also metered from F-5.

Spill History
DCOR has not had any reportable spills from the MOSF. There has not been a reportable spill in the last ten years. As the operator of the MOSF prior to April 9, 1996, Unocal experienced one reportable spill on May 10, 1991. Although this spill originated from a pipeline rupture outside the three-mile limit, the slick threatened marine waters of the state. The spill did not occur at the MOSF, but did originate from an offshore pipeline covered by this plan.

12.5.4 Fort Apache Facility

Fort Apache is located in a residential area in the city of Huntington Beach. The site is bounded by Heil Avenue on the south, residences on the east and west, and a storm drainage channel on the north. Three active pipelines enter or leave the facility. The plant dehydrates gross fluid from Platform Eva and ships oil to a Chevron tie-in located at the intersection of Heil and Goldenwest. Gross oil production from Platform Eva comes into the facility through an 8-inch line. Sales oil leaves the facility via a 6-inch pipeline. Make-up gas for blanketing or heater treater burners, when needed, is taken from a two-inch city gas supply line.

The size and content of the various tanks at Fort Apache are presented in Table 12-13. All leaks are expected to be contained within secondary containment (see Table 12-13). The locations of these tanks are shown in the Ft Apache Facility Diagram (which also shows the surface flow)

Table 12-12. Mandalay Onshore Facility Tanks & Containment

Tanks & Vessels					Secondary Containment		
ID No.	Description	Volume (bbl)	Volume (gal)	Contents (approx. distribution/ variable)	Dimensions (ft x ft x ft)	Approximate Volume (bbl)	Approximate Volume (gal)
T-1	Surge Tank	600	25,200	Crude Oil (5%) & Water	95' x 44' x 2.5'	1,180	49,560
T-2	Produced Water Return Tank	560	23,520	Crude Oil (1%) & Water			
T-3	Reclaimed Oil Tank	100	4,200	Crude Oil (5%) & Water			
T-4	Slops Tank	560	2,240	Crude Oil (10%) & Water			
T-5	Shipping Oil Tank	3,000	126,000	Oil (100%)	115' x 64' x 4'	4,350	182,700
T-6	Shipping Oil Tank	3,000	126,000	Oil (100%)			
T-7	Oil Treating Tank	2,000	84,000	Crude Oil (50%) & Water	80' x 60' x 3.5'	3,000	126,000
T-8	Water Treating Tank	1,500	63,000	Crude Oil (1%) & Water			
V-1 (FWKO)	Free Water Knock Out	950	39,900	Gas, Oil (5%-30%), & Water	100' x 95' x 3'	5,000	210,000
HT-1	Heater Treater	1,200	50,400	Gas, Oil (35%), & Water			
HT-2	Heater Treater	1,200	50,400	Gas, Oil (35%), & Water			
HT-3	Heater Treater	1,200	50,400	Gas, Oil (35%), & Water			
—	Amine Plant	140	5,880	40% DEA, & Water	60' x 31' x 6"	166	6,957
Total MOSF Tanks		**15,870**	**620,060**				

Table 12-13. Ft Apache Onshore Facility Tanks & Containment

Tanks & Vessels				Secondary Containment	
ID No.	**Description**	**Volume** (bbl)	**Contents**	**Structure**	**Capacity** (bbl)
Production gathering and shipping pipelines				Surface drains connected to trench and ground surface area adjacent to tanks drains to concrete bermed area	1470
T1	Waste Water Tank	500	Crude Oil & Water		
T2	Waste Water Tank	250	Crude Oil & Water		
T4	Storage Tank	1000	Crude Oil & Water	Concrete block wall	1660
T10	Bulk Storage Tank	165	Hydraulic Oil		
T3	Skim Tank	10	Crude Oil & Water	Concrete block wall.	1470
V1	Waste Water Vessel	375	Crude Oil & Water		
HT2	Heater Treater	375	Crude Oil & Water		
HT3	Heater Treater	375	Crude Oil & Water		
HT4	Heater Treater	375	Crude Oil & Water		
V5	Free Water Knock Out	650	Crude Oil & Water		
Total Ft Apache Tanks		**3914 bbl**	**(164,388 gal.)**		

found in Appendix A. MSDSs of the material contained in these tanks are available in the facility office.

The well stream supply from Platform Eva runs to the Freewater Knockout Vessel, V-5, where crude oil and water are separated and oil is transferred to Heater Treaters HT-2, -3, and -4 for further separation. Sales oil is then taken from the Heater Treaters and transferred to the Crude Oil Shipping Tank, T-4. From the shipping tank, the oil metered and sold through the LACT (Lease Automatic Custody Transfer) Units. From the LACT Units, the oil is transferred into the Company's Sunset Heights Pipeline and then into the Chevron Pipeline System.

The produced water from the Freewater Knockout Vessel, V-5, is combined with produced water from Heater Treaters, HT-2, -3, and -4. The combined produced water stream goes to Waste Water Vessel, V-1, where skimmed oil is sent back to the upstream side of the Freewater Knockout Vessel, V-5. Wastewater is transferred from Waste Water Vessel, V-1, to Produced Water Tanks, T-1 and T-2, for treatment and eventual release to the city sewer system.

Spill History
There were two contained petroleum releases in 2000 (prior to DCOR becoming the owner/operator in 2005). They are summarized as follows:

- June 12, 2000 — A Southern California Edison power failure caused a communication failure between Fort Apache and Platform Eva. When power was restored, the valve opened allowing approximately 2.5 barrels of product to flow through the facility and out the relief stack within tank farm secondary containment. Facility operators hosed oil into trench and pit system of the tank battery for recovery. The spill was contained within secondary containment at all times.
- June 20, 2000 — A dump valve on heater treater #1 stuck in open position dumping contents of wastewater tank to Orange County Sanitation District storm water system. Approximately 15 barrels of oil and 85 barrels of water were released directly into the system and no volume was released to the environment. Company personnel, Huntington Beach Fire Dept. HazMat Response Team responded to the site. There was no impact to the public, property, or the environment. With input from the Fire Department, a Mitigation Action Plan was prepared and implemented at the Facility.

12.5.5 State Platform Esther

Platform Esther is an oil and gas production platform located in coastal waters approximately 1.7 miles off Seal Beach, California. It has 17 producing wells and 5 injection wells available for use. Production is pumped to the surface using electric submersible pumps and enters a production or test header. For normal gross production, the wells are pumped into the main separator. For a well test, production from one or two wells is routed through two test headers to the test separators. The separators are two-phase and four-phase units, which separate water, oil, and gas. The gas is compressed on the platform and sent to shore via a 10-inch Breitburn Energy Company transmission line.

Production facilities on the platform will achieve pipeline-quality crude and injection-quality water. The production system is capable of handling up to 5,000 barrels of oil per day, 18,000 barrels of water per day, and 600 million cubic feet of gas per day. A water processing system removes any remaining oil and solids from the separator water discharge until it is injection-quality.

The pipeline-quality crude is transported to shore via the 3.5-inch pipeline to a vault at 1st Avenue. It is approximately 1.9 miles long and normally operates at 325 psi. The oil is then transferred to Chevron at the 1st Avenue vault in Seal Beach. The pipeline is protected along its entire length by a 10-inch casing pressurized with nitrogen at 100 psi and an automatic emergency shutdown system. It is also protected from over/under pressurization with various safety shutdowns and relief valves. If it is necessary to stop flow in the pipeline, it can be done from within the control room or at the control panel located at the shipping pipeline. The pipeline is equipped with a shutdown valve at Platform Esther to provide protection during upset conditions. A pig launcher is located at Platform Esther and a pig receiver is located at the 1st Avenue vault.

Platform Esther contains three decks: the production, drill, and subdecks. Each deck is equipped with secondary containment combings.

Spill History
There have been no major petroleum releases attributed to the Company from Platform Esther and its associated oil pipeline during the past ten years. There have been reportable spills of a few drops, but the largest reportable spill was 1 cup of motor oil in 2009.

12.5.6 State Platform Eva

Platform Eva is an oil and gas production platform located in the Huntington Beach Oil Field on California State Oil and Gas Leases. The platform is located approximately 2.1 miles offshore in 58 feet of water. Platform Eva has a total of 37 wellheads available for use. Production is pumped to the surface using electric submersible pumps.

For normal gross production, the wells are pumped into the main separator. For a well test, production from one or two wells is routed through two test headers to the test separators.

The production stream, which contains gas, oil, water, and solids is piped to the inlet of the three-phase separator. After metering, the free oil leaving the gross separator is transported directly to the shipping tank for shipment to Fort Apache Facility. The free water leaving the gross separator is contaminated with oil, making it unsuitable for injection. This oil is routed to the DEV/surge tank for capture and eventual re-run back to the gross separator.

The Platform Eva to Fort Apache 8-inch oil gathering pipeline is approximately 5 miles long, about 1.2 miles of which is onshore and 3.8 miles offshore. The pipeline normally operates at a pressure of 35-45 psi with a 340 maximum allowable operating pressure at Platform Eva. The

pipeline is protected from over/under pressurization with various safety shutdowns and relief valve. If it is necessary to stop the flow in the pipeline, it can be done from within the control room or at the control panel located at the shipping pipeline. A vault located on the beach allows access to a manual isolation valve.

The pipeline is designed to be operated remotely from a Supervisory Control and Data Acquisition (SCADA) system, which serves as the central control station of the pipeline. It is located at Platform Eva. The primary purpose of the SCADA system is to monitor pipeline pressure, status of shutdown valves, and status of flowrate from the meter.

Platform Eva contains three decks; the production, drill, and subdecks. Each deck is equipped with secondary containment combings.

Spill History
There has been one significant petroleum release Platform Eva and its associated oil pipeline during the past ten years.

- February 2, 2012 — A pinhole leak on a gross separator valve resulted in 10 gallons of oil into the ocean. Spill response was activated and the spill was cleaned up in less than a day. This valve and similar ones were replaced.

12.6 Risk & Hazard Assessment, Northern Facilities

12.6.1 Introduction

The risk of oil spills from northern Company facilities within the jurisdiction of the Office of Spill Prevention and Response (OSPR) involves three distinct facility types: (1) the offshore pipelines from the platforms to shore within the three-mile limit; (2) the onshore pipelines between landfall and the Rincon Onshore Facility (ROSF) and Mandalay Onshore Facility (MOSF); and (3) the onshore facilities.

The analyses presented here are those that identify potential hazards associated with facility operations or plant design that could result in an oil spill. This summary addresses specific mitigation measures recommended by the participants to reduce the risk of a spill, and a schedule for implementation. The use of results of the Risk and Hazard Analysis in the Oil Spill Response planning process is illustrated in Figure 12-3.

Information available and utilized during the conduct of the risk and hazard analyses included P&IDs, plot plans, and equipment descriptions. All personnel participating in the risk and hazard analyses had visited the facilities prior to the conduct of the analyses.

