

Appendix A
EIR DISTRIBUTION LIST

<u>Name</u>	<u>Agency/Organization</u>
Hannah-Beth Jackson	19th State Senate District
Mary O'Gorman	2nd District Supervisor Janet Wolf
Das Williams	37th Assembly District
Doreen Farr	3rd District Supervisor Doreen Farr
Chris Henson	3rd District Supervisor Doreen Farr
Gene Kramer	Abalone & Marine Resources Council
Janet Laurain	Adams, Broadwell, Joseph, and Cardozo
Kelli McGee	American Oceans Campaign
Darlene Chirman	Audubon Society
Josh Leech/John P. Tynan Group, Inc.	Bacara Resort & Spa
Raudel Joe Banuelos, Jr.	Barbareno/Ventureno Band of Mission Indians
Kathleen Pappo	Barbareno/Ventureno Band of Mission Indians
Julie Lynn Tumamait	Barbareno/Ventureno Band of Mission Indians
David Panzer	Bureau of Ocean Energy Management
Christine Sproul	CA Attorney General's Office
Tom Napoli	CA Dept. of Fish and Wildlife, Marine Region
Becky Ota	CA Dept. of Fish and Wildlife, Marine Region
Mike Sowby	CA Dept. of Fish and Wildlife, OSPR
Ken Wilson	CA Dept. of Fish and Wildlife, OSPR
Sean Carlson	CA Dept. of Fish and Wildlife, Region #5
Morgan Wehtje	CA Dept. of Fish and Wildlife, Region #5
Nadell Gayou	CA Resources Agency/DWR, Env. Review
Mike Higgins	CA RWQCB, Central Coast Region
George Steinbach, Executive Director	California Artificial Reef Enhancement Program
Larry Ebenstein	California Center for Public Policy
Alison Dettmer	California Coastal Commission
Kate Huckelbridge	California Coastal Commission
Trish Chapman	California Coastal Conservancy
Michael T. Murphy	California Coastkeeper Alliance
	California Department of Conservation
Michael Connell	California Dept. of Fish and Wildlife, OSPR

<u>Name</u>	<u>Agency/Organization</u>
Adam Fukushima	California Dept. of Transportation, Dist. 5
Steve Fields	California Div. Of Oil
Dr. Knox Mellon	California Office of Historic Preservation
Miyoko Sakashita	Center for Biological Diversity
Doug Sillers	Change.org Online Petition
	Channel Islands National Marine Sanctuary
Frank Arredondo	Chumash Tribal Representative
Ernestine DeSoto	Chumash Tribal Representative
Diane Conn	Citizens For Goleta Valley
Naomi Kovacs/Erin Duffy	Citizens Planning Assn
Dave Bernal	Citizens Planning Association
Dan Singer, City Manager	City of Goleta
Anne Wells	City of Goleta, Planning & Enviro Services
Amy Wilke-Prior	City of Santa Barbara, Waterfront Department
	Clean Seas
Vennise Miller	Coastal Band of The Chumash Nation
Executive Director	Coastal Resource Information Center
Dave Davis, Executive Director	Community Environmental Council
David Coon	Env. Health & Safety, Bldg. 565
	Environment Now
Karen Kraus/Linda Krop	Environmental Defense Center
Ed Easton	Friends of Coal Oil Point Reserve
Carla Frisk	Get Oil Out!
Hannah Eckberg	Get Oil Out, Inc.
Michael H. Smith	Gray Whales Count
	Heal the Bay
Executive Director	Heal the Ocean
Craig Fusaro, Director	Joint Oil/Fisheries Liaison Office
Monica Lopez	KCBS
Michael Feeney	Land Trust For Santa Barbara County
Susan Jordan	League For Coastal Protection

<u>Name</u>	<u>Agency/Organization</u>
Jean Holmes	League of Women Voters
Barbara Massey	League of Women Voters of Santa Barbara
Connie Hannah	League Of Women Voters, SB Library Acquisitions Department
Jesse Colorado Swanhuysen	Local Ocean Network, Channel Islands
Cameron Benson	Local Ocean Network/EDC
Jenn Feinberg Eckerle	Natural Resources Defense Council
Bryant Chesney	NOAA Fisheries, SW Region
Tina TFahy	NOAA Fisheries, SW Region Ocean Conservancy
Brad Hagerman, CEQA Representative	RWQCB, Central Coast Region 3
David Schwartzbart Manager	RWQCB, Central Coast Region 3 Sandpiper Golfcourse Santa Barbara Audobon Society
Kira Redmond	Santa Barbara Channel Keepers
Jenna Driscoll	Santa Barbara Channelkeeper
Eric Gage	Santa Barbara Co. APCD
Molly Pearson	Santa Barbara Co. APCD
Jay Sheth	Santa Barbara Co. Bldg. & Safety
Kevin Drude	Santa Barbara Co. Energy Division
Chris Olmstead	Santa Barbara Co. FPD
Fred Tan	Santa Barbara Co. FPD
Elsa Arndt	Santa Barbara Co. OES
Ken Hough	Santa Barbara County Action Network
Joseph E. Holland	Santa Barbara County Clerk, Recorder
Errin Briggs	Santa Barbara County Planning
Paul Collins	Santa Barbara Museum of Natural History
DeAnn Sarver	Santa Barbara Shores Homeowner's Assoc.
Jeff Grange	Santa Barbara Yacht Club
Vincent Armenta	Santa Ynez Band of Mission Indians Santa Ynez Band of Mission Indians

<u>Name</u>	<u>Agency/Organization</u>
Adelina Alva-Padilla	Santa Ynez Tribal Elders Council
Freddie Romero	Santa Ynez Tribal Elders Council
Fran Farina	Sierra Club
Robert Sollen	Sierra Club
Steve Smith, Program Supervisor	South Coast Air Quality Management District
Jeffrey M. Smith, AICP	Southern California Assn of Govts
Hasan Ikhmeta	Southern California Association Of Governments
Alice Green	Stop Oil Seeps California Stop Oil Seeps California
Keith Zandona	Surfrider Foundation
Amy Orozco	The Coastal View The Gas Company
Dist. Engineer	U.S. Army Corps of Engineers
Bruce Henderson	U.S. Army Corps Of Engineers, Ventura
John C. Luzader	U.S. Coast Guard Marine Safety Detachment
Steven John	U.S. EPA
Bridget Fahey	U.S. Fish and Wildlife Service
Rick Farris	U.S. Fish and Wildlife Service
Christine Elliott	U.S. Representative Lois Capps
Lois Capps	U.S. Representative, 24th Congressional
Cristina Sandoval	UCSB
Larry Parsons	UCSB Env. Health & Safety
Milton Love	UCSB Marine Science Institute
	United Anglers of Southern California
	Urban Creeks Council
Steve Greig, Manager	Venoco, Inc.
Harry C. Harper, General Counsel	Venoco, Inc.
Coastal Coordinator	Western States Petroleum Assn.

Individuals

Doug Buckmaster

Margaret Connell

Ingeborg Cox, MD

Elizabeth Crawford

Dr. and Mrs. Docter

Carol and Luis Fondevila

Mark and Leisa Foster

Kathleen Gephardt

Carolyn Grenier

Frank Hudson

Dianne Johnson

Vivi Katsioularis

Daniel Launspach

Jamey and Karen Marth

D.A. Metrov

Aimee Miller

Kathy Ormseth

Edith and Stanley Ostern

Carrie Riley

Shawn Riley

David Sangster

Jessica Scheeter

Mary Lou Schroeder

Bill Shelor

Lisa Sloan

Steve Solomon

Regina Unzueta

Richard Whited

Appendix B

**COMMENTS ON NOP
AND INDEX TO LOCATION
WHERE EACH INDIVIDUAL NOP
COMMENT IS ADDRESSED IN EIR**

INDEX TO NOP COMMENTS

1
2 Appendix B includes a copy of the Notice of Preparation (NOP) for the Revised PRC
3 421 Re-commissioning Project (Revised Project), transcripts from the Public Scoping
4 Hearings conducted on the NOP, copies of all comment letters received on the NOP
5 during the public comment period, and an indication (Section or sub-Section) where
6 each individual comment is addressed in the Revised Draft Environmental Impact
7 Report (Recirculated Draft EIR). **Table B-1** lists all comments and shows the comment
8 set identification number for each letter or commenter. **Table B-2** identifies the location
9 where each individual comment is addressed in the Recirculated Draft EIR.

Table B-1
NOP Commenters and Comment Set Numbers

Agency /Affiliation	Name of Commenter	Date of Comment	NOP Comment Set
City of Goleta	Anne Wells	4/29/13	1
County of Santa Barbara, Planning and Development Department	Glenn S. Russell	4/29/13	2
County of Santa Barbara, Office of Emergency Planning	Elsa Arndt	4/29/13	3
Santa Barbara County Air Pollution Control District	Eric Gage	4/22/13	4
Department of Conservation, Division of Oil, Gas, & Geothermal Resources	Patricia A. Abel	4/22/13	5
Natural Resources Defense Council (NRDC)	Karen Garrison	4/29/13	6
Environmental Defense Center (EDC)	Linda Krop	4/24/13	7
League of Women Voters	Beth Pitton-August	3/29/13	8
Barbareño/Ventureño Band of Mission Indians	Kathleen Pappo	4/24/13	9
California Center for Public Policy	Lanny Ebenstein, Ph.D.	4/29/13	10
Interested Party – Resident	Richard Whited	4/29/13	11
Transcript from NOP Public Scoping Meeting on 4/3/2013 from 3:05 pm to 6:15 pm	Various	4/3/13	12
Interested Party	Ingeborg Cox MD, MPH	4/28/2013	13

**Table B-2
Responses to the NOP Comments**

Comment #	Responses
Comments from the City of Goleta	
1-01	Figure 1-1 has been updated to include this information.
1-02	Comment noted. The locations of the various jurisdictions have been clarified on figures and within the text as appropriate. However, the EIR must analyze the whole of the Project and breaking down the analysis by jurisdiction would serve to confuse the reader rather than adding clarity.
1-03	Suggested edits from the NOP project description regarding the EOF and Line 96 are included in Section 2.2, Proposed Project, of this Recirculated Draft EIR.
1-04	The existing pipeline is described in Section 2.1, Project Background.
1-05	A preliminary decommissioning plan has been developed by CSLC for the Revised Project. This plan is included in 2.6 in the Recirculated Draft EIR.
1-06	An updated description of the 2-inch flowlines is included in Section 2.2, Proposed Project. The details of Project tie-in into the Holly pipeline prior to entering the EOF are also described in Section 2.2. The new meter would be installed at the connection with the Holly pipeline.
1-07	The existing state of the access road for the piers and potential repairs that would be necessary in order to use the road during the construction of the project are addressed in Section 2.3, Construction Procedures.
1-08	Suggested edits to the NOP project description are included in Section 2.2, Proposed Project, of this Recirculated Draft EIR.
1-09	Section 5.0, Project Alternatives Analysis, assess a reasonable range of alternatives to the proposed Project, including a No Project Alternative and Processing PRC 421 Oil at LFC. Refer to Section 5.3 in the Recirculated Draft EIR.
1-10	The pipeline from 421 to the EOF is evaluated for safety and risk of upset in Section 4.2, Safety.
1-11	The evaluation of the potential release of hazardous materials related to all aspects of the project, including construction of new pipelines from 421 to the EOF, is addressed in Section 4.3, Hazardous Materials.
1-12	The Recirculated Draft EIR includes an analysis of potential impacts on marine and terrestrial biological resources from all aspects of the Project, including operation of Well 421-2, decommissioning of Pier 421-1, changes to the EOF, and installation of new pipelines in Sections 4.6, Marine Biological Resources, and 4.7, Terrestrial Biological Resources.
1-13	Information about the City of Goleta General Plan Safety Element is included in Sections 4.2, Safety, and 4.8, Land Use, Planning, and Recreation.
County of Santa Barbara, Division of Environmental Planning and Management	
2-01	Long-term structural integrity of the pier related to erosion, tsunami, and seismic events is addressed in Section 4.1, Geological Resources.
2-02	Section 4.1, Geological Resources, addresses potential risks from reinjection of water at onshore well WD-1. The Project includes monitoring of repressurization in the reservoir to ensure reinjection does not increase seepage or increase risk of failure of other plugged wells.
2-03	Suggested edits from the NOP project description regarding the products carried

**Table B-2
Responses to the NOP Comments**

Comment #	Responses
	through Line 96 are included in Section 2.2, Proposed Project, of this Recirculated Draft EIR.
2-04	Comment noted.
2-05	Potentially hazardous materials that may be mobilized during pier decommissioning are addressed in Section 4.3 Hazardous Materials.
2-06	Comment noted.
2-07	Information about when the PRC 421 pipeline was placed out of service, including the procedures that were followed, are included in Section 2.1, Project Background.
2-08	Comment noted.
2-09	Comment noted.
2-10	Potential for impacts to Devereux Slough are addressed in Sections 4.5, Hydrology, Water Resources, and Water Quality; 4.6, Marine Biological Resources; and 4.7, Terrestrial Biological Resources.
2-11	A new air quality analysis was performed for the Revised Project. This analysis is discussed in Section 4.4, Air Quality and Greenhouse Gasses.
2-12	Potential impacts to recreational resources due to an accidental offshore oil release are addressed in Section 4.8, Land Use, Planning, and Recreation. The methodology used to assess these impacts is discussed in Section 4.5 Hydrology, Water Resources, and Water Quality.
2-13	Project-related traffic routes are described in Section 4.10, Transportation and Circulation.
County of Santa Barbara, Office of Emergency Management	
3-01	Comment noted.
3-02	The area's designation as a High Consequence Area and Unusually Sensitive area is discussed in Section 2.1, Project Background, as well as Sections 4.2, Safety; 4.5 Hydrology, Water Resources, and Water Quality; 4.6, Marine Biological Resources; and 4.7, Terrestrial Biological Resources.
3-03	Compliance with Title 49, Part 195, Transportation of Hazardous Liquids by Pipeline, regarding pipeline safety is addressed in Section 4.2 Safety. However, please note that the proposed flowline is 3 inches in diameter, enclosed in a 6-inch line for protection.
3-04	There will be no new drilling related to installation of a monitoring well. The NOP stated that, "Neither Venoco nor the CSLC can monitor the reservoir's pressure without first drilling a well into the reservoir." This wording was inaccurate, in that monitoring may be performed through the use of a reactivated well, which does not require drilling. Therefore, reactivation of an old well, for this Project Well 421-2, would allow for monitoring. Use of Well 421-2 for monitoring of the reservoir's pressure is discussed in Section 2.4, Operation, Maintenance, and Safety Controls.
3-05	Section 2.4, Operation, Maintenance, and Safety Controls, includes a discussion regarding backup power, the maintenance, and the security plan for PRC 421-2, as well as maintenance of the access road.
Santa Barbara County Air Pollution Control District	
4-01	The Santa Barbara County Air Pollution Control District's (APCD's) guidance document, <i>Scope and Content of Air Quality sections in Environmental Documents</i>

**Table B-2
Responses to the NOP Comments**

Comment #	Responses
	(updated December 2011), was used for guidance in the air quality analysis in Section 4.4, Air Quality and Greenhouse Gasses.
4-02	Emission quantification for construction and operation of the Revised Project is analyzed for compliance with APCD's permit requirements in Section 4.4, Air Quality and Greenhouse Gasses.
4-03	An assessment of toxic air contaminant emissions and associated health risks is included in Section 4.4, Air Quality and Greenhouse Gasses. A formal Health Risk Assessment was not conducted for the EIR, but a Quantitative Risk Assessment is required as mitigation (refer to MM HAZ-1e).
4-04	Consistency with the APCD Clean Air Plan is addressed in Section 4.4, Air Quality and Greenhouse Gasses.
4-05	Land uses surrounding the Project area that are sensitive to air quality impacts are examined in Section 4.4, Air Quality and Greenhouse Gasses.
4-06	Section 4.4, Air Quality and Greenhouse Gasses, includes significance thresholds for volatile organic chemicals (also known as reactive organic compounds) and nitrogen oxides, and analysis of Project-related emissions in relation to these thresholds.
4-07	Emissions related to construction of the Revised Project are addressed in Section 4.4, Air Quality and Greenhouse Gasses. Mitigation measures to address potential impacts, are also included in this section, and a Mitigation Monitoring Plan is included in Section 7 of the Recirculated Draft EIR.
4-08	Greenhouse gas emissions and global climate change impacts are addressed in Section 4.4 Air Quality and Greenhouse Gasses.
Department of Conservation, Division of Oil, Gas, and Geothermal Resources	
5-01	The Revised Project does not include injection into Well 421-1; however, it would include injection of additional water into the existing well at the EOF. This activity is described in Section 2.2, Proposed Project, and analyzed further in Section 4.1, Geological Resources.
5-02	The Revised Project does not include on-site gas/oil/water separation. Since this element was removed from the Project, it is not considered in this Recirculated Draft EIR.
5-03	Section 4.3, Hazardous Materials, addresses the need for an updated spill contingency plan.
5-04	Comment noted.
Natural Resources Defense Council (NRDC)	
6-01	The marine protected areas (MPAs) surrounding the Project site are shown on Figure 4.6-1 and potential impacts of the Revised Project on marine biological resources within the surrounding MPAs are addressed in Section 4.6, Marine Biological Resources.
Environmental Defense Center (EDC)	
7-01	A detailed Project Description is included in Section 2.2, Proposed Project.
7-02	Re-pressurization of the Lease PRC 421 reservoir is discussed in Section 4.2, Safety, and potential risks and impacts related to this re-pressurization are discussed in Sections 4.1, Geological Resources, and 4.2, Safety.

**Table B-2
Responses to the NOP Comments**

Comment #	Responses
7-03	Production history, spill history, and existing infrastructure for Lease PRC 421 are discussed in Section 2.1, Project Background, while proposed infrastructure is discussed in Section 2.2, Proposed Project.
7-04	Section 2.2, Proposed Project, provides the best estimate of the life of the proposed Revised Project.
7-05	An inventory of sensitive, rare, threatened, and endangered species and habitats in the area surrounding the proposed Project site is included in Sections 4.6, Marine Biological Resources, and 4.7, Terrestrial Biological Resources. Also, existing public access to the beach, Ellwood, Devereux, the Bacara, and Sandpiper Golf Course is discussed in Section 4.8, Land Use, Planning, and Recreation.
7-06	Analysis of potential accidental release of hazardous materials and associated impacts are addressed in Sections 4.2, Safety, and 4.3, Hazardous Materials. Potential impacts specifically related to biological resources and public use related to an accidental release are addressed in Sections 4.6, Marine Biological Resources; 4.7, Terrestrial Biological Resources; and 4.8, Land Use, Planning, and Recreation.
7-07	The condition of existing Project equipment is described in Section 2.1, Project Background, while potential associated risks are evaluated in Sections 4.2, Safety, and 4.3, Hazardous Materials, as well as in the applicable section for each issue area.
7-08	Section 2.2, Proposed Project, discusses proposed throughput at the EOF.
7-09	Section 4.8, Land Use, Planning, and Recreation, discusses policies and ordinances for the City of Goleta, and assesses consistency of the Revised Project and alternatives with these policies and ordinances.
7-10	Greenhouse gas emissions and global climate change impacts are addressed in Section 4.4 Air Quality and Greenhouse Gases. A zero-emission threshold of significance for greenhouse gases was used in the analysis.
7-11	Impacts related to sea level rise, earthquakes, tsunamis, and winter storm surge events on the pier and related infrastructure are addressed in Section 4.1, Geological Resources.
7-12	The Production/Quitclaim State Oil and Gas Lease PRC 421 Alternative was evaluated in the Recirculated Draft EIR, including a discussion regarding the infeasibility of pressure testing (refer to Section 5.3.2). However, pressure testing prior to beginning production has been included as part of the Project (refer to Section 2.4.5).
7-13	Pressure testing prior to beginning production has been included as part of the Project (refer to Section 2.4.5).
7-14	The Processing PRC 421 Oil at LFC Alternative is evaluated in Section 5.3.4 in the Recirculated Draft EIR.
7-15	Comment noted.
League of Women Voters of Santa Barbara	
8-01	Analysis of potential accidental release of hazardous materials and associated impacts are addressed in Sections 4.2, Safety, and 4.3, Hazardous Materials. Potential impacts related specifically to marine biological resources, including those surrounding the University of California and those located in Devereux Slough, are addressed in Sections 4.6, Marine Biological Resources.
8-02	The Revised Project does not include oil and gas processing on the pier. Since this element was removed from the Project, it is not considered in this Recirculated Draft

**Table B-2
Responses to the NOP Comments**

Comment #	Responses
	EIR. The Processing PRC 421 Oil at LFC Alternative is evaluated in Section 5.3.4 in the Recirculated Draft EIR.
Barbareño/Ventureño Band of Mission Indians	
9-01	Comment noted.
California Center for Public Policy	
10-01	Re-pressurization of the Lease PRC 421 reservoir is discussed in Section 4.2, Safety. Instillation and use of a monitoring well is discussed in Section 2.4.5.
10-02	Comment noted.
Richard Whited	
11-01	Comment noted.
11-02	Potential impacts to pressure in the formation and resulting natural leakage are addressed in Section 4.1, Geological Resources.
11-03	Comment noted.
Transcript from NOP Public Scoping Meeting 4/3/13 at 3:05 pm	
12-01	The integrity and safety of the facilities use for extraction, transmission, and processing of oil and gas from Lease PRC 421 are addressed in Sections 4.2, Safety, and 4.3, Hazardous Materials.
12-02	Oil and gas processing will not occur at the pier; however, it will continue at the EOF. Continued use of this facility is addressed in Section 4.8, Land Use, Planning, and Recreation.
12-03	Re-pressurization of the Lease PRC 421 reservoir is discussed in Section 4.2, Safety, of this Recirculated Draft EIR.
12-04	The best estimate of the expected life of the project, based on economics, production, and pressurization, is discussed in Section 2.2, Proposed Project.
12-05	Analysis of potential accidental release of hazardous materials and associated impacts are addressed in Sections 4.2, Safety, and 4.3, Hazardous Materials.
12-06	Greenhouse gas emissions and global climate change impacts are addressed in Section 4.4 Air Quality and Greenhouse Gases. A zero-emission threshold of significance for greenhouse gases was used in the analysis.
12-07	The Processing PRC 421 Oil at LFC Alternative is evaluated in Section 5.3.4 in the Recirculated Draft EIR.
12-08	Comment noted.
12-09	Existing infrastructure for Lease PRC 421 is discussed in Section 2.1, Project Background, while proposed infrastructure is discussed in Section 2.2, Proposed Project. Analysis of safety risks and potential accidental release of hazardous materials and associated impacts are addressed in Sections 4.2, Safety, and 4.3, Hazardous Materials.
12-10	Re-pressurization of the Lease PRC 421 reservoir is discussed in Section 4.2, Safety, of this Recirculated Draft EIR.
12-11	Greenhouse gas emissions and global climate change impacts are addressed in Section 4.4 Air Quality and Greenhouse Gasses. A zero-emission threshold of

**Table B-2
Responses to the NOP Comments**

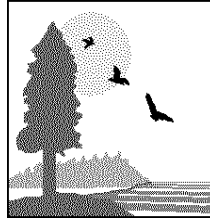
Comment #	Responses
	significance for greenhouse gases was used in the analysis.
12-12	Re-pressurization of the Lease PRC 421 reservoir is discussed in Section 4.2, Safety, of this Recirculated Draft EIR.
12-13	Existing infrastructure for Lease PRC 421 are discussed in Section 2.1, Project Background, while proposed infrastructure is discussed in Section 2.2, Proposed Project. The 6-inch pipeline that connects PRC 421 to Line 96 would be tested and internally lined prior to use.
12-14	Greenhouse gas emissions and global climate change impacts are addressed in Section 4.4 Air Quality and Greenhouse Gasses. A zero-emission threshold of significance for greenhouse gases was used in the analysis.
12-15	The Production/Quitclaim State Oil and Gas Lease PRC 421 Alternative was evaluated in the Recirculated Draft EIR, including a discussion regarding the infeasibility of pressure testing (refer to Section 5.3.2). However, pressure testing prior to beginning production has been included as part of the Project (refer to Section 2.4.5). The Processing PRC 421 Oil at LFC Alternative is evaluated in Section 5.3.4 in the Recirculated Draft EIR.
12-16	Analysis of potential accidental release of hazardous materials and associated impacts are addressed in Sections 4.2, Safety, and 4.3, Hazardous Materials.
12-17	See Section 4.8, Land Use, Planning, and Recreation, for a discussion of the existing buildings and the non-conforming facility.
12-18	See Section 2.2, Proposed Project, for a site plan of the EOF and a description of Line 96.
12-19	See Section 4.1, Geological Resources, for a discussion of risks associated with tsunamis, earthquakes, and liquefaction.
12-20	Section 4.2, Safety, addresses safety risks to the surrounding area, including the new housing at The Bluffs and Haskell's Landing.
12-21	Parking during the construction period is addressed in Section 4.10, Transportation and Circulation.
12-22	Existing infrastructure for Lease PRC 421 is discussed in Section 2.1, Project Background, while proposed infrastructure is discussed in Section 2.2, Proposed Project. Information about hydrotesting and improvements to the 6-inch pipeline between oil well 421-2 and the EOF are also included in Section 2.2, Proposed Project.
12-23	The Revised Project does not include on-site cyclone separator. Since this element was removed from the Project, it is considered in this Recirculated Draft EIR only as part of the alternatives.
12-24	Section 2.4, Operation, Maintenance, and Safety Controls, discusses maintenance of pipeline infrastructure.
12-25	Yes, CSLC is coordinating with the Department of Transportation for elements of the Revised Project that are under their jurisdiction. Refer to Section 1.3.
12-26	The inlet and outlet flow for Line 96 are discussed in Section 2.5, Use of the New Line 96 Pipeline Extension.
12-27	Potential environmental impacts on the surrounding area, including local housing communities, is addressed in Section 4.2, Safety, as well as the applicable sections for specific issue areas.

**Table B-2
Responses to the NOP Comments**

Comment #	Responses
12-28	Water consumption for the Revised Project is addressed in Section 4.5, Hydrology, Water Resources, and Water Quality.
12-29	Comment noted.
12-30	The presence of benzene following a potential spill is addressed in Section 4.5, Hydrology, Water Resources, and Water Quality.
12-31	Under the Project, Pier 421-1 would be decommissioned and removed. No additional equipment removal and decommissioning is proposed.
12-32	Risks associated with tsunamis and earthquakes are addressed in Section 4.1 Geologic Resources
12-33	Greenhouse gas emission thresholds are discussed in Section 4.4, Air Quality and Greenhouse Gasses.
Ingeborg Cox, MD, MPH	
13-01	Potential impacts to sensitive habitats and special status species at Bell Canyon Creek are addressed in Sections 4.6, Marine Biological Resources, and 4.7, Terrestrial Biological Resources.
13-02	Water quality in Bell Canyon Creek is addressed in Section 4.5, Hydrology, Water Resources, and Water Quality.
13-03	No new drilling will occur under the Revised Project. Please see Section 2.2, Proposed Project.
13-04	As discussed in Section 1.2, Public Review and Comment, citizens of Goleta will have the opportunity to comment on the Revised Project, either through written correspondence during one of the comment periods or through participation at a public meeting.
13-05	New population and housing in the area surrounding the Revised Project was considered in the analysis contained in all applicable sections of this Recirculated Draft EIR.
13-06	See Section 4.8, Land Use, Planning, and Recreation, for a discussion of the existing non-conforming use associated with the EOF.
13-07	Fracking and slant drilling are not a part of the Revised Project; therefore, this Recirculated Draft EIR does not include an analysis of these actions.

CALIFORNIA STATE LANDS COMMISSION

100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

**JENNIFER LUCCHESI, Executive Officer**

(916) 574-1800 FAX (916) 574-1810
California Relay Service from TDD Phone 1-800-735-2929
from Voice Phone 1-800-735-2922

Contact Phone: (916) 574-1890**Contact FAX: (916) 574-1885**

March 26, 2013

REVISED
**NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT
AND NOTICE OF PUBLIC SCOPING MEETING**

File Ref: SCH No. 2005061013
CSLC EIR No. 732; PRC 421; W30159

NOTICE IS HEREBY GIVEN that the California State Lands Commission (CSLC), as Lead Agency under the California Environmental Quality Act (CEQA), will prepare an Environmental Impact Report (EIR), and that CSLC staff will hold a public scoping meeting, pursuant to CEQA (Pub. Resources Code, § 21083.9, subd. (a)(2)) and the State CEQA Guidelines (§§ 15082, subd. (c) and 15083), for the project listed below.¹

Project Title: REVISED PRC 421 RECOMMISSIONING PROJECT

Applicant: Venoco, Inc. (Venoco)

Project Location: In State waters in the eastern portion of the Santa Barbara Channel in the City of Goleta, southern Santa Barbara County (**Figure 1-1**)

Meeting Information: **Wednesday, April 3, 2013**; sessions begin at **3 PM** and **6 PM**
City of Goleta Council Chamber, City Hall
130 Cremona Drive, Suite B
Goleta, CA 93117

Note: This is a Revised Notice of Preparation (NOP) due to Venoco's modification to its proposed Project Description. Venoco proposes to process production of PRC 421 oil within Venoco's Ellwood Onshore Facility (EOF) in the city of Goleta rather than on the shoreline pier (421-2) as previously proposed. Processing production on the pier will be analyzed as an alternative (see Attachment 1). The comment period has been extended and written comments must be received or postmarked by **April 29, 2013**.² Please send your comments at the earliest possible date to the contact information below. The scoping meeting date and times have not changed.

¹ CEQA is found in Public Resources Code section 21000 et seq. The State CEQA Guidelines are found in California Code of Regulations, Title 14, section 15000 et seq.

² State CEQA Guidelines sections 15103 and 15082, subdivision (b), require that responses to a NOP must be provided within 30 days after receipt of the Notice.

The CSLC staff has prepared this Revised NOP in order to obtain agency and the public's views, in writing and/or at the public meeting, as to the scope and content of the environmental analysis, including the significant environmental issues, reasonable range of alternatives, and mitigation measures that should be included in the EIR. Applicable agencies will need to use the EIR when considering related permits or other approvals for the Project. This Revised Notice is also available online at www.slc.ca.gov (under the "Information" tab and "CEQA Updates" link).

Eric Gillies, Assistant Chief Division of Environmental Planning and Management California State Lands Commission 100 Howe Avenue, Suite 100-South Sacramento, CA 95825	E-mail: CEQAcomments@slc.ca.gov FAX: (916) 574-1885 Phone: (916) 574-1890
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PROJECT SUMMARY

Venoco has applied to the CSLC to implement the Revised PRC 421 Recommissioning (Project). Venoco identified the following Project objective: to return Oil and Gas Lease PRC 421 to full oil production.

Attachment 1 includes a revised description of the proposed Project and information on its potential environmental effects. The physical environmental conditions as they exist on the publication date of this NOP will be used as the baseline setting by which the CSLC determines the significance of impacts (see State CEQA Guidelines, § 15125, subd. (a)). The CSLC staff determined that an EIR is clearly required for the Project and has not prepared an Initial Study (as provided for in State CEQA Guidelines, § 15063, subd. (a)).


The CSLC staff suspended preparation of a prior EIR for the Project due to major changes to Project details that have occurred since staff released a Draft EIR (State Clearinghouse [SCH] No. 2005061013) for public review in 2007. The CSLC staff, in consultation with other agencies, determined that these changes, identified in Attachment 1, necessitated the preparation of a new NOP (now revised) and new EIR for the Project.

PUBLIC SCOPING MEETING

Each session of the scoping meeting noticed above will begin with a brief presentation on the proposed Project. The CSLC staff will then receive comments on the potential significant environmental issues, Project alternatives, and mitigation measures that should be included in the EIR, until all persons present who wish to provide oral comments have done so, at which time staff will close the session. Depending on the meeting attendance, a three-minute time limit on oral comments may be imposed.

IMPORTANT NOTES TO COMMENTERS

1. If you submit written comments, you are encouraged to submit electronic copies by e-mail to CEQAcomments@slc.ca.gov and write “**Revised PRC 421 Recommissioning NOP Comments**” in the subject line of your email. If written comments are faxed, please also mail a copy to ensure that a readable copy is received by this office.
2. Before including your mailing or email address, telephone number, or other personal identifying information in your comment, please be aware that the entire comment—including personal identifying information—may become publicly available, including in the EIR and posted on the Internet. The CSLC will make available for inspection, in their entirety, all comments submitted by organizations, businesses, or individuals identifying themselves as representatives of organizations or businesses.
3. If you represent a public agency, please provide the name, email address, and telephone number for the contact person in your agency for this EIR.
4. If you require a sign language interpreter, or other reasonable accommodation to conduct business with CSLC staff at the scoping meeting for a disability as defined by the Federal Americans with Disabilities Act and California Fair Employment and Housing Act, please contact the CSLC staff person listed in this NOP at least 48 hours in advance of the meeting to arrange for such accommodation.
5. Please contact the staff person listed in this NOP by phone at (916) 574-1890 or by email at Eric.Gillies@slc.ca.gov if you have any questions.

Signature:  _____ Date: March 26, 2013

Eric Gillies, Assistant Chief
Environmental Planning and Management

Figure 1-1. Proposed Project Location



ATTACHMENT 1 REVISED PRC 421 RECOMMISSIONING PROJECT DESCRIPTION

1.0 Physical Description of Proposed Project

The California State Lands Commission (CSLC) is considering an application received from Venoco, Inc. (Venoco) to return existing Oil and Gas Lease PRC 421 to production after ongoing production was shut-in in 1994. The Project would share infrastructure used by other existing Ellwood area facilities as described in Table 1-1 (see Figure 1-1 for locations). Based on current projections, Venoco estimates the productive life of Lease PRC 421 to be approximately 12 years, commencing in 2013 and continuing to and potentially beyond 2025 depending upon production characteristics and Project economics. Venoco expects first-year production levels to average 700 barrels of oil per day (BOPD), with a maximum daily production as high as 1,000 BOPD, and 120 barrels of water per day (BWPD), with oil production tapering off to approximately 100 BOPD and water production increasing to nearly 900 BWPD by the final year of production.

Commencement of production would also enable the CSLC staff to assess if the Lease PRC 421 oil and gas reservoir is naturally re-pressurizing; increased reservoir pressure could result in releases of oil to the marine environment from historic, improperly abandoned oil wells and natural seeps. Neither Venoco nor the CSLC can monitor the reservoir's pressure without first drilling a well into the reservoir.

The CSLC will prepare an Environmental Impact Report (EIR) for the Project pursuant to the California Environmental Quality Act (CEQA) and State CEQA Guidelines. The EIR will provide information on the potential re-pressurization of the Lease PRC 421 reservoir, as well as the Lease's production history, spill history, existing and proposed infrastructure, and repairs to Project facilities. The CSLC staff suspended preparation of a prior EIR for the Project due to major changes to Project details that have occurred since staff released a Draft EIR for review in 2007 (State Clearinghouse No. 2005061013), including: (1) Venoco revised its Project Description in 2013; (2) Line 96 from the Ellwood Onshore Facility (EOF) to Las Flores Canyon is now operating; (3) Venoco ended barging from the Ellwood Marine Terminal (EMT); (4) Venoco completed emergency repairs to the Pier 421-2 caisson; and (5) Project alternatives and cumulative projects have changed. The CSLC staff determined that these changes necessitated the preparation of a new Project EIR.

1.1 Project Components

As currently proposed by Venoco, resumption of production has several components:

- Reactivation of oil well 421-2 on Pier 421-2, piping of oil production to the EOF for processing, and decommissioning of Pier 421-1 (currently, Wells 421-1 and 421-2 are both shut-in and equipped with subsurface safety valves and packers);
- Installation of new, or modifications to existing, pipelines and power cables; and
- Minor modifications to the EOF and other upgrades as described below.