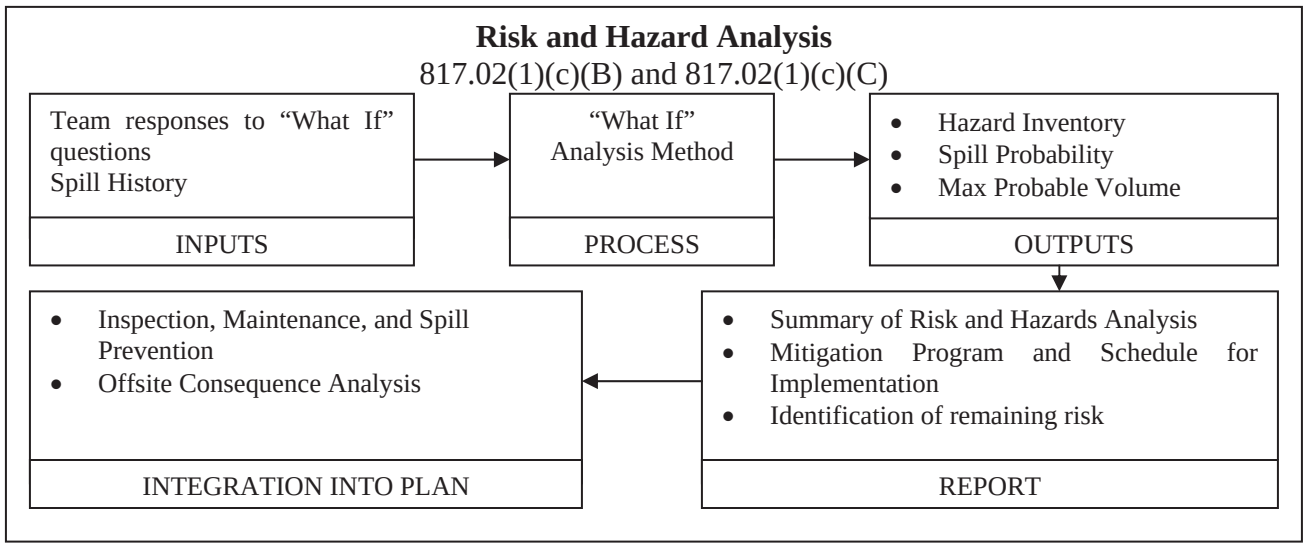

Figure 12-3. Risk and Hazard Analysis Flowchart

12.6.2 Rincon Onshore Facilty

The Process Hazard Analysis (PHA) Study Revalidation/Update for the Rincon Onshore Facility took place between December 8-12, 2008 and January 26-28, 2009 at ROSF. PHA Plus was used for recording the HAZOP Study and What-If/Checklist analysis. The software was developed specifically for this purpose. The primary purpose of the PHA Study was to identify potential process hazards and evaluate the effects of these hazards in a qualitative approach, determine whether the safeguards against these potential hazards appear adequate, and revalidate/update existing PHA Studies.

12.6.2.1 Study Team

The team consisted of:

Personal Identifying information has been removed

12.6.2.2 Methodology

One of the safety objectives is to identify process hazards and to reduce or eliminate the risk that those hazards pose to employees and/or the public. While the equipment was designed with this objective in mind, a systematic approach was taken to further evaluate any possible safety issues and resulting design or operational improvements.

The scope of this What-If/Checklist Analysis included equipment, process streams, and utilities represented by 29 components (or nodes) on the ROSF piping and instrumentation diagrams (P&IDs) (see Node List in Table 12-14). The specific steps of the HAZOP methodology are identified in the Figure 12-4 flow chart.

Table 12-14. Rincon Onshore Facility Nodes

Node #	Drawing #	Node Description
1	101, 102, 105, 108	Receivers, Booster Pumps, Crude Oil Exchangers
2	103, 104, 105, 106, 107, 108	FWKO and Heater Treaters
3	108	LACT Tanks, Pumps and Meters
4	113, 117	Vapor Recovery and Vacuum Compressors
5	110, 111, 112, 113	Sales Gas Compressors
6	118, 119, 120	BLANK NODE
7	103, 104	LTS Unit
8	115, 116	Wash Tanks, WEMCOS, Water Tanks
9	109	Cogen Unit and Mobiltherm System
10	102	Knockout Drum and Stack
11	—	Lower Level Sumps, Tanks
12	—	BLANK NODE
13	—	General Siting Issues
14	—	Additional General Siting Issues
15	122	V-505, V-402 Inlet Filter Separator and Piping
16	122, 123	T-502 overhead and bottoms including V-403 gas side
17	123	V-404 and piping
18	123, 125	V-404 through F-405, E-202 up to T-502. Antifoam Tank, pump, and lines
19	126, 127	T-502, E-203, V-407 and T-502 overheads up to (not including) A-302. Including blanketing gas.
20	126, 127,	A-302, V-407, P-607, 608 and associated piping.
21	125, 126	V-408 bottoms through P-604, P-605, F-410, and E-202 (lean side) up to but not including A-301.
22	124	A-301, F-411, P-601/602and associated piping.
23	T.O.#2	Tail gas through Water Seal Pot to Water Knock-out Pot
24	T.O.#2	Water Knockout Pot to Thermal Oxidizer
25	T.O. #1	Thermal Oxidizer
26	AM-13, 126, 127	AMIPUR skid
27	121	BLANK NODE
28	118	V-6A
29	101	Miscellaneous valving (P&ID 118)
30	102, 105, 108	BLANK NODE
31	—	Lower Level Triplex Pumps
32	—	L-3 through R-4 to 12” Wet Oil Line
33	—	Global

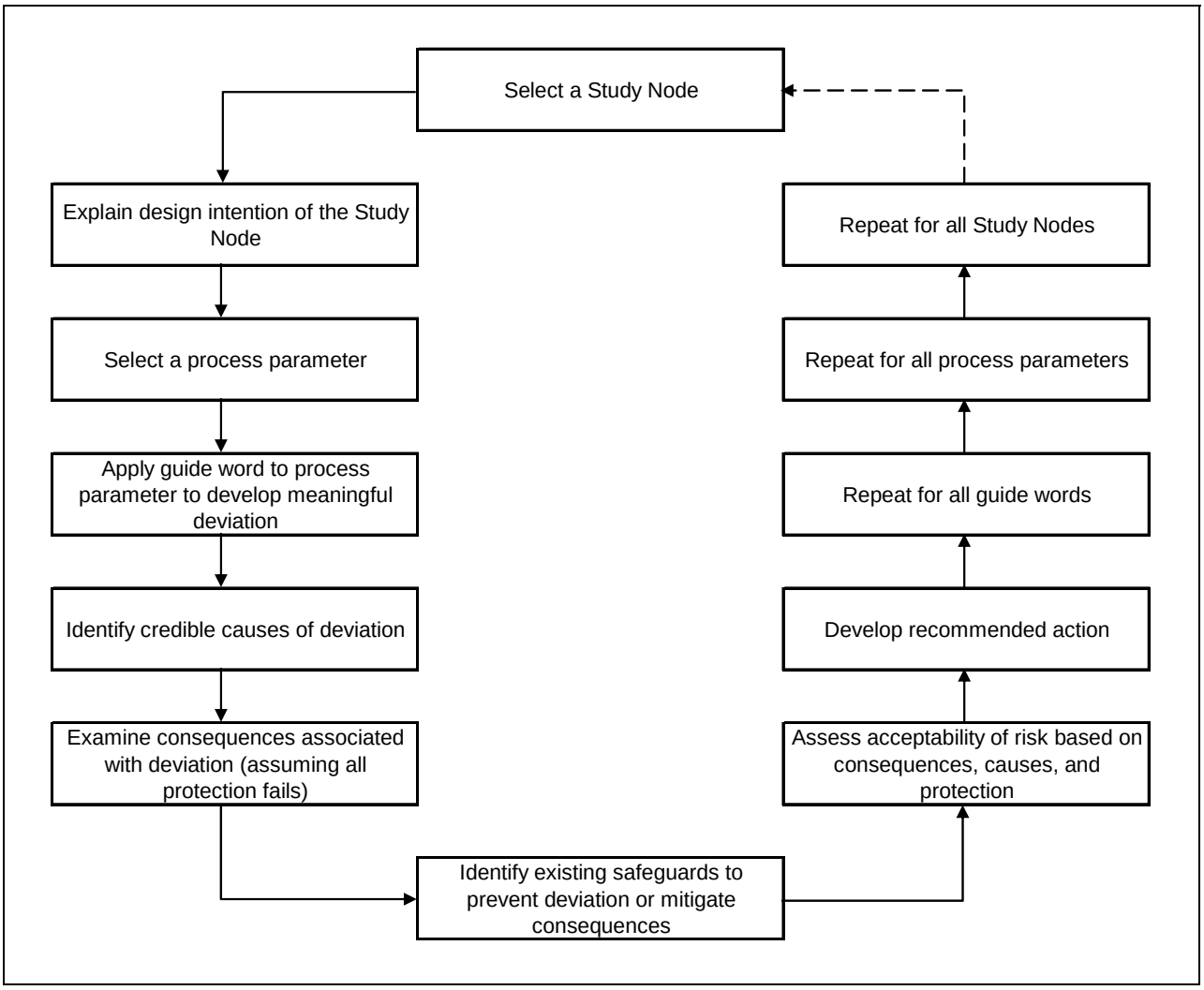

Figure 12-4. Hazop Methodology Flowchart

The systematic approach of a HAZOP Study required that deviations (combinations of guide words and parameters) be uniformly applied to all nodes. As appropriate, standard terms were applied (Table 12-15) to each study node where the HAZOP Study technique was applied:

12.6.2.3 Inventory of Hazards Identified

The risk and hazard analysis for the ROSF identified certain hazards or potentials for spills. A representative list of those potential hazardous conditions is provided below. Cryptically described equipment can be clarified by referring to the Plot Plans and P&IDs.

1. High pressure in Crude Oil Pipeline due to a flow surge from platforms.
2. A leak occurs in the subsea Crude Oil Pipeline from the platforms.
3. Oil Receiver drain inadvertently left open.
4. Flange leak or piping leak due to corrosion.

Table 12-15. ROSF List of Guidewords

Design/ Operations Parameters	Guide Words					
	No/Low	More/High	Misdirected	Reverse	As Well As	Other Than
Flow	No/Low Flow	More Flow	Misdirected Flow	Reverse Flow	As Well as Flow	Other than Flow
Temperature	Lower Temperature	Higher Temperature				
Pressure	Lower Pressure	Higher Pressure				
Level	No/Low Level	Higher Level				
Other/ General	Composition, Maintenance, Start-up/Shutdown, Heat Tracing, Piping Specifications, Phase, Viscosity, Density, Reaction, Corrosion, Erosion/Fatigue, Sampling, Service Loss, Duration, Sequence, Human Factors, Safety/Health, Instrumentation, Agitation, Speed					

5. O-ring on the Crude oil or Gas Receiver closure, leaks due to wear or is damaged when a pig is removed
6. Cathodic protection system fails on the 14" Crude Oil Pipeline that runs up the hill
7. Mud slide or earthquake damages the 14" Crude Oil Pipeline as it goes up the hill
8. Gasket failure at E-1/E-2
9. Crude side closure of block valve on the outlet of either E-1/E-2
10. Crude side inlet block valve to the exchanger inadvertently closed
11. Crude Oil Receiver inlet or bypass valve leaks while receiver is being drained to Receiver Drain Sump.
12. Receiver Sump Pump fails to start because the level float sticks, pump fails, HOA switch is off, solids plugging, etc
13. The sand dump drain lines or vessel sand drain nozzles are eroded because of the solids in the water and high flow rate.
14. FWKO Divert valve malfunctions open
15. High level in the LACT Tank because LACT Unit shuts down or oil is diverted from the FWKO.
16. Corrosion in the Tank bottom because of produced water or external corrosion
17. Operator fails to shut in Oil Recycle Tank when the high level alarm is annunciated.
18. Block valve on the Skim Line on TK-3/5 inadvertently closed.
19. Lower Level Sump or Upper Level Sump has a high high liquid level.
20. Overfill of lubricator reservoir due to human error.