Table 1-1. Ellwood Area Oil & Gas Facilities and Relationship to Proposed Project

Facility	Location	Role in Ellwood Area Production	Relationship to Lease PRC 421
Ellwood Onshore Facility (EOF)	City of Goleta, 7979 Hollister Ave., 0.5 miles northwest of Lease PRC 421 (4.5 acres)	The EOF processes oil/water emulsion received from Platform Holly using a crude-oil processing system to remove water and gas from the emulsion by preheating in heat exchangers then introducing the emulsion into one of two heater treaters. Gas is sweetened through removal of H ₂ S. After treatment at the EOF, oil and treated gas are transmitted via Line 96 to the Plains Pipeline, L.P. (PPLP) Coastal Pipeline at Las Flores Canyon (LFC), then transported through the PPLP Coastal Pipeline to refineries. Produced water is injected into well WD-1.	As proposed, Venoco would use the EOF to process oil produced from Lease PRC 421 (an alternative that would process the oil on Pier 421-2 will be analyzed in the EIR). Produced water from PRC 421 would be injected into well WD-1. Section 1.1.4 below provides more details of the EOF modifications.
Line 96	City of Goleta and unincorporated Santa Barbara County	The Line 96 Modification Project, approved by the County and City of Goleta in 2011, is in operation; the 6-inch-diameter pipeline delivers oil and treated gas from the EOF approximately 8.5 miles to an interconnection with the PPLP Coastal Pipeline at LFC.	Line 96 would be used to transport the proposed Lease PRC 421 production from the EOF to the PPLP Coastal Pipeline at LFC.
Ellwood Marine Terminal (EMT)	Unincorporated Santa Barbara County, south and east of Goleta, less than 1 mile west of Coal Oil Point.	The EMT was previously used to transport both production from Platform Holly and historic Lease PRC 421 production. Barging has now ceased and Venoco recently applied to the County to decommission the on- and offshore facilities (2013).	No role in the proposed Project.
Platform Holly	Offshore on State Lease PRC 3242, in the Santa Barbara Channel, about 1.9 miles southwest of Coal Oil Point.	Platform Holly produces oil and gas from offshore wells. Subsea pipelines transport oil/water emulsion and produced gas to the EOF for processing.	The platform has no direct role in the proposed Project. Oil produced from PRC 421 would commingle with oil from Platform Holly within the EOF and then be sent through Line 96 to LFC.

1.1.1 Pier 421-2

Well 421-2 would be returned to service as an oil production well. For the well to function safely, a number of upgrades would be made, including the following.

- Production of Well 421-2 would require installation of a new downhole electric submersible pump (ESP). Venoco also proposes to locate three stainless steel electrical equipment enclosures at the wellhead: one to house the gross production meter; another to house a wellhead safety control panel (including high/low pressure pilots, hydraulic reservoir, and other necessary equipment); and a third to house the utility power transformer and electronics associated with the metering and communication of safety signals (including an auxiliary stop switch to be used by well servicing personnel and a tamper switch to alert staff at the EOF of vandalism). The size of the meter box is expected to be roughly 40 cubic feet; the wellhead safety control panel and third electrical box are each expected to measure 36 cubic feet. In addition, a surveillance camera would be mounted on Pier 421-2 to monitor the piers. The live video feed would be displayed in the EOF control room.
- New wood-plank decking and replacement handrails would be installed around the perimeter of the deck for safety and aesthetic purposes.
- Because the seaward facing wall of the caisson of Pier 421-2 was repaired under emergency permits in 2011, no additional improvements to the pier or caisson are being proposed as part of the Project.

1.1.2 Pier 421-1

Well 421-1 was historically used as a water and gas injection well during past production of PRC 421. Since the proposed Project includes the separation of water and gas occurring within the EOF, no facilities would be required on Pier 421-1 and the pier would be decommissioned. Decommissioning would include complete removal of the existing pier structure and shut-in well, site cleanup including soil remediation, and restoration of the beach and seawall supporting the existing access road to Pier 421-2.

1.1.3 Pipelines and Power Cables

Existing Pipeline Enhancement

An existing 6-inch outer-diameter pipeline currently connects Lease PRC 421 to Line 96. The line extends from the PRC 421 piers along a Venoco right-of-way (ROW) approximately 1,300 feet along the old seawall to a point just south of the 12th tee of the Sandpiper Golf Course, turns north into the Platform Holly pipeline ROW, and extends another 500 feet to the edge of the EOF (Figure 1-1). The pipeline connects to the Line 96 pipeline at a valve box located on an easement granted to Venoco from Sandpiper Golf Course that lies just outside the limits of the EOF parcel, south of the heliport.

The current condition of the 6-inch pipeline is uncertain. The pipeline is wrapped and cathodically protected against external corrosion. After the 6-inch pipeline leaked in

1994, the pipeline was repaired and hydrotested; however, the pipeline has not been used since the 1994 shut-in. The existing 6-inch pipeline would be hydrotested to 100 pounds per square inch (psi) and internally lined with a new plastic coating. The 6-inch pipe would be protected against external corrosion by enhancing the impressed current cathodic protection system on the Platform Holly pipelines to include the Lease PRC 421 6-inch shipping line.

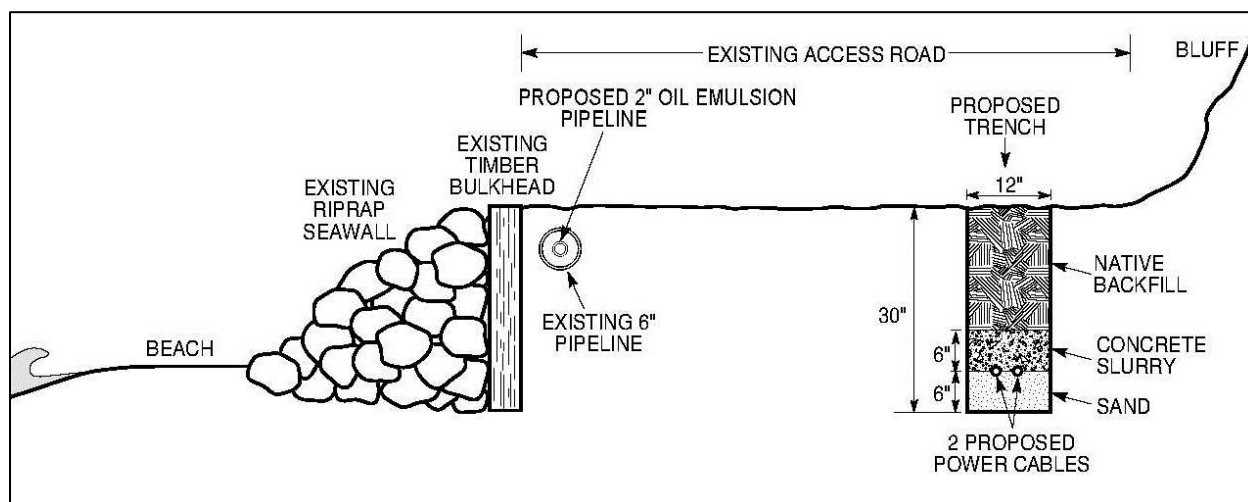
Proposed Pipeline

- Installation and operation of a single new 2-inch pipeline and upgrades to the existing 6-inch pipeline to convey oil and water emulsion to the EOF for separation. This would require redirecting the pipeline connection from the Line 96 valve box near the heliport and install a new pipeline to a new meter in the EOF (approximately 200 feet of new pipeline).

Electric Cables

Electricity would be provided to Pier 421-2 via two cables buried within a 30-inch-deep, 12-inch-wide, 2,500-foot-long trench located within the easement through Sandpiper Golf Course and down the dirt access road (Figure 1-2). The ESP at Well 421-2 would receive power through a buried and armored 200-kilovolt ampere (KVA) power cable with 1,100 volts of alternating current (VAC). In addition, a smaller 480 VAC cable would be installed to provide electrical power for metering, well instrumentation, and control systems. A utility power receptacle and an integral communication cable for data transfer would also be installed. The delivery voltage of the utility power would be 480 volts (V), and a small step-down transformer would be installed in the Well 421-2 electrical panel to drop the voltage down to 120V. The utility power outlet would be located inside of the power panel, and would be a heavy duty, 20 ampere "Arktite" type of plug receptacle.

Figure 1-2. Existing Access Road and Proposed Pipeline-Power Cable Corridor



1.1.4 Modifications at the EOF

The proposed Project would include processing of oil from Lease PRC 421 at the EOF. The Project would require the following modifications at the EOF:

- Installation of an electrical motor control panel, transformer, and power cable connections at the EOF. The power cable connections would occur within existing conduits within the EOF. The electrical motor control panel will use the existing Remote Monitoring System in the EOF control room and the EOF control room would be used to display the live video feed from the security surveillance camera mounted on Pier 421-2. The transformer would be installed on a small (approximately 2 feet by 4 feet) equipment foundation that would be located at the southeast corner and adjacent to the existing electrical switchgear building within the EOF. Two new electrical conduits would run through the electrical switchgear building.
- Installation of an enclosed meter (5 feet by 2 feet) located within the EOF at the existing pig launchers in the south part of the plant. Once through the meter, oil would tie-in at the pig launchers and commingle with Platform Holly oil and processed through the plant before it is transported through Line 96.

1.2 Construction Procedures

The EIR will provide specific construction details of the Project including construction schedules, staging and site access, construction on the caissons, installation details for the pipelines and power cable, installation details of equipment within the EOF, and decommissioning details of Pier 421-1. A majority of this work will occur within the jurisdiction of the City of Goleta.

1.3 Operation, Maintenance, and Safety Controls

1.3.1 Wells 421-2 & 421-1

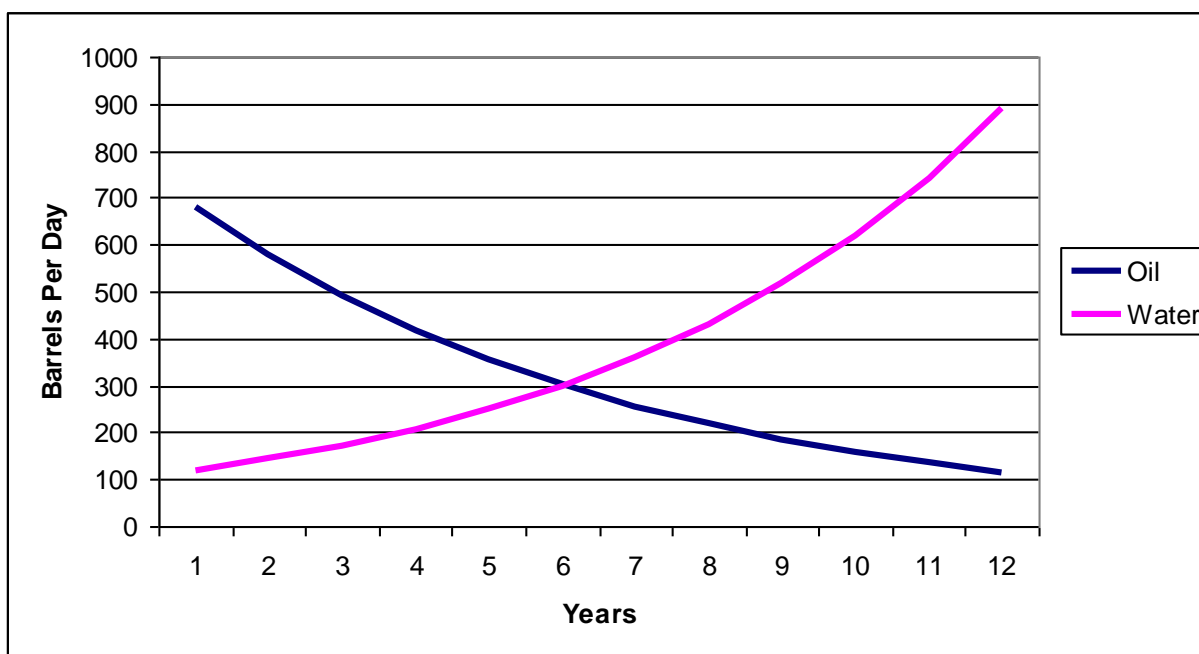
Operational Procedures, Volumes, and Throughput

The EOF is already equipped with the oil-water separation, treatment, and discharge of produced water systems necessary to treat oil produced from Pier 421-2. Oil would be sent to LFC via the new Line 96 Pipeline, and separated water would be discharged into the well that the EOF currently uses for disposal of Platform Holly's produced water (WD-1). Although existing EOF throughput levels would increase, no substantial physical modifications of existing systems at the EOF would be necessary beyond the control system improvements as described above. The increased throughput levels are projected to remain below the operating level currently allowed under Permit 07904 from the Santa Barbara County Air Pollution Control District.

Venoco has estimated that based on current projections, the productive life of Well 421-2 would be approximately 12 years. The gas production rate, which was too small to measure during tests of Well 421-2 in 2001-02, is not expected to exceed 70,000 cubic feet per day. Figure 1-3 shows that production is expected to average no more

than 700 BOPD in the first year (although maximum daily production could reach 1,000 BOPD) and taper off to approximately 100 BOPD by the last year of production, at which point Venoco estimates that water production would increase to nearly 900 BOPD making the Project economically infeasible.³ However, the price of oil may dictate that the Project would continue to be economically feasible beyond the Applicant's expectation. During the final years of previous production from Lease PRC 421, in the late 1980s/early 1990s, the average production rate was between 50 and 60 BOPD. Therefore, while Venoco has proposed that this Project would have a productive life of 12 years, historic data suggest that production could continue beyond that time.

Figure 1-3. Projected Average Production from Lease PRC 421



Maintenance and Safety Systems

The Project includes many levels of equipment requirements, testing, maintenance, and safety measures to prevent accidental releases to the coastal environment. The main safety monitoring system for Lease PRC 421 would be located at the EOF and would include monitors at 421-2. In addition to the monitoring system, other safety measures are included in all aspects of the Project from pipelines to the drilling rig. The Project will include inspection and security programs, oil spill response capabilities, fire prevention and preparedness plans, and re-pressurization monitoring. Safety and maintenance measures associated with the Line 96 pipeline would be used during transportation of Lease PRC 421 oil to the PPLP Coastal Pipeline.

³ Water breakthrough is expected to occur shortly after the start of continuous production; the water cut is expected to increase during the production life of the well until the well is no longer economically viable to produce.

Future Plans and Abandonment of Lease PRC 421

CSLC lease conditions require Venoco to decommission all facilities associated with Lease PRC 421 at the end of the production life and restore the area to its natural condition. Since water and gas disposal would occur from the EOF and not on Pier 421-1, the decommissioning of Pier 421-1 would occur as part of the proposed Project (see Section 1.1.2 above). The future decommissioning of Pier 421-2 would be subject to appropriate local, State, and Federal regulations that are in effect at the time of abandonment, and specifics on decommissioning and hazardous materials investigations would be addressed in an Abandonment and Restoration Plan submitted to the CSLC, CCC, and City of Goleta. Additional environmental review would occur prior to decommissioning.

Future decommissioning of Pier 421-2 would include complete removal of the pier and all associated facilities, including wells, production equipment, the ESP, and electrical equipment. Project decommissioning may also involve removal of the seawall, beachside access road, pipelines and power cables within the access road, and the transformer and electrical lines connecting Lease PRC 421 to the EOF, and the potential abandonment in place of the 1,800 feet of 6-inch pipeline connecting Lease PRC 421 to the EOF. Site cleanup including soil remediation would also be required as several hydrocarbon leaks are known to have occurred in 1994, 2000, and 2001, and hydrocarbon contamination has been identified at the pier approach area of Pier 421-2.

1.3.2 Line 96

Throughput and Capacity

The newly operated Line 96 Pipeline to LFC will carry the entire throughput that had previously passed through the EMT. In the first year, the Project would contribute a maximum of 1,000 BOPD from Lease PRC 421 to the EOF where it would commingle with Platform Holly oil production before transported through the Line 96 pipeline. PRC 421 production would taper off after the first year as projected in Figure 1-3 above.

Operation of Line 96 Pipeline Extension

The new Line 96 pipeline was constructed in 2011 and began operation in early 2012. Oil produced from Lease PRC 421 would flow with Platform Holly oil to the PPLP Coastal Pipeline at LFC until Lease PRC 421 production stops, which is estimated to be in 2025. Line 96 would operate until Platform Holly oil production ended, which is estimated to be in 2040.

The Line 96 oil pipeline is owned and operated by Ellwood Pipeline, Inc., a subsidiary of Venoco. Oversight, management, and routine maintenance of the pipeline would be undertaken by current staff and contractors of Ellwood Pipeline, Inc. who were associated with the now abandoned Line 96 pipeline to the EMT.

No oil storage facilities are available at the PPLP Coastal Pipeline location for any oil transported through the Line 96 pipeline. If, for any reason, the PPLP Coastal Pipeline

system downstream of the EOF were not operating, the available working level in the two 2,000-barrel (bbl) tanks at the EOF would dictate how long the Applicant could operate before diverting or curtailing production from Platform Holly and PRC 421. Any interruption in the operation of the Line 96 pipeline or the PPLP Coastal Pipeline would require Venoco to interrupt production at Lease PRC 421, as well as Platform Holly, until the pipelines become available again.

The Line 96 pipeline will be monitored and operated from Venoco’s EOF and could be remotely monitored and shutdown from the PPLP central control facility in Houston. Both of these facilities provide for continuous monitoring 24 hours per day. No additional positions to the existing EOF staff will be required as a result of the Project.

2.0 RESPONSIBLE AND COORDINATING AGENCIES/PERMITTING

In addition to action by the CSLC, the Project may also require permits and approvals from other reviewing authorities and regulatory agencies that may have oversight over aspects of Project activities, including but not limited to the following.

Local & Regional	City of Goleta Santa Barbara County Air Pollution Control District (SBCAPCD)
State	California Coastal Commission (CCC) California Department of Wildlife (CDFW) California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) California Central Coast Regional Water Quality Control Board (RWQCB)
Federal	U.S. Army Corps of Engineers (USACE)

A Development Plan application will be required from the City of Goleta for those portions of the project that involve onshore facilities above the Mean High Tide line, including the pier, access road, pipelines, interconnection with Line 96, and EOF. A revised Development Plan may also be required for Line 96 throughput increase (Case No. 06-037-DP).

3.0 SCOPE OF THE EIR

Pursuant to State CEQA Guidelines section 15060, the CSLC staff conducted a preliminary review of the proposed Project and determined that an EIR was necessary based on the potential for significant impacts resulting from the proposed Project. A preliminary list of environmental issues and alternatives to be discussed in the EIR is provided below. Additional issues and/or alternatives may be identified at the public scoping meeting, and in written comments, as part of the EIR process. The CSLC invites comments and suggestions on the scope and content of the environmental analysis, including the significant environmental issues, reasonable range of alternatives, and mitigation measures that should be included in the EIR.

The CSLC uses the following designations when examining the potential for impacts according to CEQA issue areas.

Potentially Significant Impact	Any impact that could be significant, and for which feasible mitigation must be identified and implemented. If any potentially significant impacts are identified but cannot be mitigated to a less than significant level, the impact would be <i>significant and unavoidable</i> ; if any potentially significant impacts are identified for which feasible, enforceable mitigation measures are developed and imposed to reduce said impacts to below applicable significance thresholds, the impact would be <i>less than significant with mitigation</i> .
Less Than Significant Impact	Any impact that would not be considered significant under CEQA relative to the applicable significance threshold, and therefore would not require mitigation.
No Impact	The Project would not result in any impact to the resource area considered.
Beneficial Impact	The Project would provide an improvement to an issue area in comparison to the baseline information.

The estimations of impact levels used for this NOP are based solely on previous documents and do not preclude findings of significance that would be made during the preparation of the EIR, including findings that could change the significance of an impact and how it would need to be addressed within the EIR. The EIR will provide specific significance thresholds within each issue area for the environmental analyses.

3.1 EIR Alternatives Analysis

In addition to analyzing the potential impacts associated with the proposed Project, in accordance with the State CEQA Guidelines, an EIR must:

...describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives (§ 15126.6).

The State CEQA Guidelines also require that the EIR evaluate a “no project” alternative and, under specific circumstances, designate an environmentally superior alternative from among the remaining alternatives. Alternatives will be identified as a result of the environmental analysis and on information received during scoping. The EIR will:

- provide the basis for selecting alternatives that are feasible and that would reduce significant impacts associated with the proposed Project;
- provide a detailed explanation of why any alternatives were rejected from further analysis; and
- evaluate a reasonable range of alternatives including the “no project” alternative.

The 2007 Draft EIR provided several alternatives that were considered infeasible or had no greater environmental benefits over the proposed Project or other alternatives and were eliminated from full evaluation. These alternatives included the following:

- Drilling from the EOF
- Drilling from Platform Holly
- Condensed Production Schedule
- Offshore Oil Processing on Platform Holly
- Transportation of Production By Truck
- No Project Alternative with Pressure Testing
- Recommissioning Using Historic Production Methods Alternative

The EIR will re-evaluate the feasibility of the alternatives identified above. In addition, alternatives to be evaluated in the EIR include the following.

- **Oil Processing on Pier 421-2 Alternative.** Under this alternative, Venoco would need to install a new Gas-Liquid Cyclone Separator (GLCS) at Pier 421-2 to separate produced gas and water from oil. There was no detectable gas production when Well 421-2 produced in 2001 for a short-term period to conduct emergency depressurization. However, the GLCS is designed based on typical properties for California oils at the well depth, for which the gas-oil ratio is estimated to be 100 standard cubic feet per stock tank barrel (SCF/STB). The GLCS is a compact vertical vessel with a tangential nozzle located near the top that subjects incoming fluids to a hydraulically created vortex and centrifugal forces, causing the heavier liquid particles to separate and thus obtaining split liquid and gas streams. The well on Pier 421-1 would be returned to service as a water and gas injection well using existing injection equipment to reinject and dispose of water and gas that are separated from the gross fluid produced out of Well 421-2. The new ESP in Well 421-2 would provide enough pressure to inject up to 1,000 BWPD into Well 421-1. To prevent reverse flow from the well, Venoco would need to install a flow safety valve (FSV) as part of the wellhead piping. New wood-plank decking would be installed for safety and aesthetic purposes. Oil Production from PRC 421-2 would be directly transported into Line 96 at a tie-in point just outside of the EOF.
- **Re-injection at Platform Holly Alternative.** Under this Alternative, production would resume at Lease PRC 421 as described above under the Oil Processing on Pier 421-2 Alternative; however, produced water and gas would be sent to Platform Holly, via the EOF, for re-injection, and Pier 421-1 would be decommissioned and removed on an accelerated schedule.
- **No Project Alternative.** Under the No Project Alternative, the Lease PRC 421 wells would remain shut-in and production would not take place at Lease PRC 421 from the surf-zone facilities. Given current conditions—Lease PRC 421 is shut-in and all other wells that once tapped the reservoir are abandoned—there is no active well penetrating the reservoir to insert and operate pressure-testing

equipment; consequently, there is no mechanism to conduct pressure testing of the reservoir to determine the extent of possible pressure build-up. If the wells remain shut-in with the No Project Alternative and a release of oil occurred in the vicinity of Lease PRC 421, oil spill response would occur once the release was reported and an investigation by the State would commence to find the cause. The determination of the cause would occur at the time of a spill and would depend on the facts involved with such an incident. As noted above, possibilities in the event of a release may include oil coming from a leak from an old, improperly abandoned well or from a natural seep as a result of naturally occurring re-pressurization; therefore, it is difficult to monitor such possibilities.

3.2 Currently Identified Potential Environmental Impacts

Based on initial internal scoping, the Project is not anticipated to affect the following environmental factors identified in State CEQA Guidelines Appendix G (Environmental Checklist Form), which could therefore be eliminated from consideration in the EIR.

- Agriculture and Forestry Resources
- Population and Housing

The following provides information on the currently identified issues that may have potentially significant environmental effects.

3.2.1 Geological Resources

The EIR will evaluate the potential geologic hazards that could result in impacts to people or structures over the Project's approximate 12-year production horizon. The geologic impacts of the Project would be confined primarily to the Project study area and would be associated with seismic hazards; seismically induced hazards including earthquakes, ground shaking, slope failure and landslides, and tsunamis; and coastal-process-related hazards including erosion and coastal bluff instability. Potential geologic impacts associated with the Line 96 pipeline (e.g., seismically related potential for pipeline rupture) within the secondary study area were fully addressed and considered as part of the certified Line 96 Modification Project EIR (Santa Barbara County 2011) and will be incorporated by reference.

3.2.2 Safety

The EIR will address potential upset conditions during Project construction and operation that could result in release of oil or hazardous materials, fire, explosion or other conditions that could be hazardous to the public and environment. A quantitative risk assessment (QRA) that has been conducted for certain Ellwood area facilities will be incorporated in the EIR both as background for issues affecting the proposed Project and for use in assessing the risk associated with certain Project alternatives. Detailed analyses of impacts of upset conditions on specific resources will be addressed in their respective sections (e.g., Marine Biological Resources). Potential safety effects of the Project and alternatives will be based on a change from existing conditions.

3.2.3 Hazardous Materials

The EIR will address the handling, storage, and disposal of hazardous materials and the potential for the Project to release hazardous materials (e.g., petroleum products, solvents, pesticides, herbicides, paints, metals, asbestos, and otherwise regulated chemical materials) that could result from the construction and operation of primary Project components, including decommissioning of Pier 421-1. This analysis will also briefly discuss area resources that could be affected by the operation of secondary Project components (existing and approved facilities not proposed for modification) such as the operation of the Line 96 pipeline, particularly as related to accidental oil release. Other sections of the EIR (e.g., Safety and Hydrology, Water Resources, and Water Quality) will analyze the potential for upset conditions that could result in a release of oil and hazardous materials and potential impacts resulting from releases of oil-related materials, such as contaminated sediment or a crude oil spill.

3.2.4 Air Quality

The EIR will summarize the local climate and current air quality conditions in the Project vicinity, as well as the regulatory setting related to air quality in the Project area. Air quality impacts associated with the Project, Project alternatives and cumulative impacts will also be discussed. The analysis of air quality impacts will follow guidance provided by the SBCAPCD Scope and Content of Air Quality Sections in Environmental Documents (October 2006) and the State CEQA Guidelines. Air quality impacts associated with recommissioning Lease PRC 421 are expected as a result of Project construction and operation. Construction emissions would include particulate and combustion emissions associated with grading and trenching for the purpose of placing a new 2-inch pipeline, repairing an existing 6-inch line, installation of new power cables, combustion emissions from travel on access roads, and operation of the drill rig during installation of the ESP. These emissions were estimated using emission factors and equipment estimates from Venoco's Recommissioning Plan for Lease PRC 421, May 2004. Emissions during Pier 421-1 removal would also be evaluated. Operational emissions from primary Project components would consist primarily of fugitive emissions from valves, pressure relief devices on the separators, piping components, well heads, and well cellars; secondary operational emissions would consist primarily of fugitive emissions related to pipeline transport. The EIR will also analyze the Project's impact on greenhouse gases (GHGs) and climate change.

3.2.5 Hydrology, Water Resources, and Water Quality

The EIR will address potential impacts on marine and freshwater hydrology, water resources, and water quality resulting from recommissioning Lease PRC 421. The environmental setting focuses on the most relevant characteristics of existing marine and onshore water resources in the Project vicinity. Issues such as offshore currents, wave action and marine and freshwater quality are important in understanding the effects of a possible accidental release of oil or other hazardous materials on these resources. The impact analysis will evaluate the potential effects of the Project and alternatives, including cumulative impacts, and identify potential mitigation measures.

This section will not address water use as the Project would only have one-time limited fresh water use for pipeline flushing. This section will rely on information from various agencies including Santa Barbara County, RWQCB, National Oceanic and the Atmospheric Administration (NOAA), and Scripps Institute of Oceanography.

Erosion and sedimentation from short-term construction activities, which would last for approximately 45 days, include trenching, replacement, and repair of the 6-inch pipeline beneath the existing access road, and could adversely affect water quality in Bell Canyon Creek. However, impacts would be reduced through the employment of standard erosion and sediment control BMPs which would be outlined in the Erosion and Sediment Control Plan, required by the City of Goleta Grading Ordinance, including watering of disturbed soils, silt fences, and temporary sediment barriers. In addition, Venoco would be required to develop a Storm Water Pollution Prevention Plan for construction activities and obtain a General Construction Permit from the RWQCB to prevent contaminated runoff from the construction site, which could contain trace metals or small amounts of petroleum hydrocarbons, from entering Bell Canyon Creek.

3.2.6 Biological Resources: Marine and Terrestrial

The EIR will describe the marine resources in the Project vicinity and the potential impacts the Project could have on those resources. The Environmental Setting section will describe marine resources in the Southern California Bight because a large oil spill could have wide-ranging environmental effects throughout Southern California waters, and not just in the Santa Barbara Channel. The section will also describe the specific marine resources found in the immediate Project area because those resources would be the most vulnerable to impacts from the Project. Operational impacts would be limited to accidents including an oil spill.

The terrestrial biological resources section will describe local habitats, communities, and sensitive species in the Project vicinity and evaluate the impacts that implementation of the Project or Project alternatives may have on these resources. The analysis will focus on terrestrial biological resources that could be affected by construction and operation of Project components, including operation of Well 421-2 and the decommissioning of Pier 421-1.

3.2.7 Land Use, Planning, and Recreation

The EIR will provide details on existing land use, planning, and recreation conditions in the Project vicinity, outline applicable land use plans and policies, and will summarize potential land use, planning, or recreation impacts associated with the Project. Information in this section will be primarily based on the: City of Goleta General Plan/Coastal Land Use Plan (GP/CLUP) Land Use, Open Space, and Conservation Elements; City of Goleta Coastal Zoning Ordinance; City of Goleta GP/CLUP EIR; and Santa Barbara County Comprehensive and Coastal Plans.

Project construction could create short-term (3 to 6 months) episodic impacts to public recreation due to disruption of ongoing recreational activities. The project contains

BMPs such as roping off construction areas, directing beach users around the site, and removal of equipment from the beach to minimize impacts to recreation activities during construction and pier removal. Impacts would occur if oil spilled during Project operations, which would conflict with several policies of the Goleta GP/CLUP and California Coastal Act. Recreational impacts from accidental oil releases could preclude the use of beach areas and associated activities. The degree of impact is influenced by many factors including, but not limited to, spill location, spill size, type of material spilled, prevailing wind and current conditions, the vulnerability and sensitivity of the resource, and response capability.

3.2.8 Public Services

The EIR will characterize fire protection and emergency response associated with the Project, including Venoco's existing fire protection and emergency response systems and the ability of locally provided and funded fire protection and emergency response services, such as the Santa Barbara County Fire Department and County Office of Emergency Services, to respond to incidents at Lease PRC 421.

3.2.9 Transportation and Circulation

The EIR will describe both onshore and offshore transportation systems in the Project vicinity and the impacts of the Project and alternatives on roadway transportation and circulation. The analysis will focus on area roadways most likely to be affected by construction and operation of Project components, and transportation of oil via onshore pipeline. There is currently little to no regular traffic associated with Lease PRC 421, as it is currently not under production. Existing traffic is limited to daily security patrols, which also provide security to the EOF. Future traffic generation associated with Project implementation would consist of construction- and operation-related traffic.

3.2.10 Noise

The EIR will describe the noise environment in the Project vicinity, and potential impacts to the noise environment associated with Project implementation. A noise impact would be considered significant if noise levels from Project operations exceeded local policies and noise standards.

3.2.11 Aesthetic/Visual Resources

The EIR will describe the onshore and offshore visual environments from a local (Ellwood area) and regional context and address the potential for the Project to cause significant impacts on visual resources in the Project vicinity. Potential impacts to visual resources created by the Project and Project alternatives will be based on a change from existing conditions. Impacts to aesthetics and visual resources will be determined by identifying the visual sensitivity and visual character of the environment. Visual impacts will then be evaluated in the context of the character of these views.

3.2.12 Cultural, Historical, and Paleontological Resources

The EIR will identify cultural, historical, and paleontological resources in the Project area, including Lease PRC 421 itself, and will evaluate impacts to such resources that would potentially result from the development of the Project. Impacts to cultural resources can occur by direct or indirect impacts. Direct impacts result from ground disturbances directly and indirectly caused by facility operation or maintenance. Indirect impacts result from increased access to archaeological sites (e.g., construction employees participating in unauthorized artifact collecting). Most Project construction would take place on artificial fill along the seawall access road, on previously graded and developed areas and on existing piers.

3.2.13 Energy and Mineral Resources

The EIR will describe energy and mineral resources such as natural gas, oil, and sand and gravel in the Project vicinity and will evaluate the impacts that the Project and its alternatives may have on these resources. The analysis will focus upon area energy and mineral resources that could be affected by the construction and operation of Project components, including the construction and operation of Well 421-2.

3.3 Special Impact Areas

3.3.1 Cumulative Impacts

The State CEQA Guidelines require an EIR to discuss the cumulative impacts of a project when the project's incremental effect is "cumulatively considerable" (§ 15130). A cumulative impact is created through a combination of the project being analyzed in an EIR and other projects in the area causing related impacts. The EIR will:

- define the geographic scope of the area affected by cumulative effects ("Cumulative Projects Study Area"), which for the Project is presently defined as the vicinity of Lease PRC 421 and offshore marine waters of the eastern portion of the Santa Barbara Channel;
- discuss the cumulative impacts of the Project, in conjunction with other approved and reasonably foreseeable projects in the study area; and
- identify, if appropriate, feasible measures to mitigate or avoid the Project's contribution to cumulative effects.

3.3.2 Growth-Inducing Impacts

CEQA requires a discussion of the ways in which a proposed project could foster economic or population growth, including the construction of additional housing, in the project's vicinity. Under State CEQA Guidelines section 15126.2, subdivision (d), a project is growth-inducing if it fosters or removes obstacles to economic or population growth, provides new employment, extends access or services, taxes existing services, or causes development elsewhere. The EIR will contain a discussion of the potential growth-inducing impacts of the proposed Project.

3.3.3 Socioeconomics and Environmental Justice

The CSLC adopted an Environmental Justice Policy in 2002 to ensure equity and fairness in its own processes and procedures (see www.slc.ca.gov, under the “Information” tab and “Policy Statements” link). This Policy stresses equitable treatment of all members of the public and commits to consider environmental justice in the CSLC’s processes, decisions and programs. The policy is implemented, in part, through identification of, and communication with, relevant populations that could be adversely and disproportionately impacted by CSLC projects or programs, and by ensuring that a range of reasonable alternatives is identified that would minimize or eliminate environmental impacts affecting such populations.

The Environmental Justice section of the EIR will assess the Project’s consistency with the CSLC’s Environmental Justice Policy, and analyze the distributional patterns of high-minority and low-income populations on a regional basis. The consistency analysis will focus on whether the Project would have the potential to affect area(s) of high-minority population(s) and low-income communities disproportionately.



April 29, 2013

SENT VIA EMAIL

CITY COUNCIL

Roger S. Aceves
Mayor

Michael T. Bennett
Mayor Pro Tempore

Edward Easton
Councilmember

Jim Farr
Councilmember

Paula Perotte
Councilmember

CITY MANAGER
Daniel Singer

Eric Gilles, Assistant Chief
Division of Environmental Planning and Management
California State Lands Commission
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

RE: Revised PRC 421 Recommissioning Project (City Case 07-131)
NOP Comments

Dear Mr. Gilles:

The Venoco, Inc. (the applicant) PRC 421 Recommissioning Project (Project) is located within the jurisdiction of the California State Lands Commission (CSLC) and the City of Goleta (City) and generally includes the resumption of oil production at the offshore Oil and Gas Lease PRC 421 and processing at the Ellwood Onshore Facility (EOF). Resumption of production has several components such as reactivating existing wells Pier 421-2 and decommissioning of Pier 421-1, installation of new, or modified pipelines and power cables, and other upgrades.

The City and CSLC and other regulatory agencies determined and agreed, pursuant to a Memorandum of Understanding, that the CSLC is acting as the Lead Agency for the Project pursuant to the California Environmental Quality Act and the City is a Responsible Agency for the purpose of the Environmental Impact Report (EIR). The EIR is intended to be the environmental analysis required for issuance of any possible Project permits by the CSLC and Responsible Agencies, most notably the City.

In 2007, CSLC released a Draft EIR for the Project that was circulated for public review. As a result of major changes to Project details that have occurred since the release of the Draft EIR (State Clearinghouse No. 2005061013), CSLC staff suspended work. Venoco recently submitted a revised Project application to the CSLC. The CSLC staff, in consultation with other agencies, including but not limited to the City of Goleta staff, determined that these changes necessitated the preparation of a new Notice of Preparation (NOP)

and EIR for the Project.