12.6.2.4 Control Measures

The safeguards, in terms of equipment and practices, to mitigate or prevent releases caused by the conditions listed above are as follows:

1. Operator surveillance. P-10 located in TK-8. High alarm in TK-8 and TK-7.

2. Operator surveillance – daily rounds. MI program.
3. Operator surveillance and change out of O-ring. Operator is in close proximity to O-ring. Operating procedure to slowly apply pressure to O-ring in order to verify seal integrity.
4. PSH and PSVs on discharge of pumps offshore. High pressure alarm PAH-P21 downstream of R-1.
5. PSL offshore. Pressure alarm low P21 on suction of Booster Pumps (P-3/4/5/6) and Triplex (PBA-1). Communications between all platforms and Rincon.
6. Test stations are provided to check the potential on the sacrificial anode stations. Rectifier readings logged by in-house personnel. Overall cathodic protection inspected by third party at least once a year.
7. Operator surveillance to shut down oil flow. FSV installed downstream of R-3 will minimize fugitive oil flow.
8. secondary containment and shroud to minimize spraying. Operator surveillance during rounds, switch to standby exchanger. Hot oil side: LAL-V407. FAL-502. Low pressure alarms PAL 401A on suction/discharge.
9. PSV-E11/12/13/21. PCV-V12 will open and divert oil flow to free water knockout. PAHH-L11 on discharge of the Booster Pumps will shut off the pumps. PSH (PT-2) and PAH (PT-1) on discharge of Triplex Pump will shut-down Triplex Pump and alarm.
10. PSV upstream.
11. PPE and operator training.
12. Secondary and tertiary containment. High level alarms in TK-8. Operator surveillance. Auto pump (P-10) start/stop. Operator surveillance through control room via camera.
13. A small leak will be noticeable and provide an opportunity for correcting the situation - this would be spotted during the normal rounds.
14. LAH, PAH, and PSVs on LACT Tanks. P-1A/B/C/D on LACT Tanks. Secondary containment for LACT Tanks.
15. Secondary containment. Operator surveillance. High level alarms on the LACT Tanks. Oil overflows to the adjacent three LACT Tanks.
16. Tanks are internally coated, have a cathodic protection system and each tank has a Bottoms Pump to remove any produced water that accumulates. Mechanical Integrity program.
17. LAHH-TK41 will close SDV-TK41. LAH-TK41. LAH-TK4 float switch closes SDV-TK41.
18. Level indication on both TK-3 & 5. Operator training and procedures.
19. LSHH-P9A1 closes SDV-702 to shut in the sand dump system to prevent the Lower Level Sump from overflowing. High level alarm is annunciated on the Swanson Panel in the Main Control Room.
20. Level float in the lubricator reservoir shuts off the lubricator pump.

While it is felt that the potential for a release occurring and reaching marine waters has been mitigated to the maximum extent technically and economically feasible, a small potential for such an event remains. The remaining risks include a release from the onshore emulsion or sand dump lines that could potentially flow into the adjacent concrete-lined creek, a small release of condensate from the offshore gas line, and a worst case release of up to 551 bbl of oil (580 bbl of fluid) from the offshore emulsion line.

12.6.2.5 Vulnerability Analysis

A vulnerability analysis addressing the potential effects of a spill from the Rincon Onshore Facility was conducted in 1994. A subsequent 2011 evaluation of those findings concluded that the potential vulnerabilities remain the same. Most of the vulnerabilities are associated with an unlikely scenario in which oil would enter the storm drain system and while the lower level manual valve allowed the discharge into the concrete-lined section of Los Sauces Creek, along the SE side of the lower level of ROSF, which is upstream of a short natural section of the creek (see Table 12-16), instead of being discharged into the sump. Avoidance of this circumstance has been addressed in the Control Measures discussed in Section 12.6.2.4 of this Spill Response Plan, but if it occurred, the potentially vulnerable portions of the environment are quite close and would be oiled quickly.

As noted in Table 12-16, the list of potentially impacted environments includes residential areas, riparian habitat and its inhabitants, recreational areas, and transportation routes. Each of these areas are quite small, nevertheless, continued diligence will be employed to prevent spills that could affect them.

Table 12-16. ROSF Vulnerability Analysis

Item	Vulnerability		Notes*
	None	Potentially	
1. Water intakes (Drinking, cooling, or other)	X		None present.
2. Schools	X		None present.
3. Medical facilities	X		None present.
4. Residential areas		X	A small beach community "Sea Cliff" is located 0.6 miles downcoast from the discharge of Los Sauces Creek. A spill could oil the rip-rap fronting this 0.5 mile long community.
5. Businesses	X		None present.
6. Wetlands or other sensitive environments		X	Approx. 1/3 acre of riparian habitat in 200-ft stretch of creek between RR tracks and US 101.
7. Fish and wildlife		X	No fish. A variety of birds, mammals, etc. in area near creek.
8. Lakes and streams		X	Los Sauces Creek. Lower reaches have been channelized and concrete-lined except for a 200-ft stretch that is natural.
9. Endangered flora and fauna	X		None present.
10. Recreational areas		X	A surfing beach is located 3.4 miles upcoast from the discharge of Los Sauces Creek.
11. Transportation routes (Air, land, and water)		X	Creek runs under US 101 and RR tracks. An arial, high-pressure pipeline leak from Lower Level could spray to Calif. Hwy 1 and RR tracks.
12. Utilities	X		None present.
13. Other areas of economic importance (beaches, marinas; aquatic environ-ments, and unique habitats)	X		Creek discharges through concrete culverts onto a rip-rapped coastline with no marshes or coastal wetlands.

* Ref.: ACP–Site 4-705C (and on-site observations)

12.6.3 Mandalay Onshore Facility

The Risk and Hazard Analysis of MOSF was conducted February 14-15, 1994 by Unocal, as the operator at that time. For analysis purposes, the MOSF was divided into 17 components, or nodes. The analyses examined each node to determine, what could cause a release, how much oil could be released, and could the release reach tidal waters.

12.6.3.1 Study Teams

The team consisted of:

Personal identifying information has been removed

12.6.3.2 Methodology

The "checklist" analysis technique as described in the American Institute of Chemical Engineers' Guidelines for Hazard Evaluation Procedures was utilized for the conduct of the risk and hazard analysis, and is appropriate for this type of facility. Facility equipment was divided into five categories (pipelines, pig receivers, pressure vessels, tanks, and containment/sump systems) and a unique Hazard Analysis Checklist was developed for each category. A summary of the questions included in the checklists is provided in Table 12-17. The checklist form (worksheet) provided for three responses to each question: yes, no, or not applicable. The worksheet also contained boxes for each question to record the following information: potential hazard, safeguards in place to prevent the potential hazard from occurring, any remaining hazard, and remarks. A copy of the first page of the worksheet for pipelines is provided as Figure 12-5. As stated above, a total of 24 and 17 nodes, respectively, were analyzed. The nodes, as categorized for analysis purposes, are listed in Table 12-18. (See Tables 12-11 & -12 for tank descriptions.)

The "What If" analysis technique was chosen to identify risk and hazards, potential consequences in the event of an oil spill, and necessary prevention measures. The "What If" analysis method was selected for its creative, experience-based approach and for its suitability in focusing on specific types of hazards. Facilities were broken into manageable segments where piping, instrumentation, equipment, and structures had similar operating functions, consequences of oil releases, and safeguards to prevent releases. Brainstorming sessions were conducted for each section to identify all possible causes of oil releases from the facility focusing on discharges of oil that could potentially reach marine waters. Team members were encouraged to consider all potential causes of spills for discussion during the analysis. Subsequent to each brainstorming session, the Team evaluated the results of the session and completed the "What If" Review spreadsheets with the following results.

Table 12-17. "Checklist" Questions Used in Risk and Hazard Analysis

A.	GENERAL QUESTIONS	
	1.	Can node release enter tidal waters?
	2.	Does node have adequate containment?
B.	DESIGN QUESTIONS	
	3.	Is mechanical design (internal and thermal stresses) appropriate?
	4.	Is node adequately protected from corrosion?
	5.	Is node constructed of proper material?
	6.	Does node have a drain?
	7.	Where does drain discharge to?
	8.	Are drain discharge facilities adequate?
	9.	Is node properly protected against overpressure?
	10.	Can node be over pressurized by pumps?
	11.	Does node have a pressure safety valve (PSV)?
	12.	Where does PSV discharge to?
	13.	Are PSV discharge facilities adequate?
	14.	Is node protected from mechanical damage?
	15.	Are valves in node appropriately designed?
	16.	Does node have leak detection?
	17.	Is node properly designed for earthquakes?
	18.	Is node adequately protected from vandalism?
	19.	Can node handle increase in temperature of product?
	20.	Can node handle decrease in temperature of product?
	21.	Can node handle increase in flow of product?
C.	OPERATIONS QUESTIONS	
	22.	What happens if a valve is inadvertently left open?
	23.	What happens if a valve is inadvertently closed?
	24.	Is there adequate surveillance of the node?
	25.	Do personnel understand operation of the node?
	26.	Is there adequate protection from sending wrong product through the node?
	27.	Is there adequate protection from pumping reverse direction through the node?
D.	EXTERNAL IMPACT QUESTIONS	
	28.	Is node properly designed for weather conditions?
	29.	What happens if node leaks/ruptures?
	30.	What happens if there is a power failure?
	31.	What happens if there is a hydraulics/air failure?
	32.	Is fire protection adequate?
	33.	Is node adequately protected from loss of communication/instrumentation?
	34.	What if pump fails?

Pipeline:_____ Date:_____
Diameter:_____ Length:_____
*Normal Operating Pressure:*_____ *Maximum Operating Pressure:*_____ *Oil Cut:*_____

Question	Answer (Y, N or N/A)	Potential Hazard	Safeguards	Remaining Hazards	Recommendations	Remarks
A. GENERAL QUESTIONS						
1. Can pipeline release enter tidal waters?						
2. Does pipe have adequate containment?						
B. DESIGN QUESTIONS						
3. Is mechanical design (internal and thermal stresses) appropriate?						
4. Is pipe adequately protected from corrosion?						

Figure 12-5. Pipeline Worksheet – Mandalay (Example)

Table 12-18. Mandalay Onshore Facility Nodes

Node #	Node Description
1	Gina 10-inch emulsion line
2	Gilda 12-inch emulsion line
3	Gina 6-inch gas line
4	Gilda 10-inch gas line
5	6-inch treated water line to Gilda
6	Emulsion line pig receivers (R-1 and R-2)
7	Gas line pig receivers
8	Oil processing vessels (heat exchangers, separator, free water knockout, heater treaters)
9	Gas processing system
10	Water system tanks (T-1, T-2, T-4, T-8, and C-1)
11	Oil storage tanks (T-3, T-5, T-6, and T-7)
12	T-7 and T-8 tanks
13	T-5 and T-6 tanks
14	T-1 through T-4 tanks
15	Heater treaters
16	Main sump
17	Other sump collection systems (2)

12.6.3.3 Inventory of Hazards Identified

The risk and hazard analysis determined that a spill within the MOSF could not get into tidal waters. All tanks and vessels are located inside adequate containment areas. In addition, there is a block wall on the seaward side of the facility and there is a 20-foot high sand berm separating the facility from the ocean. There is a canal several hundred yards from the facility, however, the drainage patterns from the MOSF are away from the canal. Also, there are no storm drains or other drainage systems in the area that a spill could reach.

A leak or rupture in one of the incoming emulsion or gas lines could result in a release that could get in marine waters if the release took place in the ocean or on the shore prior to surfacing in the Mandalay facility on the inland side of the sand berm. The risk and hazard analysis determined that a release from the emulsion lines could be significant. However, a release from the gas lines would be at most several barrels of condensate which would evaporate rapidly and not present a spill hazard. One potential hazard, as described below, was identified with respect to the operation of the emulsion lines.

During the risk and hazard analysis, the performance of the pipeline leak detection system was questioned. The system operates by comparing the volume of liquids leaving Platforms Gina and Gilda with that arriving at MOSF. An action plan that will remove any doubts regarding the performance was developed. The mitigation plan is described below.

As stated previously, a release within the Mandalay facility cannot reach marine waters. However, a leak or rupture in the offshore portion and beach-crossing portions of the emulsion

and gas pipelines could result in a release that enters marine waters of up to 481 barrels of emulsion from the 12-inch emulsion line to shore.

12.6.3.4 Mitigation Plan

The following describes the actions taken at MOSF to address the measures recommended to mitigate the hazards identified and described in the previous section: Evaluate the existing leak detection system to verify and document that the system is operating as designed. Determine and implement system setpoints which will alarm at the smallest possible flow discrepancy without resulting in excess alarms. Develop and implement standard operating procedures for responding to leak detection alarms. Add leak detection system settings to the Tester's monthly list of safety systems to check and document. With safety and detection systems in place, a spill may still occur. Therefore, response planning is based on worst case spills. The worst case spills from emulsion lines to shore for the MOSF, determined to be 241 and 80 barrels of oil (482 and 200 bbl of total fluid) from Platforms Gilda and Gina.

12.7 Risk & Hazard Assessment, Southern Facilities

12.7.1 Introduction

This section contains a summary of the results of a Risk and Hazard Analysis conducted on the Company's Platforms Eva and Esther and their respective offshore and onshore pipelines. The analysis was required by OSPR Regulation 817.02(c)(1)(B) and (C) and was originally conducted by Unocal Corporation, the former owner of the platforms and pipeline systems. The summary of Unocal's analysis is included in this section because the platforms and subsea portions of the pipeline systems are covered in the scope of this OSRP, and spills originating from the platforms or subsea pipelines would be responded to by Company personnel. These "what-if" hazard analysis sessions were conducted from February 1, 1994 through February 7, 1994 in Unocal's Offices in Santa Fe Springs.

The study applied a formal, systematic and critical examination of the facilities to assess the potential for oil spills to the environment. Equipment malfunctions, human errors, and associated consequences for the entire system were identified. The scope of the risk and hazard analysis included the subsea oil pipeline from Platform Esther to shore, and the pipeline from Platform Eva to the Huntington Beach Fort Apache Facility. The summary addresses only those platforms and sections of the subsea pipelines in state waters.

The purpose of the analysis is to identify potential hazards associated with facility operations or plant design, which could result in an oil spill. This summary addresses specific mitigation measures recommended by the participants to reduce the risk of a spill, and a schedule for implementation. The use of results of the Risk and Hazard Analysis in the Oil Spill Response planning process is illustrated in Figure 12-3.

12.7.1.1 Study Team

ACTA Inc. conducted a Hazard and Operability Study (HAZOP) for the former owner, Unocal Corporation, on the platforms and pipelines described above. Team members for each platform hazard analysis are listed below:

Personal Identifying information has been removed

12.7.1.2 Methodology

The "What If" analysis technique was chosen to identify risk and hazards, potential consequences in the event of an oil spill, and necessary prevention measures. The "What If" analysis method was selected for its creative, experience-based approach and for its suitability for focusing on specific types of hazards. Facilities were broken into manageable sections where piping, instrumentation, equipment, and structures had similar operating functions, consequences of oil releases, and safeguards to prevent releases.

For the particular cause of an oil spill under consideration, the maximum possible volume release, spill duration (including detection time, time to shut down facilities, and additional drain down time), and maximum possible volume released were based on the assumption that all safeguards to prevent or mitigate spills, excluding leak detection, were compromised. Leak detection was assumed to be in place at all times given that, according to Company Operating Procedures, the facilities are not to be operated when leak detection is inactive unless comparable arrangements are made, e.g., manned locations.

Brainstorming sessions were conducted for each section to identify all possible causes of oil releases from the facility focusing on discharges of oil that could potentially reach marine waters. Team members were encouraged to consider all potential causes of spills for discussion during the analysis. A summary of the questions included in the checklists is provided in Table 12-14. Subsequent to each brainstorming session, the Team evaluated the results of the session and completed the "What If" Review spreadsheets with the following results.

12.7.2 Inventory of Hazards Identified

Tables 12-19 and 12-20 provide the results of the hazard analyses for Platform Esther and Eva, respectively. For results on the reasonable worst case spill volumes for both platforms and their respective pipelines, see Section 11, Worst Case Discharge Analysis.

12.7.2.1 Platform Esther

The HAZOP risk analysis identified inadvertently leaving the shipping tank drain valves open to present the greatest risk of oil spill to the ocean. Oil would be released on the production deck where it would collect and drain to the wastewater or production sump tank. This is highly unlikely since the high level alarms and shutdowns on the sump tank and low level alarms on the shipping tank would shut in the platform before a spill could occur. Instrumentation and controls checks are completed every two hours. In addition, car seals will be used on the shipping tank drain valves to minimize the potential for inadvertently opening these valves in the future.

After the facility upgrade project is installed, the shipping tank will no longer be used, and oil will be sent directly to the pipeline from the new separators using process pressure.

Table 12-19. Platform Esther Oil Spill Hazards

NO.	SYSTEM	HAZARD/CONSEQUENCE	ESTIMATED FREQUENCY Per Year
1	Production Sump Tank	Tank Rupture. Oil and water to sump deck and some to ocean	1×10^{-5}
2	Drilling Sump Tank	Tank Rupture. Oil and water to sump deck and some to ocean	1×10^{-5}
3	Production Sump Tank Pump	Pump Casing Rupture. Oil directly to ocean	1×10^{-5}
4	Drilling Sump Tank Pump	Pump Casing Rupture. Oil directly to ocean	1×10^{-5}
5	Relief Gas Scrubber	High level in scrubber and liquids through vent stack to ocean	1×10^{-5}
6	Shipping Tank	Vessel drain left open and 100 bbl liquids to production sump tank and overflow to ocean	1×10^{-4}
7	Oil Pig Launcher	Pig launch procedures not followed. Liquids to lower deck and some to ocean	1×10^{-4}
8	Oil Pig Launcher	Launcher drain left open. Liquids to sump tank. Potential overflow to sump deck and some liquids to ocean	1×10^{-4}
9	Oil Pig Launcher	Leakage of liquids from door seal with potentially some to ocean	1×10^{-5}

12.7.2.2 Platform Esther Onshore/Offshore Pipeline

The HAZOP team identified three possible causes of oil spills to the water from the onshore and offshore pipeline. Spills resulting from earthquakes, corrosion and impact hazards were considered. The spill quantities from an earthquake or from impact would be roughly the same and would be greater than the quantities from a corrosion leak. The spill quantities would be determined based on the assumption that, under the conditions prevailing immediately after an earthquake, nothing would be done to cap a release.

The offshore spill hazards/consequences are based on failure of the "J Tube" at the platform. It is assumed that the seismic event will result in shutting in the wells and isolation of the platform. The release will slow to a trickle when the pipeline pressure equals the water static head pressure. If nothing were done to cap the release during many weeks, eventually seawater would displace oil in the pipeline. All of the oil remaining in the line would trickle out. Appropriate action would be taken to stop the trickle.

The onshore hazards/consequences are based on a line failure caused by a backhoe or weld seam failure. The maximum quantity would be released in a matter of seconds and it is assumed that it would be released from the line at the lowest onshore elevation.

Table 12-20. Platform Eva Oil Spill Hazards

NO.	SYSTEM	HAZARD/CONSEQUENCE	ESTIMATED FREQUENCY Per Year
1	Gross Oil Production Separator	Tank Rupture. Overpressurize and potential rupture. Liquids to drain, waste water tank and then shipping tank. Possible some to ocean.	1×10^{-5}
2	Water Heater Treater	Overpressurize and potential rupture. Liquids to drain, waste water tank and then shipping tank. Possible some to ocean.	1×10^{-5}
3	Water Heater Treater	Gas and liquids from Heater Treater to Vent Scrubber. Potential spill to ocean through scrubber vent stack.	5×10^{-5}
4	Water Heater Treater	Rupture of Heater Treater. Some liquids may splash to ocean.	1×10^{-5}
5	Shipping Tank	Vessel drain left open. Liquids to Waste Water Tank and potential spill to ocean.	1×10^{-4}
6	Power Water Knockout Vessel	Overpressurize and potential rupture. Liquids to deck and shipping tank via waste water tank. Some liquids may splash to ocean.	1×10^{-5}
7	Power Water Knockout Vessel	Stuck open PSV on Knockout Vessel resulting in high-level discharge from Well Clean Tank to Vent Scrubber. Potential spill to ocean through scrubber Vent Stack.	5×10^{-5}
8	Shipping Pump	Pump failure or line blockage, oil not shipped and high level in Shipping Tank and potential overflow of Waste Water Tank. Potential spill of liquids to the ocean.	5×10^{-5}
9	Oil Pig Launcher	Pig launch procedures not followed. Liquids to deck and some to ocean.	1×10^{-4}
10	Oil Pig Launcher	Launcher drain left open. Liquids to waste water deck and some to ocean.	1×10^{-4}
11	Power Water Surge Tank	Overpressure and potential rupture. Liquids to drain, waste water tank and then shipping tank. Possibly some splash to ocean.	1×10^{-5}
12	Well Clean Tank and Vent Scrubber	Drain left open. Liquids to waste water tank and overflow to ocean.	1×10^{-4}
13	Storm Drain Pumps	Pump failure and high level and overflow of Waste Water Tank. Some liquids to ocean.	5×10^{-5}
14	Waste Water Tank	Tank rupture and liquids to subdeck. Some spill to the ocean.	1×10^{-5}
15	Waste Oil Sump	Sump rupture and liquids directly to ocean.	1×10^{-5}
16	Power Water Pump	Casing rupture and oil water to ocean.	1×10^{-6}
17	Power Water Pump	Impact by crane load causing pump line break. Oil water may spray to ocean.	5×10^{-5}

12.7.2.3 Platform Eva

The HAZOP identified inadvertently leaving the shipping tank or well clean tank drain valves open to present the greatest risk of oil spill to the ocean. Oil spilled on the production deck is collected and drained to the wastewater or production sump tank. This is highly unlikely since the high level alarms and shutdowns on the sump tank and low level alarms on the shipping tank would shut in the platform before a spill could occur. Instrumentation and controls checks are completed every two hours.

12.7.2.4 Platform Eva Onshore/Offshore Pipeline

The HAZOP identified three possible causes of oil spills to the water from the onshore and offshore pipeline. Spills resulting from earthquakes, corrosion, and impact hazards were considered. The spill quantities from an earthquake or from impact would be roughly the same and would be greater than the quantities estimated for a corrosion leak. The spill quantities would be determined based on the assumption that, under the conditions prevailing immediately after an earthquake, nothing would be done to cap a release.

The offshore spill hazards/consequences are based on failure of the "J Tube" at the platform. It is assumed that the seismic event will result in shutting in the wells and isolation of the platform. The release will slow to a trickle when the pipeline pressure equals the water static head pressure. If nothing were done to cap the release during many weeks, eventually seawater would displace oil in the pipeline. All of the oil remaining in the line would trickle out. Appropriate action would be taken to stop the trickle.