Based on our review of the NOP, the City provides the following comments to be included and/or addressed in the Draft EIR:

1) Figure 1-1 (Page 4 of 20)

- a. Please include the City, CSLC, and California Coastal Commission jurisdictional boundaries on this figure in the Draft EIR.

1-1

2) 1.0 Physical Description of Proposed Project (Page 5 of 20)

- a. Please clarify in the project description and throughout the Draft EIR, the portions of the project which are in each discrete jurisdiction (CSLC and City). Ideally, the EIR would be organized in such a way that the reader can clearly and succinctly identify the portion of the Project within the City. As a reminder, the City's Planning Commission will ultimately be considering the portion of the Project within the City and will be relying on a clearly identified and adequately described environmental setting, impacts, and mitigations from which they will be basing their related discretionary actions.

1-2

3) Table 1-1 (Page 6 of 20)– Line 96 and Relationship to Lease PRC 421 (Page 6 of 20)

- a. For EOF and Line 96 Facilities, the description under "Role in Ellwood Area Production" should be corrected as discussed below:

EOF: After the treatment at the Ellwood Onshore Facility (EOF), the oil is transmitted via Line 96 to the Plains Pipeline L.P. (PPLP) Coastal Pipeline at Las Flores Canyon (LFC), and then transported through the PPLP Coastal Pipeline to refineries. [Suggested Additional Text]: *The treated Gas is transmitted through a 6" Sales Gas Pipeline to the Gas Company's transmission line at the Odorant Station about half a mile east of EOF.*

1-3

Line 96: The line 96 Modification Project, approved by the County and City of Goleta in 2011, is in operation; 6-inch-diameter pipeline delivers oil from the EOF approximately 8.5 miles to an interconnection with the PPLP Coastal Pipeline at LFC. [Suggested Additional Text]: *The treated Gas is transmitted through a 6" Sales Gas Pipeline to the Gas Company's transmission line at the Odorant Station about half a mile east of EOF. Line 96 does not transport the treated gas from EOF.*

4) 1.1.3 Pipelines and Power Cables (Existing Pipeline Enhancement) (Page 7 of 20):

- a. Please clearly describe in the Draft EIR what the current pipeline is wrapped in and what material it is constructed of.

1-4

5) 1.1.2 Pier 421-1

- a. As stated in the NOP, 421-1 decommissioning is part of this project. Fully describe decommissioning activities and follow-up site restoration in the Project Description so that it can be properly analyzed in the EIR. Site plans and maps are also necessary.

1-5

6) 1.1.3 Pipelines and Power Cables (Proposed Pipelines) (Page 7 of 20)

- a. The EIR should include a description of how the two new 2-inch flowlines would be installed inside the new double-walled pipeline and whether or not the integrity of the 2-inch flowline is sufficient for this use.
- b. The Line 96 vault (not valve) box is located northwest of the EOF in a gravel access road, not south of the EOF. There may be a discrepancy with the valve box reference and we are guessing that the correct reference is the Platform Holly 6+ pipeline valve box, which is located south of the EOF. Please correct or clarify in the Project Description.
- c. Explain the relationship between the Line 96 vault box, the Holly 6+ pipeline valve box and the proposed 421 pipeline. Clearly describe where the pipelines start and stop. Include a map of these important EOF connection points. Also explain why a new meter is required at the EOF as opposed to a new meter at the Platform Holly valve box.

1-6

7) 1.2 Construction Procedures (Page 9 of 20)

- a. The EIR should clearly describe the condition of the existing access road from the EOF to the piers and the fact that environmentally sensitive coastal habitats are adjacent to the EOF and the access road. This section should state whether or not the road will require repairs as part of the Project. Staging locations should also be mapped and described.

1-7

8) 1.3.1 Wells 421-2 & 421-1 (Pages 9-11 of 20)

- a. Insert ~~%~~Modifications at the EOF and~~+~~before ~~%~~Wells~~+~~in the header to section 1.3.1
- b. When describing operational procedures, volumes, and throughput, please describe the location of WD-1 in relationship to PRC 421. Include a map of WD-1.
- c. Insert ~~%~~and safety monitoring systems described in the following section~~+~~after ~~%~~Although existing EOF throughput levels would increase, no substantial physical modifications of existing systems at the EOF would be necessary beyond the control system improvements as described above~~+~~.

1-8

9) 3.1 EIR Alternatives Analysis

- a. Processing at Las Flores Canyon should be evaluated as an alternative in the Draft EIR.

1-9

10) 3.2.2 Safety

- a. Please include evaluation of the 421 to EOF pipeline in the risk or upset/safety analysis. | 1-10

11) 3.2.3 Hazardous Materials

- a. In the first sentence, please insert ~~%but~~ not limited to the ~~+between the words~~ ~~%including+~~ and ~~%decommissioning+~~. Also insert ~~%and~~ construction of new pipelines from the Pier to the EOF ~~+at the end of the first sentence.~~ | 1-11

12) 3.2.6 Biological Resources: Marine and Terrestrial

- a. Please change the last sentence of this section to read: ~~%The~~ analysis will focus on terrestrial biological resources that could be affected by construction and operation of Project components, including operation of Well 421-2, the decommissioning of Pier 421-1, changes to the EOF, and installation of new pipelines~~+.~~ | 1-12

13) 3.2.7 Land Use, Planning, and Recreation

- a. Include the City of Goleta General Plan Safety Element in the Land Use impact analysis. | 1-13

Thank you for your attention to our comments on the NOP. If you have any questions or comments regarding the City's comments, please do not hesitate to contact me at (805) 961-7551 or Sara Iza at (805) 961-7544.

Sincerely,



Anne Wells, Advance Planning Manager
City of Goleta

Cc: Jennifer Carman, Director, Planning and Environmental Review
Sara Iza, Associate Planner, Planning and Environmental Review
Alison Dettmer, Deputy Director, California Coastal Commission

County Of Santa Barbara



Chandra L. Wallar
County Executive Officer

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Executive Office

April 29, 2013

Mr. Eric Gillies
Assistant Chief
Division of Environmental Planning and Management
California State Lands Commission
100 Howe Avenue Suite 100-South
Sacramento, CA CA 95825

E-mail: ceqacomment@slc.ca.gov

RE: Revised PRC 421 Recommissioning NOP Comments

Dear Mr. Gillies:

Thank you for the opportunity to comment on the Revised PRC 421 Recommissioning NOP Comments. At this time, the County submits comments from the Planning and Development Department.

If you should have further questions, please do not hesitate to contact my office directly or Glenn Russell, Director, Planning and Development Department, at 805-568-2085.

Sincerely,

Chandra L. Wallar
County Executive Officer

Cc: Glenn Russell, Director, Planning and Development Department

Encl: Planning and Development Department comment letter



County of Santa Barbara Planning and Development

Glenn S. Russell, Ph.D., Director
Dianne Black, Assistant Director

April 26, 2013

Mr. Eric Gillies
Assistant Chief
Division of Environmental Planning and Management
California State Lands Commission
100 Howe Avenue Suite 100-South
Sacramento, CA CA 95825

RE: Revised PRC 421 Recommissioning NOP Comments

Dear Mr. Gillies:

Thank you for the opportunity to comment on the Revised PRC 421 Recommissioning Project Notice of Preparation (NOP). The County offers the following comments:

Section 1.0, Physical Description of the Proposed Project Description

1. The anticipated project life is approximately 12 years and possibly beyond depending upon production characteristics and economics. The structural integrity of the historic Pier 421-2 over the proposed 12 years and beyond raises concerns about potential failures and environmental consequences. If not already included, the EIR should analyze the long-term structural integrity of the pier and the consequences of its failure, taking into account the reasonable worst-case scenarios of wave erosion, tsunamis, seismic events and structural failure due to age. 2-1
2. Table 1-1 indicates that produced water from PRC 421 would be injected into onshore Well WD-1. It is not clear from the analysis provided in the previous project EIR whether use of Well WD-1 as a injection well has caused, or may cause, an increase in the fields pressure. The previous project description listed Well 421-1 as the well for re-injection of produced water. The EIR should provide a robust analysis to determine if water injection at Well WD-1 is linked to any re-pressurization issues with the field including all old P&A wells that may be at risk of re-pressurization. 2-2

3. The project description summary in Table 1-1 incorrectly states that Line 96 transports both oil and treated gas from the EOF. Line 96 transports crude oil alone, with only trace amounts of produced gas entrained in the crude oil. Gas is processed at the EOF and sold to SoCal Gas at an onsite utility station. 2-3
4. Table 1-1 as a point of clarification but of no consequence to project analysis, Venoco has withdraw its application from the County for demolition and reclamation of the EMT while it works out private property matters between Venoco and the landowner, UCSB. 2-4
5. Section 1.1.2, Pier 421-1 – The project description includes pier decommissioning, including soil remediation. The EIR should include a thorough analysis of the site remediation activities and safeguards to prevent any contamination associated with the pier decommissioning from entering the ocean environment. Because of its age, the pier structures should be evaluated for a full complement of potential hazardous materials, including PCBs, metals, PAHs, BTEX and other oil-related byproducts and constituents so that the remedial design is most protective of the environment. 2-5
6. Section 1.1.3, Pipelines and Power Cables – The existing PRC 421 pipeline as connects to the original Line 96 pipeline which has been decommissioned. 2-6
7. Section 1.1.3, Pipelines and Power Cables – When the PRC 421 pipeline was placed out of service in 1994, there should be a record(s) of whether it was purged and protected with any rust inhibitors. If known, that information should be presented in the Project Description and will be beneficial in the analysis of the pipeline’s integrity. 2-7

Section 2.0, Responsible and Coordinating Agencies/Permitting

1. The project description notes that a revised City of Goleta development plan may be required for the Line 96 throughput increase. The County of Santa Barbara also has a development plan for the majority of the pipeline (DVP-00000-00017). Line 96 was permitted as a common carrier pipeline and as such, additional sources of crude oil, such as Lease PRC 421, were contemplated in permitting the pipeline. Depending upon the final project configuration, the County development plan may also have to modified, but additional environmental review is not anticipated. 2-8

Section 3.0, EIR Alternatives Analysis

1. Section 3.1, EIR Alternatives Analysis – The Oil Processing on Pier 421-2 Alternative is a reiteration of the 2007 evaluated project and offers no apparent environmental benefits over the proposed project and should not be considered. Other project alternatives will become apparent during the course of environmental analysis and should be incorporated into the EIR for discussion or further analysis. 2-9
2. Section 3.2, Currently Identified Potential Environmental Impacts – Section 3.2.3 Hazardous Materials. This section and/or the Hydrology, Water Resources, and Water 2-10

Quality Section, should include the potential for impacts to the Devereux Slough located west of the project site.

3. Section 3.2, Currently Identified Potential Environmental Impacts – Section 3.2.4, Air Quality. The section states that the emission estimates will be based on emission factors and equipment estimates provided by Venoco in its 2004 Recommissioning Plan. Please ensure that both the equipment list and emission factors are still accurate, as nine years has passed since that project description was submitted. | 2-11

4. Section 3.2, Currently Identified Potential Environmental Impacts – Section 3.2.7, Land Use, Planning and Recreation. In considering the potential impact to recreational resources by an offshore oil release, please ensure that the maximum potential release volumes, along with the most adverse ocean conditions are factored into the release model so that potential impacts to County recreational resources downstream of the operations can be accurately assessed. | 2-12

5. Section 3.2, Currently Identified Potential Environmental Impacts – Section 3.2.9, Transportation and Circulation. Please ensure that all project-related traffic routes and volumes are described that affect the unincorporated area. | 2-13

If you have any questions or comments regarding this letter, or would like to discuss these issues further, please call Kevin Drude (805) 568-2519.

Sincerely,

Glenn S. Russell, Ph.D., Director

| cc: Chron File



**COUNTY OF SANTA BARBARA
COUNTY EXECUTIVE OFFICE**

Chandra L. Wallar
County Executive
Officer

OFFICE OF EMERGENCY MANAGEMENT

Michael W. Dyer
Interim Chief of
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April 29, 2013

Eric Gillies, Assistant Chief
California State Lands Commission
Division of Environmental Planning & Management
100 Howe Avenue – Suite 100 South
Sacramento, CA 95825

Re: Notice of Preparation of a Draft Environmental Impact Report and Notice of Public Scoping Meeting

Dear Mr. Gillies:

Venoco Inc. has applied to the CSLC to implement the Revised PRC 421 Recommissioning (Project) with the objective to return Oil and Gas Lease to full oil production. Your office is currently reviewing the proposed project as lead agency for CEQA in preparation for an Environmental Impact Report (EIR) to identify and address significant environmental issues, reasonable range of alternatives, and mitigation measure that should be included in the EIR.

The Public Scoping Process has been initiated to solicit public comment. This is an open process used for identifying significant environmental issues related to the proposed project. This process also allows an opportunity to identify appropriate mitigation measures and alternatives to the proposed project. With the potential of either an offshore or onshore incident at this location impacting Santa Barbara County, our office would like to submit the following comments.

3-1

The EIR should identify and assess onshore as well as offshore concerns. These would include any potential impacts from onshore pipelines and the facility, both existing and proposed modifications. The Draft states that the proposed project would share infrastructure used by other existing Ellwood area facilities and an existing 6-inch outer-diameter pipeline which currently connects Lease PRC 421 to Line 96. The current condition of the line is uncertain but the line is wrapped and cathodically protected against external corrosion.

3-2

According to the US Department of Transportation (DOT), National Pipeline Mapping System (NPMS) Pipeline and Hazardous Materials Safety Administration (PHMSA), PRC 421, the pipelines and onshore facility are identified as being located in a High Consequence Area and Unusually Sensitive Area (USAs) which means drinking water or ecological resource area that is unusually sensitive to environmental damage from a hazardous liquid pipeline release.

3-3

In this instance the existing and proposed facilities / pipelines are in both drinking water and eco-sensitive resource areas, and should comply with Title 49, Part 195, Transportation of Hazardous Liquids by Pipeline. In 2006 the Pipeline Inspection, Protection Enforcement and Safety Act of 2006 (PIPES Act) was enacted, requiring PHMSA to issue new regulatory requirements to Rural Onshore Hazardous Liquid Gathering Lines and Low Stress Pipelines. A “regulated rural gathering line” is defined as (1) a line between 6 5/8 and 8 5/8 inches in diameter, (2) operating at more than 20% of Specified Minimum Yield Strength (SMYS) or, if stress level is unknown or the pipeline is not constructed with steel pipe, at a pressure of more than 125 psi gage, and (3) located in or within a quarter mile of a “unusually sensitive area” (USA) (i.e., an area that contains sole-source drinking water, endangered species, or other ecological resources that could be adversely

affected by a hazardous liquid pipeline accident or leak). Operators of rural gathering lines meeting these criteria must comply with pipeline safety requirements that address corrosion and third-party damage. In particular, operators of these lines must establish maximum operating pressure, install and maintain line markers, establish continuing public education and damage prevention programs, comply with corrosion control requirements, implement programs for continuously identifying operating conditions that could contribute to internal corrosion (including measure to prevent and mitigate internal corrosion), and comply with operator qualification programs. Even though the current line is 6" not 6 5/8" the City should implement compliance to Title 49 Part 195 Transportation of Hazardous Liquids by Pipeline for this and all existing pipelines.

Review should include the following:

- Onshore pipeline condition reports
- Pressure testing reports
- Procedural Manual for operations, maintenance and emergencies
- Review Plans on oil spill contingency plan; emergency response; fire protection; Spill Prevention, Control and Countermeasure; Hazardous Material Waste Management; and Process Safety Management, etc.
- High Consequence Area-Unusually Sensitive Area requirements
- Pipeline Integrity Management Program
- Corrosion Control, etc.
- Baseline Assessment (required for Pipeline Integrity Management Program)
- Quantitative Risk Assessment (to evaluate risk to the public and is prepared by a qualified engineer - Fire Code authority). QRA would include facility information, evaluate system process design and operation, identify hazards, include risk analysis, and potential mitigation measures. QRA should include PRC 421.
- Hazardous Operations
- Reporting safety-related conditions

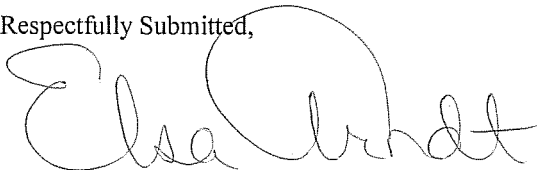
All reports and documentation should be made available for review by the City.

At the Public Scoping Meeting attendees were informed that no new drilling would take place yet on page Page 5, second paragraph, last sentence states "Neither Venoco nor the CSLC can monitor the resevoir's pressure without first drilling a well into the reservoir." This needs to be clarified.

Pier 421-2 would be returned to service as an oil production well and includes installation of new equipment such as an electric submersible pump (ESP), enclosures auxiliary stop, tamper switch and a surveillance camera. Please discuss back-up power, information on how maintenance will be conducted and when, and a security plan. The EIR should also include maintenance of the road leading to PRC 421.

Thank you for the opportunity to comment on this project. For questions concerning this correspondence, please contact me at (805) 681-5524 or by email at earndt@countyofsb.org.

Respectfully Submitted,



Elsa Arndt
Certified Emergency Manager
County of Santa Barbara, Office of Emergency Management

cc: Anne Wells, City of Goleta, Planning & Environmental Review



Santa Barbara County
Air Pollution Control District

April 22, 2013

Eric Gillies
California State Lands Commission
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825

Re: APCD Response to Notice of Preparation of a Draft Environmental Impact Report for Revised PRC 421 Recommissioning Project

Dear Mr. Gillis:

The Santa Barbara County Air Pollution Control District (APCD) appreciates the opportunity to provide comments on the Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Revised PRC 421 Recommissioning Project. Venoco proposes to reactivate oil Well 421-2 on Pier 421-2 and decommission Well 421-1 on Pier 421-1. Also proposed at Pier 421-2 are a new downhole electric submersible pump, new decking and handrails. Decommissioning of Well 421-1 will include complete removal of the existing pier structure and shut-in of the well, soil remediation, and restoration of the beach and seawall. A new 2-inch pipeline will be installed in an existing 6-inch pipeline, and would be redirected to connect Pier 421-1 to the Ellwood Onshore Facility (EOF) for processing. A new electrical motor control panel, transformer, oil meter, and power cable connections will be installed at the EOF. Electricity will be provided to the pier through two cables buried within a 30-inch deep and 2,500-foot-long trench.

APCD's guidance document, entitled *Scope and Content of Air Quality Sections in Environmental Documents* (updated December, 2011) is available online at www.sbcapcd.org/apcd/landuse.htm. This document should be referenced for general guidance in assessing air quality impacts in the Draft EIR. The EIR should evaluate the following potential impacts related to the Revised PRC 421 Recommissioning Project:

4-1

1. District Permit Requirements. The proposed project is subject to APCD permit requirements and prohibitory rules. Therefore, APCD is a responsible agency under the California Environmental Quality Act (CEQA), and will rely on the EIR when evaluating any APCD permits for proposed equipment. The EIR should include the air pollutant emissions for all proposed equipment to avoid additional CEQA documentation requirements related to APCD permit issuance. Specific APCD permit requirements such as Best Available Control Technology (BACT) and offsets will be addressed in the APCD permit process. However, emission quantification in the EIR analyses should reflect compliance with APCD permit requirements.

4-2

2. Toxic Air Contaminants and Health Risk. The proposed additional well and pipelines will increase emissions of toxic air contaminants. The additional health risk related to the proposed project must be evaluated and quantified. The Health Risk Assessment (HRA) that was prepared for the existing facility should be amended to include the proposed project. Please coordinate with David Harris in APCD Engineering Division at (805) 961-8824 to ensure that the HRA is consistent with the APCD Modeling

4-3

Guidelines for Health Risk Assessments (APCD Form-15i, available on the APCD website at <http://www.sbcapcd.org/eng/dl/appforms/apcd-15i.pdf>). The final HRA methodology and results should be described in the air quality impact section of the EIR.

4-3
cont'd

3. Attainment Status and Consistency with the APCD Clean Air Plan (CAP). The APCD has posted the most up-to-date attainment status for the County on the APCD website www.sbcapcd.org/sbc/attainment.htm and the most recent Clean Air Plan is available at www.sbcapcd.org/cap.htm. The website should be consulted for the most up-to-date air quality information prior to the release of the Public Draft EIR.

4-4

Many industrial and manufacturing sources, as well as buildings with large heating devices or generator engines, may be subject to APCD rules and permit requirements. Commercial or industrial projects will be considered consistent with the CAP if they are consistent with APCD rules and regulations. Large industrial stationary source projects may be found inconsistent if their direct emissions are not considered in the CAP stationary source emission inventory (Section 5.4.2 of APCD's *Scope and Content* document).

4. Land Use Conflicts Related to Air Pollutant Emissions. The EIR should examine whether any of the operations associated with the proposed project will result in air quality impacts to sensitive land uses such as residential, childcare facilities, schools, or senior living communities. Examples of this type of impact include odors from restaurants, dust, or toxic air contaminants such as diesel particulate emissions from trucks.

4-5

5. Increase in Emissions from Proposed Project. The EIR should present significance thresholds for ozone precursor emissions (reactive organic compounds [ROC], and oxides of nitrogen [NO_x]) and particulate matter and determine whether the proposed project will produce emissions in excess of the thresholds. APCD's *Scope and Content* document contains the APCD Board-adopted criteria for evaluating the significance of adverse air quality impacts for APCD projects. In the absence of locally-adopted thresholds, APCD recommends that these thresholds be used to determine significance of air quality impacts.

4-6

The proposed project will involve air quality impacts associated with operational activities and equipment including but not limited to well workovers, well testing, pipeline pigging and fugitive emissions, boat activities, and employee vehicle trips. Stationary and area source emissions must be added to transportation source emissions prior to applying the project-specific thresholds of significance. Project alternatives considered in the EIR should also have project emissions quantified and compared to significance thresholds. If the proposed project exceeds the significance thresholds for air quality, mitigations should be applied to reduce those emissions to below the levels of significance. Section 6 of APCD's *Scope and Content* document offers ideas for air quality mitigations. However, project-specific measures should be developed that are pertinent to the specific project and are enforceable by the lead agency.

6. Construction Impacts. The EIR should discuss the potential air quality impacts associated with any construction activities for the proposed project including but not limited to well drilling, pipeline degassing, and boat activities. APCD's December, 2011 *Scope and Content* document, Section 6,

4-7

presents recommended mitigation measures for fugitive dust and equipment exhaust emissions associated with construction projects. Construction mitigation measures should be enforced as conditions of approval for the project. The EIR should include a Mitigation Monitoring and Reporting Plan that explicitly states the required mitigations and establishes a mechanism for enforcement.

4-7
cont'd

7. Global Climate Change/Greenhouse Gas impacts. Greenhouse gas (GHG) emissions and global climate change impacts should be addressed in the CEQA document. Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of greenhouse gases.

The California Office of Planning & Research (OPR) developed amendments to the CEQA Guidelines, which were adopted by the California Natural Resources Agency on December 30, 2009 and became effective March 18, 2010. These amendments establish a framework for including global climate change impacts in the CEQA process, and include revisions to the Environmental Checklist Form (Appendix G) as well as to the Energy Conservation appendix (Appendix F). A new section (§15064.4) has been added that provides an approach to assessing impacts from GHG's. For additional information on the SB 97 CEQA Guidelines amendments, visit the Resources Agency's website at www.ceres.ca.gov/ceqa/guidelines/.

4-8

We recommend that all projects subject to CEQA review be considered in the context of GHG emissions and climate change impacts. CEQA documents should include a quantification of GHG emissions from all project sources, direct and indirect, as applicable. The discussion of climate change impacts can be included under cumulative air quality impacts or in its own section.

The EIR should examine how the project can be designed and operated to minimize GHG emissions. Some potential measures include, but are not limited to:

- Leak detection to reduce fugitive emissions
- Incorporate high efficiency process equipment
- Reduction in vehicle trips from passenger vehicles

For guidance regarding greenhouse gas analysis for CEQA environmental documents, please refer to the CAPCOA *CEQA & Climate Change* document. CAPCOA has also published *Quantifying Greenhouse Gas Mitigation Measures*, an extensive sector-by-sector compendium of project-specific mitigation measures, including quantification methods to calculate GHG reductions. Both of these documents are available online at www.capcoa.org.

APCD Response to Notice of Preparation of a Draft Environmental Impact Report for Revised PRC 421
Recommissioning Project
April 22, 2013
Page 4 of 4

We hope you find our comments useful. We look forward to reviewing the Draft EIR. Please contact me at (805) 961-8893 or by e-mail at edg@sbcapcd.org if you have questions.

Sincerely,



Eric Gage
Air Quality Specialist
Technology and Environmental Assessment Division

cc: David Harris
Project File
TEA Chron File



DEPARTMENT OF CONSERVATION

Managing California's Working Lands

DIVISION OF OIL, GAS, & GEOTHERMAL RESOURCES

195 S. BROADWAY • Suite 101 • ORCUTT, CALIFORNIA 93455

PHONE 805 / 937-7246 • FAX 805 / 937-0673 • WEBSITE conservation.ca.gov

April 22, 2013

Eric Gillies, Assistant Chief
 Division of Environmental Planning and Management
 California State Lands Commission
 100 Howe Avenue, Suite 100-South
 Sacramento, CA 95825

Dear Mr. Gillies:

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT
 (DEIR) AND NOTICE OF PUBLIC SCOPING MEETING, FILE REF: SCH NO.
 2005061013, CSLC EIR No. 732; PRC 421; W30159

The Division of Oil, Gas, and Geothermal Resources (Division) has reviewed the Notice of Preparation for the above referenced project. Under the California Laws for Conservation of Petroleum & Gas (PRC) and the California Code of Regulations (CCR), the Division has authority over the drilling, operation, maintenance, and abandonment of wells, both existing and proposed, and the operation, maintenance and removal or abandonment of tanks and facilities attendant to oil and gas production, including pipelines not subject to regulation pursuant to Chapter 5.5 (commencing with § 51010) of Part 1 of Division 1 of Title 5 of the Government Code that are within an oil and gas field.

PRC § 3203 requires that, before commencing any deepening or re-drilling of a well, any operation involving the plugging of a well, or any operations permanently altering in any manner the casing of a well, the operator shall file with the supervisor or the district deputy a written notice of intention to commence such work.

Venoco, Inc. (Venoco) proposes to resume injection into well "State 421" 1. The well last injected in 1993, and the injection project has been terminated. In order to resume injection, Venoco must submit an application to resume injection together with supporting data (some of which may already be on file with the Division) as required in CCR §§ 1724.6 through 1724.10. Division approval of underground injection projects is a discretionary process subject to review by the Regional Water Quality Control Board and a public notification and comment period. Approval must be issued by the Division before injection can recommence. The Division may issue permission for Venoco to conduct injection testing for a limited time and / or limited injection volume to determine the suitability of the formation for injection.

5-1

(CONTINUED ON PAGE 2)

April 22, 2013

SCH NO. 2005061013, CSLC EIR No. 732; PRC 421; W30159

Page 2

The proposed gas/oil/water separator equipment, the new 2" pipelines, and the facilities in general will fall under CCR §§1760 through 1777.3 regarding the installation, maintenance, inspection, and testing of production facilities, tanks, and pipelines, and requirements for documentation of construction, installation, maintenance and repair operations, tests, and inspections.

5-2

Venoco currently has a spill contingency plan on file with the Division encompassing the Elwood Onshore Facility; Platform Holly, and the 421 lease. The plan will need to be amended to reflect the changes made to the 421 facilities.

5-3

Prior to plugging and abandonment of the last well on the State 421 lease, the operator will be required to submit an Abandonment and Restoration Plan covering the decommissioning of the well(s) and facilities as required in CCR § 1776 (e) and (f).

5-4

We appreciate the opportunity to comment on this document. If you have any questions, please contact me or Ross Brunetti at 805 937-7246

Sincerely,



Patricia A. Abel
District Deputy

RB:pd

cc: Chrono
EQ-EIR
Adele Lagomarsino



By Electronic Mail

April 29, 2013

Chair John Chiang and Members of the
California State Lands Commission
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825

Email: CEQAcomments@slc.ca.gov

Re: Revised PRC 421 Recommissioning NOP Comments

Dear Chair Chiang and Members of the State Lands Commission:

On behalf of the Natural Resources Defense Council (“NRDC”) and our over one million members and activists, more than 250,000 of whom reside in California, we are writing to submit comments on the Notice of Preparation (“NOP”) for Venoco, Inc.’s Revised PRC 421 Recommissioning Project (“project”). The project would involve returning existing Oil and Gas Lease PRC 421 to production (ongoing production was shut-in in 1994) by reactivating Oil Well 421-2, located on Pier 421-2, in the City of Goleta. The project would also involve the decommissioning of Pier 421-2 and additional landside improvements, including the installation of new or modifications of existing infrastructure to transport and process oil from Lease PRC 421.

The EIR Should Address the Presence of, and Impacts to, Marine Protected Areas

In January 2012, a new network of marine protected areas (MPAs) went into effect in Southern California. These protected areas, which are an essential component of a statewide network, were created to protect a diversity of underwater habitats and marine species and conserve the integrity of ocean ecosystems for future generations. The proposed recommissioning of Well 421-2 would occur less than one mile from the eastern boundary of the Campus Point No-Take State Marine Conservation Area and approximately 1.5 miles from the western boundary of the Naples State Marine Conservation Area. Given the close proximity of the Campus Point and Naples MPAs to the proposed project as well as the potential for even more wide-ranging effects to MPAs throughout the Bight as a result of an oil spill, **we urge the State Lands Commission to include a description of Southern California’s marine protected areas in the EIR as well as an evaluation of the potential impacts the project could have on resources within MPAs.** Because California’s new system of MPAs have been explicitly designed to function as a network, any impacts to even one MPA may also affect the overall function of MPAs in a broader area.

Conclusion

The State Lands Commission plays a critical role in providing stewardship of the lands, waterways, and

resources of the state and ensuring the future quality of the environment through the balanced use of lands and resource protection entrusted to its care. Thus, you have the opportunity and responsibility to help safeguard California's marine ecosystems and ensure that the full potential of our new protected area network is realized for the benefit of the public. We believe the value of MPAs and the need for their long-term protection and management should be a fundamental component in Commission's analyses and decision-making.

We appreciate the opportunity to comment on this NOP. Feel free to contact us with any questions.

Very truly yours,



Karen Garrison
Co-Director, Oceans Program
NRDC



Jenn Eckerle
Ocean Policy Consultant
NRDC



April 24, 2013

Eric Gillies, Assistant Chief
Division of Environmental Planning and Management
California State Lands Commission
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825
Sent via email: CEQAcomments@slc.ca.gov

Re: Revised PRC 421 Recommissioning NOP Comments

Dear Mr. Gillies:

The following comments regarding the Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Revised PRC 421 Recommissioning Project are submitted by the Environmental Defense Center (EDC) on behalf of Get Oil Out!, Los Padres Sierra Club, Citizens for Goleta Valley and Citizens Planning Association of Santa Barbara County. EDC and our clients have been monitoring the status of PRC 421 since the oil spill in 1994. We are very concerned about the impacts of recommissioning these aging facilities, and the risk of a coastal oil spill or gas leak.

We urge the California State Lands Commission (CSLC) to thoroughly analyze all potential impacts associated with the recommissioning of operations at PRC 421, and to evaluate alternatives and mitigation measures that are capable of avoiding or substantially lessening such impacts. In particular, the Draft EIR should analyze the cause and extent of re-pressurization of the field, the life of the Project and how it may be affected by re-pressurization, the aging status of the facilities that would be used for the Project, the safety and integrity of the infrastructure, the impacts of a potential oil spill on coastal tidelands in the vicinity of the Project, the effect of the nonconforming status of the Ellwood Onshore Facility (EOF) on the Project's viability, the alternative of processing at the Las Flores Canyon consolidated processing site, the effects of sea level rise, and the cumulative impact of the greenhouse gas emissions on climate change. Should the Project be approved, we would also like to see an alternative or mitigation measure that allows for a permit "re-opener" following completion of the re-

pressurization study so that the CSLC can reassess the potential impacts of the Project and take further action as appropriate and necessary.

Background

Operations at PRC 421 were shut down in 1994 following a significant oil spill. The history and location of this facility, compounded by its age, creates a perfect storm of risk to an area of coast that is known for its ecological and recreational importance. Were this project to be proposed for the first time today, it would no doubt be denied. Other facilities related to production in the Ellwood area have been rezoned and slated for phasing out because of their incompatibility with the area. Both the Ellwood Marine Terminal and EOF were rezoned in 1990. The EMT is in the process of being decommissioned. The City of Goleta's General Plan contains clear policy directives to decommission the EOF as well.

Preparation of a Draft EIR

We support the CSLC's decision to prepare an EIR for this Project. "The EIR requirement is the heart of CEQA." Guidelines § 15003(a); *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795. The fundamental purpose of an EIR is "to inform other governmental agencies and the public generally of the environmental impact of a proposed project" and "to demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action." CEQA Guidelines § 15003(c), (d). An EIR shall include a detailed analysis setting forth "[a]ll significant effects on the environment of the proposed action." Pub. Resources Code § 21100(b)(1); see also CEQA Guidelines § 15126.2(a) ("An EIR shall identify and focus on the significant environmental effects of the proposed project"); *No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68; *People ex rel. Department of Public Works v. Bosio* (1975) 47 Cal.App.3d 495.

As noted in the Revised NOP, this Project will result in many potentially significant environmental impacts, including but not limited to: release of hazardous materials, water resources and water quality, air quality, safety, biological resources, geological resources, land use, recreation, public services, transportation and circulation, noise, aesthetic and visual resources, cultural and historical resources, energy and mineral resources, and climate change.

Project Description

An EIR must include a project description that is detailed enough to provide for the evaluation of the project's potential environmental impacts. CEQA Guidelines § 15124. The project description must also set forth the project objective in terms that allow the lead agency to develop "a reasonable range of alternatives." CEQA Guidelines § 15124(b).

The NOP states that the EIR “will provide information on the potential re-pressurization of the Lease PRC 421 reservoir.” NOP at p. 5. The cause of re-pressurization is critical to gain an understanding of why the field is re-pressurizing, what the risks might be, and how to eliminate such risks. The cause and extent of re-pressurization is also necessary to ascertain the potential life of the Project, which in turn is an important factor in determining the significance of the impacts of the Project. Hence, it is vitally important that the EIR analyze the cause of the re-pressurization.

7-2

The NOP also states that the EIR will provide information on “the Lease’s production history, spill history, existing and proposed infrastructure, and repairs to Project facilities.” *Id.* The history and condition of the proposed facilities will provide important information regarding the risks of oil spills, leaks and other malfunctions.

7-3

Finally, the NOP states that “[b]ased on current projections, Venoco estimates the productive life of Lease PRC 421 to be approximately 12 years, commencing in 2013 and continuing to *and potentially beyond 2025* depending upon production characteristics and Project economics.” *Id.*, emphasis added. In another section, the NOP notes that “the price of oil may dictate that the Project would continue to be economically feasible beyond the Applicant’s expectation....Therefore, while Venoco has proposed that this Project would have a productive life of 12 years, *historic data suggest that production could continue beyond that time.*” NOP at p. 10, emphasis added. It is important that the Draft EIR resolve this uncertainty and provide the best estimate of the life of the Project. Every year the Project is in production is another year of risk, and another year that the already aging facilities become even older and potentially more unsafe.

7-4

Environmental Setting

An EIR must contain a “description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published.” CEQA Guidelines § 15125(a). As noted in the CEQA Guidelines, “[k]nowledge of the regional setting is critical to the assessment of environmental impacts.” CEQA Guidelines § 15125(c).

The Project is proposed in a very sensitive coastal location. The Project is located on the beach and coastal bluff next to Ellwood Mesa, Haskell’s Beach and very close to the Devereux Slough, Coal Oil Point Natural Reserve, and eastern gateway to the Gaviota Coast. This region is noted for its biodiversity, important bird and plant species, and habitat for endangered and threatened species such as the western snowy plover and the California least tern.