The onshore hazards/consequences are based on a line failure caused by a backhoe or weld seam failure. The maximum quantity would be released in a matter of seconds and it is assumed that it would be released from the line at the lowest onshore elevation.

12.7.3 Mitigation Plan

Additional considerations developed by the Team were entered into the "What If" Review spreadsheet. The Team considered recommendations including specific changes to the facilities, additional training for personnel, and further study of the cause of a potential oil release when appropriate. In addition to the text below, please refer to Section 5.2, Discharge Detection and Control (in Vol. 1 of this Spill Response Plan) for control measures that are used to mitigate or eliminate the potential for spills.

12.7.3.1 Primary Containment

Primary containment for oil on Platform Esther, Platform Eva, and Fort Apache is provided by tanks, vessels, pipelines, and other operating equipment onboard the platform or at the facility. All primary containment structures have drain valves, which remain closed during normal operations.

Fail-safe engineering features include the use of pressure and vacuum relief devices to prevent structural damage or failure. Hydrocarbon storage tanks are equipped with level controls and

alarms to alert the operator and prevent overfill situations. Operations exceeding set point levels trigger an audible alarm in the control room, which is connected to a lighted alarm panel. After a predetermined period of time, an unanswered alarm triggers the emergency shutdown valve at the site and results in the shutdown of production at the producing platform.

12.7.3.2 Secondary Containment

Oil drainage and collection equipment for both platforms is used to catch minor oil leakage around pumps, glands, valves, flanges, expansion joints, hoses, drain lines, separators, treaters, and tanks. Drains direct all oil to a central slops tank. This wastewater is then piped ashore in the production line. For Platform Esther, when the upgraded facilities are operational, the wastewater will be cleaned and injected.

More specifically, platform deck drain gutters drain by interconnecting pipe lines to a slops tank equipped with primary and secondary pumps, level controls and alarms. The tank is protected by overflow connection to a secondary tank and a containment basin. For Platform Eva, pumps discharge to the production shipping system for discharge to the onshore site.

For Platform Esther, the slops tank and sub-deck area are inspected twice during each 8-hour shift (24-hour operation). Pumps and safety devices are monitored in the control room. Safety device functions are checked monthly with a record made of the inspection.

All levels of the platform have secondary containment structures or diversionary equipment to prevent oil from reaching navigable waters or environmentally sensitive areas.

All equipment having the potential to release oil has secondary containment structures capable of holding a volume equal to or greater than the single largest piece of equipment.

All vessels in the production area are provided with secondary containment via the deck coaming plates. These plates provide a capacity greater than the maximum oil storage capacity of all cumulative vessels on this deck on both platforms. The coaming plates are 6” high around the perimeter of the other decks of both platforms. The plates are integral with the platform decks and are made of standard ASTM A-36 carbon steel with 3-coat paints.

Containment for the majority of the tanks at Fort Apache is provided by locating the tanks below grade and surrounding them by a concrete block wall. This containment system is designed to contain greater than 110% of the capacity of the largest tank within the containment cell.

The balance of the facility is designed such that the containment cells are utilized through site grading. The secondary containment cell around Vessels V1, V2, V3, V4, and V5 is equipped with a containment area to which any accumulated fluids or spilled fluids flow. Fluids in the containment area are pumped to Freewater Knockout V5 where oil and water are separated. The separated oil is collected and sent to Heater Treaters V2, V3 & V4. The wastewater is then sent to Tanks T1 & T2 and ultimately discharged to the County Sanitation Districts of Orange County.

The secondary containment cell around Tank T4 is connected to the containment cell for Vessels V1 through V5 via a below grade conduit. Accumulated or spilled fluids flow by gravity to the containment area pump and are pumped to Freewater Knockout V-5.

The site grading provides for gravity flow of all fluids to drainage conduits. Fluid in the drainage conduits flows to the suction of the containment area pump where it is pumped to Freewater Knockout V5. Surface run-off is treated and discharged to the County Sanitation District of Orange County.

12.7.3.3 Transfer and Storage Operations

A. Shipping is reestablished after periods of inspection and maintenance or inactivity using the following general procedures:
   1. The platform operator confirms tank levels prior to start-up.
   2. The platform operator confirms the position of all valves related to the shipping process including pipeline, tank and pump valves
   3. The platform operator verifies the level in the shipping tank.
   4. The platform operator confirms that the onshore facility is ready to receive production and verifies valve positions at the onshore facility.
   5. The platform operator checks pipeline pressure and recording chart.
   6. The platform operator starts the shipping pump.
   7. The platform operator checks pipeline pressure.
   8. The platform operator confirms movement of fluid by checking the shipping line flow meter.
   9. The platform operator conducts a visual inspection of the system for leaks.

B. Upon an automatic system shutdown triggered by low pipeline pressure, the following procedures are typically used:
   1. The platform operator checks the pressure chart readout.
   2. The platform operator checks the low-pressure sensor for proper operation.
   3. Status of operations at the onshore facility are checked.
   4. The crewboat is requested to conduct a visual inspection of the pipeline course for leaks, if necessary.
   5. Upon return to normal operations, the platform operator will follow general shipping procedures as described above.

C. Upon an automatic shutdown triggered by high pressure, the following general procedures are typically used:
   1. The platform operator checks the pressure chart readout.
   2. The platform operator checks the shipping lineup for correct valve position and operation.
   3. The platform operator checks the high-pressure sensor for proper operation.
   4. The operator at the onshore facility is contacted to check onshore facility receiving system lineup.

5. Upon return to normal operations, the platform operator will follow general shipping procedures as described above.

During normal operations, water and oil are transferred from the separators to the shipping tank. Based on the level in the tank, the shipping pumps automatically activate to pump the mixture into the pipeline. The shipping and receiving tanks are equipped with high and low level alarms and shutdowns. The alarms are tied into the platform programmable logic controller (PLC). Operator control or involvement is not necessary unless there is a malfunction.

For Platform Esther, the production in the pipeline is pumped approximately 1.75 miles to shore to the Chevron pipeline. Chevron assumes custody of the production beyond this point. However, the Company maintains pipeline operations between the platform and the vault.

For Platform Eva, the production in the pipeline is pumped approximately 5 miles to shore to the Huntington Beach Fort Apache Processing Facility. The production is metered by a custody transfer meter (LACT) at the site.

Tank truck loading and unloading do not occur at the facility.

12.8 Remaining Risks

The risk and hazard analyses addressed the potential for spills from nodes at facilities. The nodes were separated into the following six categories for analysis purposes: pipelines, pig receivers/launchers, pressure vessels, tanks, containment/sump systems, and pump/compressors. General risks from these and from platforms are discussed below.

12.8.1 Platforms

The probability that an oil spill will occur during development, drilling, or production in California waters is difficult to estimate due to the very low historical accident rates and the fact that existing data bases for U.S. waters do not typically discriminate between exploration and production operations. Since 1963, over 500 wells of both types have been drilled on the California OCS, with the 1969 Santa Barbara oil spill being the only significant accident. Over 3,000 wells have been drilled in state waters with no significant accidents.

Estimation of possible spill size is equally difficult to determine statistically. The potential size of a major incident is indeterminate. The most likely spills will be associated with platform resupply and routine operations, and are expected to be between a few barrels and a few tens of barrels. Using a basic statistical analysis, Beyer and Painter (1977) found that USGS data for OCS petroleum development operations during 1966-1975 indicated an average yearly spill volume from all causes (pipeline accidents, blowouts, fires, etc.) of about 72 barrels per million barrels of oil produced.

12.8.1.1 Platform Spill Occurrence Rates

The probability of an oil spill occurrence from OCS platforms has been determined using procedures developed by the Minerals Management Service (MMS) (Smith, et al., 1982). MMS used three assumptions in its procedures for calculating future oil spill occurrence probability for a given area:

- Realistic estimates of future oil spill frequencies can be calculated from past outer continental shelf (OCS) drilling and transporting experience.
- Oil spills occur as a result of random, uncorrelated factors (a Poisson process); the number of actual spills is small compared to the number that could possibly occur.
- Spill rates are dependent on the volume of oil produced or transported.

Basic calculations consist of two parts: determination of the historical spill frequency and the probability of oil spill occurrence. Historical spill rates are used to compute future spill frequencies.

The spill occurrence rate, or spill frequency, is generally computed by dividing the number of spills greater than a given magnitude by the total number of barrels produced or transported for the designated time period. Oil spill occurrence rates have been recently adjusted using trend analysis to reflect an updated database and recent experience. Trend analysis shows that spill frequency has significantly decreased in recent years.

Revision of spill rate is based on work done by the MMS (1987). There was an improvement in the safety record over the years resulting in decreased spill frequency. For example, Table 12-21 and Figure 12-6 show the computed platform spill frequency, in spills/volume produced, from 1975 to 1987.

12.8.1.2 Historical Platform Spill Rates

The historical spill rate from U.S. OCS activity was used to estimate the expected number of platform spills. The updated platform spill rates used are 0.68 and 0.22 spills per billion barrels (bbl) of oil produced for spills greater than 1,000 and 10,000 barrels, respectively. Spill rates are based on historical records, updated, and where appropriate, subjected to trend analysis to adjust for recent experience. Using U.S. oil production and accident data from the period 1964-1980, past studies indicated a statistically significant decrease in the U.S. platform spill rate since 1974.

Table 12-21. Occurrence Rates for Accidental Oil Spills

Mode	Spills per billion bbl	
	≥1,000 bbl	≥10,000 bbl
Platforms	0.68	0.22
Pipelines	0.85	0.40

Reference: MMS, Revised Oil Spill Occurrence Rates for the U.S. Outer Continental Shelf (1987)

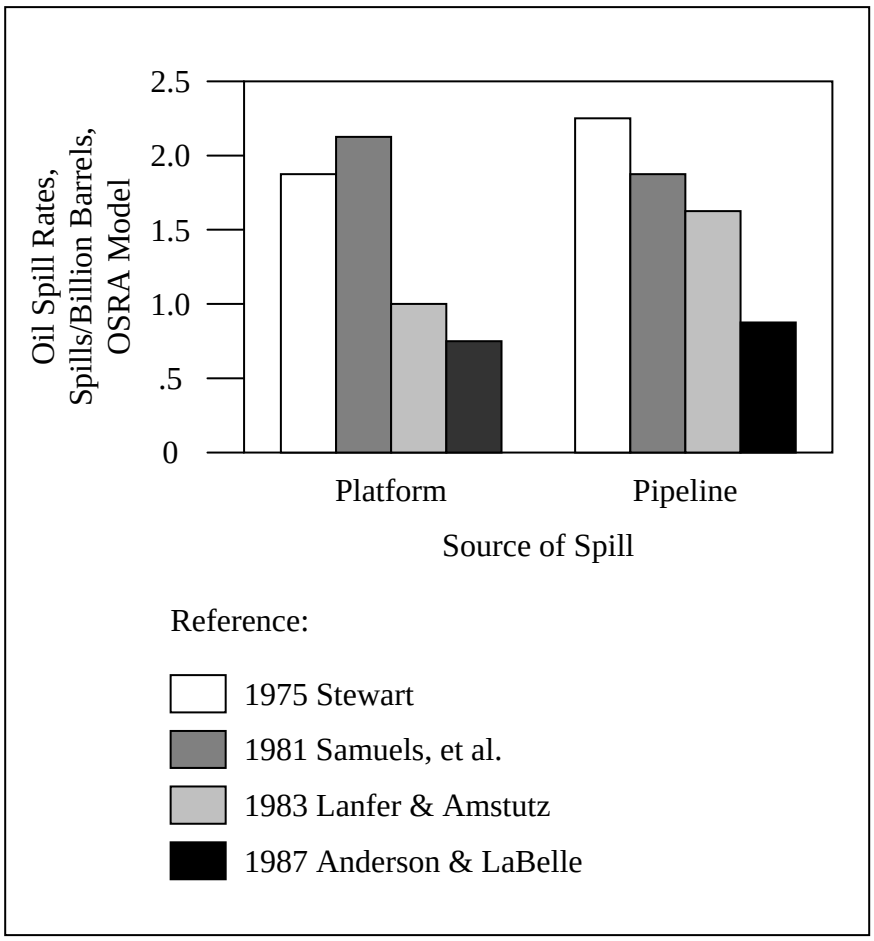

Figure 12-6. Platform Spill Occurrence Rates

12.8.2 Pipeline

Enough pipeline spill history exists to determine probabilities and expected volumes of spill from inter-platform or platform-to-shore pipelines.