7-5

The EIR must include a full inventory of sensitive, rare, threatened and endangered species and habitats in the area surrounding the proposed Project site. Because of the recreational importance of this area, the EIR must also describe the existing public access at the beach, Ellwood, Devereux, the Bacara, and Sandpiper Golf Course.

Impacts

The EIR must assess all of the potential environmental impacts that may be caused by the proposed Project, including direct and indirect impacts as well as cumulative impacts. CEQA Guidelines §§ 15126.2(a), 15130. We support the list and description of potential environmental impacts set forth in the Revised NOP. In addition, we wish to draw special attention to four impact areas: (1) risks of oil spills and gas leaks; (2) risks related to the aging state of the facilities; (3) consistency with the City of Goleta's General Plan; and (4) climate change and greenhouse gas emissions.

Risks of Oil Spills and Gas Leaks

This Project is located in a highly sensitive area, both with respect to the biological resources and public use in the vicinity of the Project site. An oil spill could result in devastating impacts to the marine, tidal and terrestrial resources of the area, as well as public recreation and water quality. A gas leak could result in a significant impact to public safety and recreation. The Draft EIR should evaluate a worst case scenario for an accident, including the potential for human error.

7-6

Risks Related to the Aging State of the Facilities

The usual risks associated with an oil and gas facility are grossly exacerbated by the age and degraded status of some of the Project facilities. The Draft EIR should carefully evaluate the condition of *all* of the Project equipment and facilities, and analyze how the condition of such components may contribute to Project-related impacts.

7-7

Consistency with the City of Goleta's General Plan

CEQA requires that lead agencies "discuss any inconsistencies between the proposed project and applicable general plans, specific plans, and regional plans." Guidelines § 15125(d). In this case, Venoco proposes to process oil and gas from PRC 421 at the EOF. This facility site is zoned for Open Space/Active Recreation use and the EOF is thus a nonconforming facility. City of Goleta General Plan Policy LU 10.1(b). While the City's General Plan discourages processing on the pier (LU 10.4(b)), the Plan also notes that the "Venoco EOF site is an inappropriate location for processing of oil and gas because of the public safety and environmental hazards associated with this type of use and its close proximity to residential neighborhoods, Ellwood School, Bacara Resort, and environmentally sensitive habitat areas" (LU 10.1(b)). No expansion of the permitted throughput capacity is allowed. LU 10.1(c).

7-8

The Draft EIR should identify all relevant policies and ordinances for the City of Goleta that may have a bearing on this Project, and analyze the Project's consistency with such provisions in accordance with CEQA Guidelines § 15125(d). As noted below, the

7-9

Draft EIR should also evaluate alternatives that are consistent with the City's General Plan, e.g., processing at Las Flores Canyon.

Climate Change and Greenhouse Gas Emissions

Climate change impacts are typically addressed as cumulative impacts. In this case, the Draft EIR must quantify the expected greenhouse gas emissions from the Project and disclose the potential impacts of contributing to climate change. We urge the CSLC to continue its practice of applying a zero-emission threshold for assessing such impacts. (See *Venoco Ellwood Marine Terminal Lease Renewal Project Final Environmental Impact Report*, California State Clearinghouse (SCH) No. 2004071075, CSLC EIR No. 743, April 30, 2009; *Draft Environmental Impact Report for the Venoco Ellwood Oil Development and Pipeline (Full Field) Project*, State Clearinghouse No. 2006061146, CSLC EIR No. 738, June 2008.) This threshold of significance provides an accurate assessment of Project impacts, given the fact that the global climate already exceeds current targets for stabilization and thus any new emissions will contribute to a cumulatively significant impact.¹ According to the California Air Pollution Control Officers Association (CAPCOA),

7-10

The scientific community overwhelmingly agrees that the earth's climate is becoming warmer, and that human activity is playing a role in climate change. Unlike other environmental impacts, climate change is a global phenomenon in that all GHG emissions generated throughout the earth contribute to it. Consequently, both large and small GHG generators cause the impact. While it may be true that many GHG sources are individually too small to make any noticeable difference to climate

¹ Hanson J., et al. "Target atmospheric co2: where should humanity aim?" *Open Atmospheric Science Journal* 2 (2008): 217-231; Eby, M., Montenegro A., Zickfeld K., Archer D., Meissner K., & Weaver A. "Lifetime of anthropogenic climate change: millennial time scales of potential co2 and surface temperature perturbations." *Journal of Climate* 22, Special Collection (May 2008): 2501-2511; Matthews D., & Caldeira K.. "Stabilizing climate requires net zero emissions." *Geophysical Research Letters*, February 27, 2008: 1-5; Allison I., Bindoff N.L., Bindshadler R.A., Cox P.M., de Noblet N., England M.H., et al. (2009). *The Copenhagen Diagnosis*. The University of New South Wales Climate Change Research Centre (CCRC). Sydney: CCRC; Lowe A., Huntingford C., Raper S., Jones C., Liddicoat S., & Gohar L. "How difficult is it to recover from dangerous levels of global warming?" *Environmental Research Letters*, March 11, 2009; Zickfeld K., E. M. (2009). Setting cumulative emissions targets to reduce the risk of dangerous climate change. *National Academy of Sciences of the United States*, 106 (38), 16129-16134; England M., Alexander S.G., & Pitman A.J. "Constraining future greenhouses gas emissions by a cumulative target." *National Academy of Sciences of the United States of America* 106, no. 39 (September 2009): 16539-16540.

change, it is also true that the countless small sources around the globe combine to produce a very substantial portion of total GHG emissions.

A zero threshold approach is based on a belief that, 1) all GHG emissions contribute to global climate change and could be considered significant, and 2) not controlling emissions from smaller sources would be neglecting a major portion of the GHG inventory.

CEQA explicitly gives lead agencies the authority to choose thresholds of significance. CEQA defers to lead agency discretion when choosing thresholds. Consequently, a zero-emission threshold has merits.²

We are happy to see that impacts from greenhouse gas emissions were added to the Revised NOP. We urge the CSLC to fully analyze impacts from such emissions by employing a zero-emission threshold.

The Draft EIR must also address the impacts of climate change on the Project. For example, the Draft EIR should analyze how sea level rise will address this coastal facility. Site-specific sea level rise predictions and analysis will be critical to ensuring the safety of the Project and assessment of impacts and measures to avoid or substantially lessen such impacts.

In addition to sea level rise, the Draft EIR must consider the separate, and cumulative, impacts that could result from earthquakes, tsunamis, or winter storm surge impacts on the pier and related infrastructure.

Alternatives

CEQA Guidelines § 15126.6 requires that an “EIR shall describe a range of reasonable alternatives to the project or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.” The Revised NOP sets forth only two alternatives (other than the obligatory No Project alternative) for analysis in the Draft EIR: oil processing on Pier 421-2 and re-injection at Platform Holly. It is unclear whether either of these alternatives would “avoid or substantially lessen” the significant effects of the project; this is a question that must be answered by the preparers of the EIR.

EDC and our clients request that the Draft EIR include two additional alternatives: (1) the No Project Alternative with Pressure Testing; and (2) Processing at the consolidated Las Flores Canyon Processing Site.

² CAPCOA, *CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*, p. 27 (2008).

7-10
cont'd

7-11

7-12

No Project Alternative with Pressure Testing

The Revised NOP identifies several alternatives that were eliminated from full evaluation in the 2007 Draft EIR. NOP at p. 14. One of those alternatives is the “No Project Alternative with Pressure Testing.” Pressure testing is a critical component of the CSLC’s analysis of the project, its impacts, and potential mitigation measures and alternatives. Information about the cause and extent of re-pressurization is necessary to determine the life and impacts of the Project, especially as related to release of hazardous materials, safety, geology, water quality, and recreation. We therefore urge the CSLC to consider this alternative as a separate initial Project. In this manner, the CSLC would be able to allow limited drilling to conduct its analysis, and then use that analysis to inform its environmental review of the full proposed Project. Otherwise, the Project will be approved and production will ensue *before* complete and necessary information is available.

7-12
cont 'd

Another alternative or mitigation measure would be to require new discretionary review, such as a permit “re-opener,” when the results of the re-pressurization study are complete. This review would allow the CSLC to add or modify project conditions in response to the findings of the study. Such review would be similar to Santa Barbara County’s practice of including conditions for “effectiveness review” in permits for major oil projects. For example, see attached Condition B.2 from the Point Arguello Project Final Development Plan. This type of condition allows the lead and responsible agencies to conduct a comprehensive review of project operations and conditions at appropriate times to determine whether impacts are effectively mitigated and, based on that review, to impose additional conditions. Completion of the re-pressurization study would be an appropriate time to comprehensively review the project conditions to make sure that impacts are clearly understood and effectively mitigated.

7-13

Processing at Las Flores Canyon

EDC and our clients also request analysis of an alternative that is not mentioned in the Revised NOP - processing at the consolidated Las Flores Canyon processing site. This alternative reflects the City’s General Plan policy supporting the designation of Las Flores Canyon as the site for consolidation of oil and gas processing on the South Coast. Policy LU 10.1(a). This alternative also avoids perpetuation of the non-conforming use at the EOF.

7-14

Mitigation Measures

This Project is expected to result in several significant environmental impacts. Accordingly, the Draft EIR must evaluate not only alternatives that will avoid or substantially lessen those impacts, but also mitigation measures. CEQA Guidelines §

15126.4. Mitigation measures must be “fully enforceable.” CEQA Guidelines § 15126.4; *Federation of Hillside and Canyon Assns v. City of Los Angeles* (2000) 83 Cal.App.4th 1252. Development and analysis of mitigation measures must not be deferred. CEQA Guidelines § 15126.4(a)(1)(B); *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645; *Kings County Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692; *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296. If a mitigation measure would cause any environmental impacts, the Draft EIR must assess those impacts as well. CEQA Guidelines § 15126.4(a)(1)(D).

7-15

Conclusion

This Project has been proposed for a long time, yet there continue to be many outstanding questions and concerns. Perhaps the most problematic aspect of the proposal is the lack of information about what is causing the re-pressurization, whether the proposed production will reduce the threat of re-pressurization, and if so, to what degree. The lack of information regarding re-pressurization also limits the ability of the CSLC to correctly ascertain the potential life of the Project, and hence the timing and severity of the impacts of the Project. Accordingly, we request that the CSLC consider an alternative or mitigation measure that will allow the agency to first study and ascertain the cause of re-pressurization, and the likely effect of drilling and production on re-pressurization.

Another significant concern about the Project is the proposal to process the oil and gas at the EOF. The site for this facility was rezoned for other uses in 1990, and for more than 20 years the County of Santa Barbara and the City of Goleta have looked forward to the decommissioning of the EOF and the conversion of the site to Open Space and Recreation. The facility is surrounded by important public uses: residential neighborhoods, formal coastal beach access, the Ellwood Mesa, Sandpiper Golf Course, soon-to-be Haskell’s Landing homes, and the Bacara Resort, just to name a few. It is critical that the Draft EIR examine an alternative site for processing. Processing on the pier raises obvious concerns. Processing at Las Flores would comply with longstanding coastal policies for this region and avoid (or at least substantially lessen) the risks and impacts associated with use of the EOF.

Finally, we look forward to an analysis of all of the direct, indirect and cumulative impacts that may result from this Project. Safety, risk of oil spills and gas leaks, and climate change are some of the key impacts that must be thoroughly analyzed.

Thank you for this opportunity to comment on the scope of the Draft EIR for Venoco’s proposed PRC 421 Recommissioning Project. Please do not hesitate to contact me if you have any questions regarding these comments.

Sincerely,



Linda Krop, Chief Counsel

April 24, 2013
Revised PRC 421 Recommissioning NOP Comments
Page 9 of 9

att: Point Arguello Project Final Development Plan Condition B.2

cc: Get Oil Out!
Los Padres Sierra Club
Citizens Planning Association
Citizens for Goleta Valley
City of Goleta
County of Santa Barbara
California Coastal Commission

Point Arguello Project (85-DP-32CZ)
Final Development Plan Conditions
August 19, 1985

B-2. County Imposition of New Conditions and Comprehensive Review of Conditions

If at any time County determines that these permit conditions are inadequate to effectively mitigate significant environmental impacts caused by the project, or that recent proven technological advances could provide substantial additional mitigation, then additional reasonable conditions shall be imposed to further mitigate these impacts. Imposition of such conditions shall only be considered and imposed as part of the County's

comprehensive review of the project conditions. County shall conduct a comprehensive review of the project conditions and consider adding reasonable conditions which incorporate proven technological advances three years after permit issuance and at appropriate intervals thereafter. A comprehensive review of conditions which are not effectively mitigating impacts may be conducted at any appropriate time. Upon written request, the Board of Supervisors shall determine whether the new condition required is reasonable considering the economic burdens imposed and environmental benefits to be derived.

LEAGUE OF WOMEN VOTERS OF SANTA BARBARA

e-mail: info@LWVsantabarbara.org

March 29, 2013

Eric Gilles, Assistant Chief
Division of Environmental Planning and Management
California State Lands Commission
100 Howe Ave., Suite 100-South
Sacramento, CA 95825

Re: Revised PRC 421 Recommissioning NOP Comments

Dear Mr. Gilles:

The Santa Barbara League of Women Voters has been following proposals for PRC 421 for many years. We share the concerns of many about its 85 year old well, the last one in California to be located so close to the beach. Consequently we ask that mitigations suggested in the EIR should offer the highest level of protection.

The University of California regularly conducts research and collects samples in the waters that would be impacted by a spill from this well. Also nearby is the Devereux Slough, part of the university's Natural Reserve System, obviously a sensitive habitat. In this situation spill prevention to lessen the risk of biological impacts has a high level of importance. The League suggests that mitigation could include extra training for the oil rig crew and unannounced inspections.

8-1

The League urges consideration of an alternative of processing at Exxon's Las Flores Canyon facility instead of on the pier. This would put that phase of production away from the Ellwood Onshore Facility which is sited on land zoned Recreational and away from the pier.

8-2

Although we cannot attend the hearing on April 3 we appreciate the decision of the CSLC to hold it in the locality most concerned about this project.

Sincerely,

Beth Pitton-August, co-President

Jean Holmes

Chair, Energy Committee

CB ✓ MMV —
JWP —
FILE: PRC 421
Copy to: Cyogging
DEPM.

April 24, 2013

California State Land Commission
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

Ref: SCH No. 2005061013
CSLC EIR No. 732; PRC 421; W30159

Dear California State Land Commission:

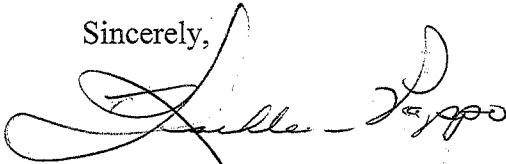
I received your letter regarding the aforementioned file numbers.

I do believe that oil drilling was disbanded in 1994 for very important reasons.

I am against the Venoco drilling project.

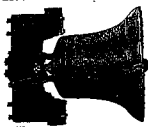
9-1

Sincerely,



Kathleen Pappo
Barbareño/Ventureño Band of Mission Indians
2762 Vista Mesa Drive
Rancho Palos Verdes, CA 90275-6324

USA FIRST-CLASS FOREVER



Rathlene P
2762 Vista Mesa Dr
Rancho Palms Verdes
APR 27 2014

California State Child Commission
100 Howe Ave. Ste 100 - South
Sacramento, CA 1

Veronica

LOS ANGELES CA 900
7500 THE GREAT AVENUE



RECEIVED
MAY - 1 2013

RECEIVED
APR 27 2014

From: Lanny Ebenstein [lannyebenstein@aol.com]
Sent: Monday, April 29, 2013 3:29 PM
To: CEQAComments@SLC
Subject: Revised PRC 421 Recommissioning NOP Comments

TO:
California State Lands Commission

FR:
Lanny Ebenstein, Ph.D.
President, California Center for Public Policy

RE:
Revised PRC 421 Recommissioning NOP Comments

This letter is to provide strong support for Venoco's application to return existing Oil and Gas Lease PRC 421 to production. The project would use already existing infrastructure.

Commencement of production would enable determination if the Lease PRC 421 oil and gas reservoir is naturally re-pressurizing. Increased reservoir pressure could result in releases of oil to the marine environment from historical, abandoned oil wells and natural seeps. It is not possible to monitor the reservoir's pressure without first drilling a well into the reservoir.

10-1

This project would neither expand nor extend the life of the Ellwood Oil Field. The best way for the oil to be handled is through the Ellwood Oil Field. This application would allow Venoco to abandon one of the piers and limits oil activity on the remaining pier.

10-2

It is vital, for the sake of the environment, that this project is approved.

Yours truly,

Lanny Ebenstein, Ph.D.
President
California Center for Public Policy
P.O. Box 3480
Santa Barbara, CA 93130
Ph. (805) 682-9815

From: AOL account [quickpool@aol.com]
Sent: Monday, April 29, 2013 4:35 PM
To: CEQAComments@SLC
Subject: RE: Comments regarding Lease 421

Eric Gillies, Assistant Chief
Division of Environmental Planning and Management
California State Lands Commission
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825

April 29, 2013

Dear Mr. Gillies,

My name is Richard Whited. I have lived all but 2 years of my life in the Santa Barbara, Goleta or IV area. I have walked the beaches from Hendry's beach to Haskell's beach for more than 50 years. In the last 50 years, the amount of tar on the Goleta, UCSB, IV and Haskell beaches have decreased dramatically, maybe by 90% at Goleta, by 80% at UCSB and IV and by 60% at Haskell. There are two events that have caused this decrease. One is that drilling around Coal Oil point has decreased the pressure driving the natural oil leakage and the other is the two large tent like structures that were placed over natural leaks.

11-1

I do not know if continued drilling or resuming drilling would further decrease the pressure driving the natural leakage. However I would recommend that the EIR study if resuming drilling would be expected to reduce natural leakage and by how much.

11-2

I do know that an expanded number of large tent like structures would reduce natural leakage. I would recommend that the EIR study the use of an increased number of large tent like structures as an important mitigation measure.

11-3

Richard Whited
Goleta

PUBLIC SCOPING MEETING
STATE OF CALIFORNIA
LANDS COMMISSION

CITY OF GOLETA
COUNCIL CHAMBERS
130 CREMONA DRIVE, SUITE B
GOLETA, CALIFORNIA

WEDNESDAY, APRIL 3, 2013

3:05 P.M.