Data Sources. One source of pipeline risk information used in this study was an oil spill risk analysis for the federal Northern Tier Pipeline Environmental Statement (OIW 1978). In that report, pipeline mileage was chosen as the exposure variable for pipeline spill rates because of its common usage in various reporting schemes. Spill data were taken from the U.S. Minerals Management Service Outer Continental Shelf (OCS) Events files, for the years 1971-1977 in the Gulf of Mexico. The 1993 California State Fire Marshal Report titled "Hazardous Liquid Pipeline Risk Assessment" provided historical data and statistics on state pipelines.

Predicted Pipeline Spill Frequency. The probability of a pipeline rupture is extremely low. Recent EIR/S addressing pipelines estimate that the probability of pipeline rupture is about $1x10^{-4}$ per mile per year. The federal study found that in each year there were between 5 and 13

pipeline spills exceeding 2.4 barrels along 9,990 miles of pipeline. Spills of less than 2.4 barrels (100 U.S. gallons) were excluded due to the unreliability in the reporting of their occurrence and volume. OCS oil spills (excluding riser pipe spills) greater than 2.4 barrels were evaluated for determining offshore spill rates. The state study found that the overall probability of a pipeline release is 7.1 incidents per 1,000 mile-years. The report also acknowledges that small spills are more likely than large spills. The following summarizes the data on historical spill sizes:

- 27% of the incidents resulted in spill volumes of one barrel or less.
- The median spill volume was five barrels.
- 39% of the incidents resulted in spill volumes of more than 10 barrels.
- 33% of the incidents resulted in spill volumes of more than 25 barrels.
- 18% of the incidents resulted in spill volumes of more than 100 barrels.
- 10% of the incidents resulted in spill volumes of more than 650 barrels.
- 5% of the incidents resulted in spill volumes of more than 1,750 barrels.

12.8.3 Pig Receivers/Launchers

Spills from pig receivers/launchers are infrequent and when they do occur usually result in small releases that are captured by local containment. EIR/S for oil and gas projects in southern California have estimated that the probability of a pig receiver/launcher leak is once in 1,000 operations. The probability of an extended release (greater than five minutes in duration) is estimated to be less than once in ten million operations.

12.8.4 Pressure Vessels

All of the pressure vessels located at Company onshore facilities have secondary containment. Thus, any spill, even one from a total vessel failure, would be contained within the secondary containment system. The pressure vessels are all ASME certified pressure vessels which have extremely low probability of failure. Smaller leaks, such as those that could occur from flanges, are more likely than vessel failures, but are unlikely.

12.8.5 Tanks

All of the tanks at each facility containing oil are located inside secondary containment systems. The largest tank that contains oil has the capacity of 3,000 barrels. Tank failures are very unlikely, but even if one occurred, the contents would be contained within the secondary containment system. As with pressure vessels, small leaks from flanges or connection points are more likely.

12.8.6 Pump/Compressors

Small leaks due to seal failures are possible from pumps and compressors. These types of leaks are detected quickly and only result in small amounts of oil being released. It is possible, but unlikely, that a pump casing could crack, resulting in a slightly larger spill, before, the pump shuts down. The probability of a major spill from a pump has been estimated to be less than once in 75,000 years.

12.9 Spill Prevention & Detection–Transfer and Storage Operations

12.9.1 Rincon and Mandalay Onshore Facilities

The transfer of product from the incoming pipelines to the ROSF and MOSF is conducted on a 24-hour basis. For the ROSF, product is shipped out when a preset level is reached in storage transfer tanks. The incoming and outgoing transfer equipment is checked multiple times each 24-hour period. Inspection rounds are made every hour. For the MOSF, product is transferred to sales pipelines approximately three times per day at a rate of 10 barrels per minute for a three-hour period each time. The incoming and outgoing transfer equipment is checked multiple times each 24-hour period. These inspections are conducted to ensure valve positions are correct, levels are within a normal range, and there is no sign of leakage.

Because each facility is hard-piped, there is no hookup procedure for transfers of oil to or from the facilities. The transfer equipment for incoming and outgoing crude oil is started or stopped in accordance with monitored pipeline pressure. For the ROSF, the startup of equipment for outgoing oil is automated and transfer occurs approximately four times per day. Shutdown occurs when tank levels reach a preset level or quality and accountability are compromised. There are startup procedures for both facilities, however, that are followed after a shutdown, during a turnaround period or after an emergency shutdown. A Pre-Startup Review Checklist is followed that includes seven major items:

- Management of Change
- Quality Assurance Inspections
- Operating Procedures
- Maintenance Procedures
- Emergency Procedures
- Employee Training
- Process Safety Information (PSI)

If an emergency shutdown is required, operators can accomplish this task in approximately 15 minutes, including verifying that all valves are closed. Incoming pipeline transfers can be halted by activating an emergency shutdown valve either from the control panel at the operations office or at the valve location at the booster station. Under a worst case scenario, when the onshore operators are not able to contact immediately the offshore platforms to cease shipping operations, the high pressure alarms on the pipeline and the high level alarms on the shipping tanks would sound, and the platforms would cease shipping within approximately 15 minutes.

Overfill protection on outgoing transfers is provided by high level alarms on shipping tanks, heater-treater vessels, and free-water knockout (FWKO) vessels.

- For the ROSF, there are four shipping tanks with only one in primary service. Overflow lines are connected from the primary tank to the secondary tanks. In addition, a high level of fluids in the flare scrubber will initiate an automatic pipeline shutdown.

- For the MOSF, there are two shipping tanks with only one in primary service. Overflow lines are connected from the primary tank to the secondary tank.

The high level alarms on the shipping tanks and other vessels at both facilities are subject to a monthly testing schedule, and are replaced if found defective. Additional protections at the ROSF lower level include in-line check valves and booster pumps that meet API 14C recommendations.

Incoming product rates and totals are verified on a daily basis through a 24-hour report. Strip charts on the control panel record continuous rates and pressures. These data are received via hard-wired telephone transmissions from the platforms. Outgoing transfer of oil is verified in a daily close out report. These data are communicated to the platforms for accounting purposes. LACT units are calibrated weekly, and the meters are read daily for reporting to both the platforms and the receiving company.

Near ROSF, local drainage from Los Sauces Creek is confined within a concrete channel sized to contain potential flood runoff in the creek. There are no flood prone areas at the ROSF. Stormwater drainage at the facility is routed to Los Sauces Creek above a weir located on the creek adjacent to the lower level booster pump station. Under dry conditions, if a leak were to occur outside containment, the drainage can be routed to two 3,000 barrel sand pits adjacent to the booster station. In addition, stormwater that may accumulate in the containment areas is routed to the wastewater tank in the upper level and is routinely emptied by vacuum truck for proper disposal, or is sent by pipeline to an adjacent operator for use in waterflood operations.

If a spill were to occur in the ROSF lower level pump area the secondary containment area has a high level alarm that would detect the spill and initiate a pipeline and pump shutdown. Additional detection methods include scheduled surveillance by operators, pressure point monitoring, a camera system, and a Leak Net monitoring system.

The Mandalay site is not prone to flooding. While the local drainage in the immediate vicinity of MOSF is toward the facility, this "watershed" area is quite small.

12.9.2 Ft Apache Onshore Facility

The transfer of product from Platform Eva to Ft Apache is conducted via pipeline on a 24-hour basis. The process is essentially the same as for MOSF and ROSF. Because each facility is hard-piped, there is no hookup procedure for transfers of oil to or from the facility. Tank truck loading and unloading do not occur at the facility. During normal operations, water and oil on the platform are transferred from the separators to the shipping tank. Based on the level in the tank, the shipping pumps automatically activate to pump the mixture into the pipeline. The shipping and receiving tanks are equipped with high and low level alarms and shutdowns. The alarms are tied into the platform programmable logic controller (PLC). Operator control or involvement is not necessary unless there is a malfunction.

If there is an automatic shutdown triggered by high or low pipeline pressure, the platform operator has several steps to perform before shipment is resumed: sensors are checked, onshore

operations status is ascertained, visual inspection of pipeline route is conducted if necessary, valve positions are checked, then normal start-up procedures are conducted.

12.10 Other Prevention Measures

12.10.1 Response Plans

The Company maintains Oil Spill Response Plans (refer to previous sections of this document) and Emergency Response Plans in addition to this OSPR Supplement that have been prepared in accordance with the following requirements:

- Spill Prevention, Control, and Countermeasures Plan (40 CFR 112)
- Oil Spill Response Plan (30 CFR 254)
- Emergency Response Plan – Transportation of Natural Gas by Pipeline (49 CFR 192)

12.10.2 Risk Reduction Incentive Programs

The protection of employee safety and health is enthusiastically supported by Company management. This support is demonstrated in part through programs to provide recognition and extra incentives for employees to work safely. Management provides employees the opportunity to earn special awards for their own safe work and the safe work of the employees they work with on a daily basis.

12.10.2.1 Safety Incentive Program

The safety incentives awards are intended to help maintain constant safety and health awareness. They are not to be considered a substitute for any element of Company Safety Rules and Standards.

12.10.2.2 Team Safety Incentive Program

The team Program is intended to encourage and recognize safe and health work practices of a team (or crew) working together in safety sensitive positions (actual work in the field). It is not intended for office employees, engineers, or managers. Each member of a Team (except contractor employees) will earn an award ($50 gift certificate) each calendar quarter that no member of the team has or contributed to:

- An Occupational Safety and Health Administration (OSHA) LTA/RWD (Lost Time Accident/Restricted Work Day) injury, or
- A vehicle accident, or
- Fails to report any occupational injury or illness, accidental property damage or unsafe condition, or
- Fails to follow an established environmental or safety procedure or policy.

If an individual sustained the OSHA LTA/RWD injury, vehicle accident, contributed to an OSHA LTA/RWD injury or failed to report, they and their Team will forfeit their award for the remainder of the calendar year.

An OSHA LTA/RWD injury includes the following:

- Fatalities, regardless of the time between injury and death.
- Any injury that results in a lost workday.
- Any other injury that involves loss of consciousness; results in restriction of normal work duties; results in the transfer to another job; or results in the termination of employment. An OSHA LTA/RWD injury does not include OSHA-Recordable-only injuries.

A vehicle accident includes any incident involving a vehicle that results in damage to a vehicle, damage to other property or personal injury and which is determined to be the fault of the employee.

To be eligible for a Team award, an employee must have worked with the given team at least one half of the regularly scheduled workdays within that calendar quarter.

12.10.2.3 Supervisor Safety Incentive Program

The Supervisor program is intended to recognize the supervisor that encourages the employees under their supervision to work in a safe and healthy manner. If the supervisor and all members of the teams supervised meet the requirements of the Team Safety Incentive Program defined above in the calendar quarter, that supervisor will receive an award ($50 gift certificate).

If any of the supervised crews fail to meet the Team Safety Incentive Program requirements on two or more events at any time during a calendar year, the supervisor forfeits their awards for the remainder of the calendar year. Any supervisor who personally sustains an OSHA recordable injury, is involved in a vehicle accident, or fails to report an accident or illness, accidental property damage or unsafe condition will forfeit their award for the remainder of the calendar year. However, the team shall not forfeit their awards as a result of the supervisor's incident.

Drilling foremen will be treated as a supervisor in this incentive program. The contractor employees under the foremen's jurisdiction will be treated as his Team, but awards will be only given to the foremen. The drilling foremen's goal for 2000 will be an OSHA Recordable rate of < 3.0. An award (Year 2000 = $40 gift certificate) will be given to the drilling foremen each quarter in which the foremen's team has an OSHA Recordable rate of < 3.0.

12.10.2.4 Safety Excellence Program

The Safety Excellence Program is a multiple year program to encourage and recognize continuing safe and healthy work practices. Employees who qualify for the Team Safety Incentive Program award each quarter of a calendar year will be awarded an annual milestone award.

- The Safety Excellence Recognition is based on the calendar year.
- Special Recognition is awarded to individuals attaining consecutive years of Safety Excellence.

12.10.3 Alcohol and Drug Testing Program

The Company drug, alcohol, and contraband policies are expressed in various forms in the Employee Handbook, Safety Manual, and Company's Anti-Drug Program.

Company Policies are intended to provide a workplace free of drugs, alcohol, and contraband. The Company strictly prohibits the use, sale, distribution, or possession of contraband, alcohol, or unauthorized mind altering substances or being under the influence of alcohol or unauthorized mind altering substances while on Company premises, in Company vehicles, or while on Company business. Violations of these Policies will result in immediate discharge, and may be reported to law enforcement authorities.

Each employee is required to certify annually that they understand these Policies and understand that violation will result in immediate discharge from employment.

The Company will require a drug screen for new employees, which are to be assigned to Safety Sensitive Positions, employees transferred or promoted to Safety Sensitive Positions, and employees returning to Safety Sensitive Positions after an absence of 90 days or more. The Company reserves the right to require employees to submit to alcohol or drug testing on a random basis as determined by government regulations and management on a periodic unannounced basis for reasonable cause as determined by management. If an employee tests positive, or refuses the testing, the employee will be discharged.

Contraband includes the unauthorized possession of Company or employee property and possession of deadly weapons, explosives, illegal drugs, drug paraphernalia, and alcoholic beverages. Deadly weapons include a firearm or anything designed, made or adapted for the purpose of inflicting bodily harm. Ordinary pocketknives with a blade length of five inches or less are generally excluded from this definition. Explosives include all types except those required for specific, Company requested operations. Entry onto Company property or work location, including parking areas and vehicles, is deemed consent to inspection of person, vehicle, Company furnished living quarters, and personal effects at any time. If an employee refuses this inspection, the employees will be discharged immediately.

Other than in statistical form, an individual's drug test results will be treated as confidential. The test results will not be released without the written consent of the individual. The exception is that individual's information must be released upon request by certain regulatory agencies.

All contractors working on Company premises or while on Company business are subject to the provisions of these Policies.

12.10.4 Site Security

Platforms

All platforms are staffed 24 hours a day. Platform personnel routinely tour the platforms to inspect equipment, and observe operations and any unusual activities. Also, the crewboat will

alert platform personnel if it observes any suspicious or unusual activities during the routine voyages between platforms. Any breach of security is immediately reported to the USCG.

The platforms and associated pipelines are clearly identified on NOAA Chart No. 18725 ("Port Hueneme to Santa Barbara") and Chart No. 18746 ("San Pedro Channel"). The monthly publication "Notice to Mariners" contains information regarding any channel activity (i.e., construction or dredging) and bathymetric changes specific to the navigational chart.

Each platform has adequate lighting. Portable lighting may be utilized when needed.

MOSF

Entry to the MOSF from Harbor Boulevard is controlled by an electronic keypad combination lock. Entry to the facility from the access road is controlled by an infrared sensor alarm. During the hours of darkness, the gate to the facility is closed and locked. Three sides of the site are enclosed by 10-foot block walls and the fourth side is enclosed with a 10-foot fence. All walls and fences are topped with razor wire. All required property and right-of-way signs are posted and maintained. One-way gates are provided in the fenced area for emergency exit.

Fort Apache

Fort Apache is surrounded by ten-feet high cement block walls and accessible by two steel gates. The Production Foreman is on call 24 hours a day. The Fort Apache facility is monitored between 5:00 am and, at a minimum, 5:00 pm, seven days a week by Company personnel. Only authorized personnel who are properly trained in the operation of the facility are approved to operate equipment controls or valves. Entrance gates are locked when the facility is unattended or not in production. The facility has adequate lighting. Portable lighting may be utilized when needed.

ROSF

The ROSF is geographically isolated. Access to the Upper Level of the facility is via a one-mile long road after gaining entrance to the Lower Level through a locked gate. The gate can be opened by a coded keypad or by the operator after the visitor is cleared to enter. The Lower Level is surrounded by a 6-ft high chain link fence. Two Lower Level security cameras are strategically placed: one to view the gate area to verify visitor identity before allowing admittance, and the other to view the process area. All visitors are required to sign the sign-in/sign-out log maintained at the facility office. Visitors are escorted to facility areas outside the office.

Typically three ROSF Operators are on site during the day. The night crew consists of two individuals. Operator duties consist of routine facility operations and being prepared to respond to emergencies. Each Operator conducts a complete site inspection every two hours. These are staggered, which results in a facility inspection being performed every hour.

ROSF operations areas are well lit with photocell-controlled industrial lamps. Driveways and the main gate area are well lit as well.

The flow meter on the incoming wet crude pipeline has capped connections in place for proving (testing) the meter. All connections are secure within the patrolled process area. Sales quality oil is protected in the shipping tanks and through the LACT units with documented lead-wire seals. Also, PSV isolation valves are car-sealed (metal tie-wraps) open for safety purposes.

As noted in Section 12.9.1, incoming pipeline transfers can be halted by activating an emergency shutdown valve either from the control panel at the operations office or at the valve location at the Lower Level booster station. In case of an extreme emergency the Rincon Onshore Facility can be shut down by activating the Emergency Shutdown (ESD) System, at any of seven ESD stations (see Figure 12-7). When activated (by pulling pin and pushing button), they shut down the electric gas compressors, the fuel to the internal combustion gas compressors, and the gas to all fired heaters in the facility. They also sound an audible fire alarm. (None of the other process equipment in the facility will be shut down by the ESD system.)

Location of Activation Switches ⊗

(Note that the ESD activation switches are labeled "FIRE")

Station #1 Main road at bottom of stairway to Low Temperature Separator (LTS) area.

Stations #2-#7 Inside the Compressor House at the exit doors.

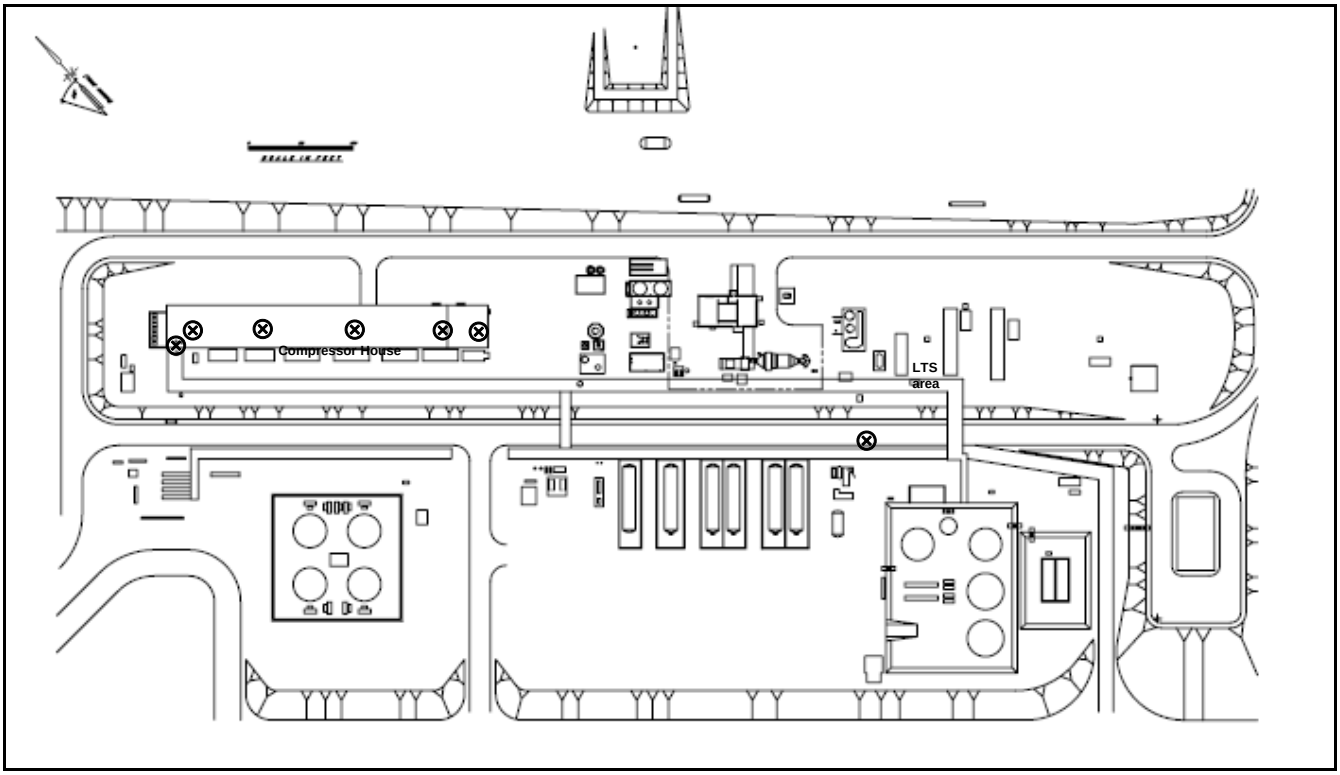

Figure 12-7. ROSF ESD Location Map

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Section 13 Response Capability Analysis

13.1 Response Equipment Required

13.1.1 On-Water Response Equipment

The manpower and equipment resource estimates for the on-water cleanup planning volume are presented in this section. These estimates are based on the theoretical worst-case discharge planning volumes presented in Section 11 of this Volume. Section 5.6 of Volume 1 should be referred to when activating equipment and manpower resources in the event of a discharge to ensure the applicability of the clean up equipment and techniques for the actual area impacted.

To assess the adequacy of available resources, it is necessary to determine the volume of material that would need to be recovered in the event of a worst case discharge. The U.S. Coast Guard (33 CFR 154, Append. C, §7), EPA (40 CFR 112, Append. E, §7), and the State of California (CCR 14 §817.02(d)(2)) have established "persistence" and "emulsification" factors to address the tendency of oils to evaporate and to emulsify (and increase in volume) in water. Applying the appropriate persistence and emulsification factors for Group 3 oils to the worst case spill volumes (see Tables 11-10 and 11-11) results in the calculations shown in Table 13-1.

Table 13-1. Response Planning Volume

Worst Case Discharge	Persistence Factor[1]	Emulsification Factor	Planning Volume
Santa Barbara Channel: 8851 bbl	0.5	2.0	8851 bbl
San Pedro Channel: 4082 bbl	0.5	2.0	4082 bbl

1. USCG uses a 6-day 0.40 factor. EPA uses a 4-day 0.50 factor.

Table 13-1 therefore provides the basis for determining the adequacy of response resources for both offshore and shoreline resources.

In the California Marine Facility Contingency Plans regulations (CCR Title 14, section 817), subsection 817.02(d)(3)(B) provides response Capability Standards for "Facility/Transfer Area and the Santa Barbara Channel Area." These standards are shown in Table 13.2.

Table 13-2. California Water Response Capabilities Standards

Regulation	Tier 1 12 hrs	Tier 2 36 hrs	Tier 3 60 hrs
817.02(d)(3)(B)2 Requirement	15,625 BPD	28,125 BPD	53,125 BPD
817.02(d)(3)(C) 1997 Revision	19,531 BPD	35,156 BPD	66,407 BPD
817.02(d)(3)(C) 2001 Revision	24,414 BPD	43,945 BPD	83,009 BPD
817.02(d)(3)(B)2 2005 Revision	24,414 BPD	43,945 BPD	83,009 BPD

The California regulations further state [subsection 817.02(d)(3)(A)] that "the total amount of on-water containment and recovery equipment and services required shall be the lesser of the amount necessary to address the Response Planning Volume … or the Daily Recovery Rate…" (i.e., Table 13.1 or Table 13.2). Our worst case spill planning volumes (Table 13.1) are clearly "the lessor" and are the volumes for which we must provide adequate response equipment and services.

As described in Appendix C of Volume 1 of this Spill Response Plan, the response services and equipment of Clean Seas would be available to the Company in the Santa Barbara Channel; and MSRC would provide similar support in the San Pedro Channel. Table 13-3 provides examples of the response resources available to the Company by each of these OSROs (Oil Spill Response Organizations) in our areas of operation. These resources may vary in time, as items are replaced, taken out of service for maintenance, or are in use for other spill responses.

Table 13-3. OSRO Response Capabilities

Resources	Clean Seas (Santa Barbara Channel)	MSRC, LB[1] (San Pedro Channel)
Derated Recovery Capacity	Skimmers on Vessels and in Yard 71,277 BPD	Skimmers on Vessels and in storage 107,290 BPD
Storage Capacity[2]	Tank Barge 7,840 bbl Misc. Smaller Barges 800 bbl Storage Bladders/Containers 1,886 bbl Vessels 1858 bbl	Tank Barge (Pt Hueneme) 32,000 bbl Misc. Smaller Barges 1,000 bbl Storage Bladders 1,500 bbl Vessels 9,700 bbl
Containment and Protection Boom Length	Open Ocean 18,000 ft Nearshore/Protective 32,800 ft	Open Ocean and Nearshore/Protective >59,000 ft

Source: DCOR OSRP Appendix, Sections C.3 and C.4.

1 Resources available in Long Beach & Terminal Island; significant additional equipment is available elsewhere in California.

2 These are examples. Additional storage is available from both OSROs.

Based solely on each OSRO's response capability in the area noted, the Company could effectively respond to a worst case spill in that area. If necessary, the Company can also contact the other OSRO to provide additional offshore and nearshore response capability. In the event that a spill cannot be fully contained offshore, and a shoreline response effort is necessary, the Company will call upon resources available both within the local area and from outside the area to provide the manpower and equipment required to mount and sustain a major onshore cleanup effort.

13.1.2 Shoreline Response Equipment

The types and quantities of shoreline oil spill response resources needed to address the federal and OSPR shoreline planning volumes depend on the type of shoreline, accessibility, the volume of oil that must be recovered, the number of shifts per day, and other factors, such as tidal cycles, winds, and currents. In addition to the equipment available from our primary OSROs (Clean Seas and MSRC) the Company has entered into agreements or otherwise has on-going business dealings with contractors to meet shoreline equipment and service requirements of this response Plan (see Appendix C of Volume 1 of this OSRP). These contractors include, but are not limited to:

- AIS
- Patriot Environmental Services
- NRC Environmental Services

All shoreline response equipment from these contractors is appropriate for use in the Company's areas of operation for containing and recovering Group 2 and 3 oils. The shoreline cleanup equipment and protective boom available to the Company is appropriate for the specific types of shoreline described in Section 5 of Volume 1 of this Plan.

Shoreline cleanup may involve other contractors besides the above-named companies. Although the OSROs have specialized equipment and trained personnel, not all shoreline cleanup requires specialized equipment or training. DCOR also maintains relationships with local providers of manpower and cleanup equipment, including vacuum trucks, heavy equipment, vehicles, sorbent materials, etc. that may be called upon to respond to an oil spill.

Local resources (within Santa Barbara and Ventura Counties) to respond to oil contacting the shoreline are available within one to two hours, depending on the location or locations where oil contacts the shoreline. These resources include HAZWOPER trained personnel, heavy equipment, and manual tools for shoreline cleanup. Support services, such as sanitary facilities, food services, lodging, etc. would also be obtained locally.

Resources from the Los Angeles or Long Beach areas would require approximately five hours or more to mobilize, transport to a deployment location, and commence cleanup operations. In the case of a large spill contacting a significant portion of the shoreline involving multi-day cleanup operations, such resources could be mobilized to assist with the cleanup for the duration. However, they would not be relied upon for initial response efforts due to their distance from the likely locations where oil would come ashore. Generally, the operating personnel and equipment will be delivered simultaneously by the same contractors.

13.1.3 Temporary Storage

Temporary storage of recovered oil should be twice the daily recovery rate. As shown in Table 13-3, Clean Seas maintains a temporary storage capability of over 10,000 bbls and MSRC has over 40,000 bbl in storage capacity. Complete inventories of their equipment are available on their websites.

In addition to the storage barges and numerous collapsible storage containers (See Appendix C of Volume 1), Clean Seas has 100-barrel aluminum recovery barges. These are staged at Clean Seas' facility in Carpinteria and can be trailered and launched from any public launch ramp. They can be transported to a suitable launch location and towed to a spill site within approximately four hours. Likewise, MSRC has equipment staged at several southern California locations and they have the capability of transporting it to other areas as needed.

Onshore storage in the form of portable storage bins can be obtained locally within four hours. Larger storage tanks, such as Baker tanks, can be obtained within California in a day or less.

13.2 Response to a Worst Case Spill Volume

The following discussion summarizes the procedures that would most likely be implemented to address the worst-case spill volume from a Company facility. The actual procedures implemented by the Company will be dependent on the specific characteristics of the spill event and may not agree exactly with the following summary.

Immediately following notification of the spill, the Foreman, Operator in Charge, or his representative would notify Company's Qualified Individual (Incident Commander) of the severity of the release and initiate the mobilization of primary response equipment and personnel. In addition, the onsite personnel would be instructed to contain and stop the release at the site if possible. Spill movement and size would be estimated using the procedures outlined in Section 5.5.2 and Appendix E in Volume 1 of this Plan. Information on the cause, size and movement of the spill would be transmitted to Clean Seas' or MSRC's primary and secondary response personnel and to the Company Incident Management Team (IMT). IMT team members would be instructed to report to the Incident Command Center as soon as possible.

Upon arrival of the initial response personnel and equipment, site characterization would be conducted by trained personnel with suitable protective and monitoring equipment and, if determined safe, initial containment and recovery would be implemented. These procedures are provided in Section 5.6 in Volume 1 this Plan. Onsite personnel would be responsible for notifying the Incident Commander of initial field operations and the anticipated equipment requirements for the response operations. Secondary equipment, if necessary, would be mobilized from Clean Seas/MSRC, other spill response organizations, independent contractors, and governmental agencies to ensure timely delivery to the spill site as necessary.

Following initiation of spill response operations, the Company's IMT members working in coordination with the Federal and State On-Scene Coordinators or their representatives would continue to monitor spill movement and response operation effectiveness. In the event trajectory modeling and associated real time observations indicate that shoreline areas are at risk of being impacted by the spill, shoreline protection (Section 5.6.1 of Volume 1) and shoreline cleanup (Section 5.6.2 of Volume 1) procedures would be implemented. Should multiple areas require protection, site prioritization will be accomplished using the procedures outlined in Section 5.3 of Volume 1 of this Plan. All necessary equipment would be moved to the assigned staging areas by the assigned onshore cleanup contractor.

In the event wildlife resources are threatened, the Company will work with the California Oiled Wildlife Care Network, California Department of Fish and Game, National Marine Fisheries Service, and/or other related wildlife rescue and rehabilitation services to identify the necessary resources to capture, clean, and care for the impacted animals. The Company IMT members would provide the necessary support to site and maintain operations at the care sites (See Section 5.7 in Volume 1 of this Plan).

Recovery, temporary storage, recycling and/or disposal of oil from offshore operations would be coordinated by the IMT following the procedures discussed in Sections 5.6 and 6.2 of Volume 1 of this Plan. Initial recovered oil storage and transfer sites would be identified and all necessary agencies approvals would be obtained. Recovered oil and oily debris would then be transferred to approved recycling and/or disposal sites.

13.3 Response to a 30-day Blowout

As indicated in Section 11.2.3 of this Volume, the daily release rate based on a blowout on Platform Gilda is estimated to be 200 bbl. Presuming a blowout lasting 30 days, the maximum release volume would be approximately 6,000 bbl. With the decline of reservoir pressure, the increase in water cut, and intervention by various response organizations, the risk of an uncontrolled well flow would be significantly diminished over time.

Response, containment, recovery, and cleanup operations would be continued for the duration of the spill event. Additional resources required for a prolonged response would include, but not be limited to, the contractors and equipment providers identified in Appendix C of Volume 1. Modifications to the response procedures and associated equipment and personnel would be implemented in coordination with the Federal On-Scene Coordinator and/or State On-Scene Coordinator as the events dictated. Spill source control would be continued until the release was successfully contained. Additional response procedures including chemical agents (dispersants) and *in-situ* burning would be continually evaluated and, if determined necessary and feasible, agency approvals would be requested in accordance with the procedures outlined in Appendices F and G of Volume 1.

13.4 Responding to a Worst-Case Discharge during Adverse Weather

Adverse weather can introduce various complications to a worst-case discharge response. In Southern California, the most likely weather impacts are strong winds, high sea states, and heavy winter rains.

During adverse weather conditions, safety of responder personnel is always first priority. Mobilization and deployment times for both offshore and onshore equipment will likely increase. The amount will depend on the severity of the weather. Highway closures are sometimes necessary due to landslides and range fires and may result in delays transporting equipment and personnel to staging areas.

Containment and recovery operations offshore will continue as long as responder safety is not compromised and boom and skimmers remain effective. The speed of response vessels will be

reduced, and some smaller vessels may be taken out of service. Skimming with large swells and waves present will likely result in a higher seawater cut. Authorization to decant and discharge seawater from recovery operations (see 2008 ACP, §3250.2) will thus be more important under such conditions.

Extreme sea states may render containment and recovery operations ineffective. Under these circumstances, the use of dispersants as discussed in Appendix F of Volume 1 may be the best option available. Note that extreme weather conditions create a high energy environment, which tends to cause oil to become entrained in the water column, much as dispersant application will. High winds and heavy rain may thus accomplish a measure of dispersion, thus rendering some of the oil unrecoverable but less harmful to portions of the environment, such as the water surface and shorelines.