6:15 P.M.

JAMES F. PETERS, CSR, RPR
CERTIFIED SHORTHAND REPORTER
LICENSE NUMBER 10063

A P P E A R A N C E S

STAFF:

Mr. Eric Gillies, Project Manager

Ms. Holly Wyer

ALSO PRESENT:

Dr. Ingborg Cox

Ms. Fran Farina, Los Padres Sierra Club

Ms. Carla Frisk, Get Oil Out

Mr. Steve Greig, Venoco

Ms. Linda Krop, Environmental Defense Center, Los Padres
Sierra Club, Get Oil Out, Citizens Planning Association
and Citizens of Goleta Valley

Ms. Barbara Massey

Mr. David Sangster

I N D E X

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Ms. Frisk	14
Ms. Massey	17
Dr. Cox	18
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Open and adjourn 6 o'clock meeting	22
Reporter's Certificate	23

P R O C E E D I N G S

1
2 PROJECT MANAGER GILLIES: Well, welcome
3 everybody. Good afternoon. I want to welcome you to the
4 revised PRC 421 recommissioning public scoping meeting for
5 the preparation of a Draft EIR, Environmental Impact
6 Report. If you haven't done so, sign up sheets are at the
7 entrance and speaker slips are up there if you would like
8 to speak on the project.

9 I'm Eric Gillies. I'm the project manager for
10 the California State Lands Commission. I've been working
11 this project since 2004. On my right here is Holly Wyer.
12 She's one of our new scientists. That will be my Deputy
13 Project Manager as we prepare this new EIR.

14 The State Lands Commission is the lead agency for
15 the California Environmental Quality Act in preparation of
16 this Draft EIR. This meeting is the Notice of
17 Preparation. We've been working in cooperation
18 with -- through a joint review panel with the City of
19 Goleta and the Coastal Commission.

20 Then a couple other people. We have Dan Gira in
21 our audience. He's with Amec Earth and Environmental.
22 He's the consultant we contracted for the original EIR.
23 And he's continuing to help us work and prepare the new
24 Draft EIR. We also have Steve Greig with Venoco,
25 representing Venoco as a project proponent. Also, we have

1 a transcriber reporting the session here today to make
2 sure we gather -- collect all the comments during this
3 process.

4 So the purpose of this meeting is basically to
5 take in comments, as far as the scope and content of the
6 EIR we'll be preparing for this project. We circulated a
7 previous Draft EIR in 2007. And since then, the project
8 has been off and on since then. And since there's been
9 several changes in the past few years, in particular the
10 line 96 was constructed from the EOF to Las Flores Canyon,
11 which basically eliminated barging from the Ellwood Marine
12 Oil Terminal.

13 And then recently, Venoco has completed emergency
14 repairs on PRC 421-2, which is the eastern most pier out
15 on the shore.

16 Can everybody hear me okay?

17 I just want to check.

18 Okay.

19 And then project alternatives have changed and
20 cumulative projects also since 2007 has changed quite a
21 bit. So because of these substantial changes, we decided
22 to do a new EIR process, so therefore we've prepared a new
23 NOP, which we circulated in early March. March 5th was an
24 NOP we published, which was basically the project that was
25 proposed originally in the 2007 EIR, which is basically

1 producing oil and separating on the pier and going
2 directly into line 96.

3 A couple weeks ago, Venoco requested to amend
4 their application to take the production and take it to
5 the EOF for separation and commingling with Holly oil
6 before it goes into line 96.

7 From this point, I'm going to -- did everybody
8 get an aerial photo?

9 I just want to go over the project components
10 from this photo. I didn't bring a PowerPoint or anything
11 to put on the screen. But if you have haven't, we
12 have --

13 MS. WYER: You want me to go grab some?

14 PROJECT MANAGER GILLIES: Yeah.

15 Does anybody need one?

16 I have some up here.

17 And this photo is in the NOP as well, if you have
18 the NOP.

19 So if you're looking at the photo, the
20 two -- there's two pier structures right below the bluffs,
21 so Sandpiper Golf Course -- Sandpiper Golf Course, 421-1
22 is the western most pier, and 421-2 is the eastern most
23 pier, which is the production well. It's an existing well
24 that's been shut in since 1994, when the spill occurred
25 over by the -- on the golf course. And then 421-1 was a

1 water injunction well.

2 Historically, the production went from 421-2
3 injected into 421-1, the water, and then went directly
4 into line 96, which is just south of the EOF, which is in
5 pink. And then from there, line 96 went out to the
6 Ellwood Marine Terminal. Now, line 96 goes under Highway
7 101 and then goes west to Las Flores Canyon about eight
8 miles.

9 So the proposed project would be to 421 -- put
10 421-2 back into production and then take the oil directly
11 into the Ellwood Onshore Facility where it would commingle
12 with Holly oil and then get processed through the onshore
13 facility before it goes out into line 96 and to Las Flores
14 Canyon.

15 With that new proposed project, it
16 would -- injection would occur within the EOF and
17 subsequently 421-1 wouldn't be required for the project
18 and would be removed, leaving just the one pier.

19 Also, part of the project would be, there's one
20 existing pipeline that would remain and they would sleeve
21 in a two-inch pipeline leading from 421-2 to the EOF. And
22 then they would trench in a new power cable from EOF, a
23 communication cable, to 421-2.

24 So as far as onshore construction, that's about
25 it. It will be mostly confined to the access road

1 crossing one of the golf links to the onshore facility.

2 That's basically it. Did you have anymore to
3 say, Steve, on that?

4 MR. GREIG: I guess my one comment would be the
5 sleeving of the two-inch line would be actually --

6 MS. WYER: Could you go to the podium and
7 introduce yourself.

8 PROJECT MANAGER GILLIES: Since we're recording,
9 we have microphones here and at the podium.

10 MR. GREIG: Yeah. Steve Greig with Venoco. The
11 only thing I would add is that the line that would be
12 sleeved through the existing line would be essentially a
13 sleeve line in itself. So there would be -- there's a
14 containment line that would go in first. I think that one
15 is a four inch, and then the two-inch line would go
16 through that. So there's --

17 PROJECT MANAGER GILLIES: So it's an existing six
18 inch, right?

19 MR. GREIG: Right. And then there's a four-inch
20 containment line that would go in and then the two inch
21 would go inside, so that there's kind of multiple ways of
22 doing it. That will become the spill containment in the
23 pipeline.

24 PROJECT MANAGER GILLIES: Oh, okay. Thank you.
25 So that's basically the proposed project. And

1 then what was proposed in 2007, which was to produce
2 separate on pier 421-2, that would become an alternative
3 to this new proposed project, which would -- basically
4 that would be separating the gas and oil on 421-2 and then
5 taking it to 421-1 and injecting it within that pier, so
6 the pier would have to remain for that alternative.

7 Then, of course, we'll be analyzing the
8 no-project alternative. And then one other alternative
9 reinjection at Platform Holly, which would be basically
10 the separating the oil and gas and water at 421-2, and
11 instead of injecting it in 421-1, it would go
12 out -- shipped out to Holly. And, in that case, 421-1
13 would go away as well, but the separation would still
14 occur on 421-2.

15 And there's other alternatives that will be
16 looked at, but will be discarded as far as the rationale
17 for not analyzing those alternatives. However, the other
18 alternatives come up from the public scoping or we'll have
19 to look at those in the Environmental Impact Report.

20 The NOP briefly describes several issue areas
21 that would have a potential significant impact effect on
22 the environment from the proposed project. These namely
23 are safety, hazardous materials, air quality, including
24 greenhouse gases, water quality, marine and terrestrial
25 biological resources and land use and recreation.

1 So the Environmental Impact Report will look at
2 those in detail, since they'll most likely have the most
3 significant impacts on those resources.

4 And that's basically what I have as far as the
5 project outline and what we intend to analyze in the
6 Environmental Impact Report.

7 At this point, are there any questions or
8 clarifications from the audience?

9 Yes, David. Come up here, please.

10 MR. SANGSTER: It's just a question.

11 PROJECT MANAGER GILLIES: Well, they just -- so
12 we get it recorded.

13 MR. SANGSTER: Sure. I have a lot of other
14 issues that I'll put in writing. But one question came
15 up --

16 PROJECT MANAGER GILLIES: Can I get your name for
17 the record, please.

18 MR. SANGSTER: David Sangster, Ellwood resident.

19 The one question came up, you mentioned back into
20 production. Does that involve any new drilling?

21 PROJECT MANAGER GILLIES: No.

22 MR. SANGSTER: No.

23 PROJECT MANAGER GILLIES: The wells are already
24 there. Basically, it would be --

25 MR. SANGSTER: Open the well or --

1 PROJECT MANAGER GILLIES: Yeah, returning it back
2 to production.

3 MR. SANGSTER: Sure, and maybe some engineering
4 project or something involved with that.

5 PROJECT MANAGER GILLIES: It will be a -- what do
6 you call it, a submersible pump that would be installed
7 into the well to restart the production. So there won't
8 be any new drilling. The well is already drilled.

9 MR. SANGSTER: Okay.

10 PROJECT MANAGER GILLIES: It's just a matter of
11 pumping the oil back up for production.

12 MR. SANGSTER: And a side issue was it
13 considered -- is it possible to access the same field from
14 Holly?

15 PROJECT MANAGER GILLIES: We looked at that, and
16 it's technically infeasible, because the 421 oil field, as
17 I understand it, is shallower compared to what's being
18 drilled from Holly. So you couldn't technically drill
19 from Holly and bring it back up to reach 421. So we do
20 analyze that in the document. We'll analyze that in the
21 document. That will be discarded, because it's not
22 technically feasible.

23 MR. SANGSTER: Okay.

24 PROJECT MANAGER GILLIES: Is that correct, Steve?
25 All right. Well, if nobody has any other

1 questions, we'll go ahead and start the public comment
2 period. I'll ask Carla Frisk to come up, please.

3 MS. FRISK: Do I have to go first?

4 PROJECT MANAGER GILLIES: Oh, sorry. It's last
5 one in, first one up.

6 (Laughter.)

7 PROJECT MANAGER GILLIES: All right. Linda.

8 MS. FRISK: I'm close.

9 MS. KROP: You owe me.

10 Good afternoon. My name is Linda Krop, K-r-o-p.
11 I'm chief counsel of the Environmental Defense Center,
12 here today representing the Los Padres Sierra Club, Get
13 Oil Out, Citizens Planning Association and Citizens of
14 Goleta Valley. And we will be submitting written comments
15 on the record.

16 First of all, thank you for holding this hearing
17 locally. It's really important to provide access to our
18 community. This is an issue that affects us all pretty
19 directly. It's right along a coastline that's heavily
20 used by the public for recreation, and other purposes.

21 This is one of those classic cases of wrong
22 project in the wrong place at the wrong time. It's a very
23 precarious location for a project like this. It's very
24 outdated. It's very risky. It will pose significant
25 impacts to our coastline. We understand there are certain

1 parameters that guide the State's review of this project,
2 given that it is an existing lease and that there has been
3 production from this lease in the past, but we do want you
4 to pay very close attention to these concerns.

5 EDC and our clients have all been involved with
6 this issue since 1994, when the oil spill occurred, and
7 we've been monitoring the progress at the site ever since
8 then. We have many concerns. One, the fact that the
9 facilities are so old, and we don't know exactly what
10 conditions some of them are in. We're concerned about the
11 integrity and safety of some of the infrastructure. And
12 some of that is mentioned in the NOP, but it may go beyond
13 the pipeline itself and involve some of the production
14 facilities as well.

12-1

15 We are concerned about the potential for an oil
16 spill in a very biologically rich part of our coastal
17 tideland areas. We are concerned about problems with
18 processing, whether the processing occurs on the pier or
19 at the Ellwood Onshore Facility. Both of those create
20 issues that we're concerned about processing at the pier.
21 It creates concerns about safety, about leakage or spills
22 right into the ocean and along the coast. Processing at
23 the Ellwood Onshore Facility involves, you know, prolonged
24 use of a facility that this community has been trying to
25 phase out.

12-2

1 All of these need to be addressed in the
 2 Environmental Impact Report. In addition, it's important
 3 to have an accurate and complete project description. One
 4 of the key components of this project is to address the
 5 pressurization issue. And so we hope that the EIR will
 6 include a comprehensive analysis of what is causing that
 7 pressurization, what the life might be, how that affects
 8 the production of the field and the life of the project.

12-3

9 The NOP indicates that the life of the project is
 10 12 years, and we would like that to be carefully analyzed,
 11 as indicated in the document itself. That may or may not
 12 be the case. It depends on economics, as well as
 13 production, as well as pressurization. So all of that
 14 needs to be addressed and clarified.

12-4

15 The impacts analysis in the EIR must address the
 16 risks and potential consequences of leaks and spills, the
 17 enhanced risk due to the use of aging facilities. And
 18 with respect to greenhouse gas emissions, we see that that
 19 has been added to the revised NOP and we greatly
 20 appreciate that. This is an issue that we've been
 21 monitoring closely with all projects in our service area.
 22 And we would like to point out and applaud the State Lands
 23 Commission for using a zero emission threshold for
 24 analyzing greenhouse gas emissions in prior EIRs in this
 25 area for the Full Field Development Project and for the

12-5

12-6

1 Ellwood Marine Terminal. And so we urge you to use that
2 same threshold, so that we have a full quantification of
3 emissions and full potential mitigation, should the
4 project go forward.

12-6
cont'd

5 Finally, with respect to alternatives, because of
6 the problems with both processing at the pier and at the
7 Ellwood Onshore Facility, we ask that the EIR address
8 processing at Las Flores Canyon, which is the one
9 consolidated processing site on the south coast. It was
10 designated back in the late 1980s, and as such, the
11 Ellwood Onshore Facility was redesignated for recreational
12 uses in 1990. And so we would like to see the alternative
13 of processing at the consolidated site in the EIR.

12-7

14 Thank you very much.

15 PROJECT MANAGER GILLIES: Thank you, Linda.
16 Fran Farina.

17 MS. FARINA: I'm Fran Farina, F-a-r-i-n-a,
18 representing the Los Padres Sierra Club. We are a client
19 of Environmental Defense Fund. And Linda Krop has
20 expressed, in a broad overview, some of the general
21 concerns we have, which will be amplified in written
22 comments that will be submitted to you.

23 I personally would like to thank you for coming
24 again and we do so much appreciate this. And we brought
25 you good weather today. No rain.

1 PROJECT MANAGER GILLIES: We appreciate coming
2 down. That's for sure.

3 MS. FARINA: One of the issues that Sierra Club
4 cares deeply about is eliminating the non-conforming use
5 of the Ellwood Onshore Facility, so that the public can
6 once again have access to this coastal area without an
7 industrial structure. Therefore, anything that enhances
8 or lengthens the life of this facility is of great concern
9 to us.

12-8

10 I did notice in the NOP there was reference to
11 modifications to the EOF. And I'm not sure what those are
12 going to be, but that could cause an extension of the life
13 of the facility, again, which is not something that we
14 want to see.

12-9

15 We, too, are concerned with the age of the
16 infrastructure. I'm reminded of an automobile that might
17 have been in storage for almost 20 years. I mean it just
18 doesn't start right up. And when you're exposed to the
19 elements the way a lot of this infrastructure has been, a
20 very careful analysis of its condition and that which has
21 to be rehabilitated or replaced is important.

22 The repressurization issue, we have heard from
23 State Lands staff of their concern, because none of us
24 understand why it is happening. This is the opportunity
25 to truly get a comprehensive investigative study and

12-10

1 analysis, because we don't want to see this happen again.

2 So you may not have had the money. Venoco, with
3 your permission, is going to be doing the drilling, but
4 this needs to be answered thoroughly, and we will be
5 looking for that.

6 And finally, again on the emissions, greenhouse
7 gas emissions, we do appreciate the standard that has been 12-11
8 set and would hope that the zero emission standard would
9 be continued for this project.

10 Thank you.

11 PROJECT MANAGER GILLIES: Thank you, Fran.

12 Okay, Carla Frisk.

13 MR. SANGSTER: Carla, just so you know, that
14 microphone is not working. It's the one on the podium, so
15 you want to speak loud enough to be heard.

16 MS. FRISK: Oh, it's this one. Okay.

17 Thank you very much, my name is Carla Frisk. I'm
18 here today representing the organization Get Oil Out,
19 which, as you all know, was formed 39 years ago in the
20 aftermath of the oil spill.

21 I want to thank you for the opportunity to speak
22 to you today at the scoping hearing on this Environmental
23 Impact Report for lease 421.

24 Given that this project is the resumption of oil
25 production in an area where the oil field may be

1 repressurizing, it is certainly not the typical oil and
2 gas project that we usually speak to you about. In fact,
3 Get Oil Out finds that this is a project of Catch 22s.

4 The first catch is that the production from lease
5 421 ceased almost 20 years ago. Had the State Lands
6 Commission required that production be restarted shortly
7 thereafter or abandonment of the site, we wouldn't
8 actually be here today before you considering a project to
9 extract oil and gas from a small pier located essentially
10 in the surf zone, a project that would most likely never
11 be approved if it were a new proposal due to the
12 devastating impacts that would result from an oil spill in
13 this very volatile location.

14 The second catch is that it is being asserted in
15 the NOP that without drilling, it cannot be determined if
16 and to what extent the field is repressurizing and why.
17 So without the drilling, you can't get the answers that
18 you need, but without the answers that you need, you might
19 not even only need the drilling.

20 While the project description includes a 12-year
21 estimate of the economic productivity, it includes no
22 information about whether or not this time frame would
23 address the repressurization issue. The DEIR must
24 therefore include a full investigation of the
25 repressurization issue, so that decision makers will know

12-12

1 whether or not this project would only end up being a
2 Band-Aid, a Band-Aid that benefits only the producer with
3 no resolution of the repressurization into the future.

4 As with all oil and gas projects that involve
5 older infrastructure, and we've certainly had our fair
6 share of them, GOO is very concerned about the use of this
7 aging facilities -- these aging facilities, especially the 12-13
8 six-inch pipeline that connects PRC 421 to line 96, a
9 concern that is actually reflected in the NOP on page
10 seven.

11 We laud the inclusion of the analysis of the
12 project's impact on greenhouse gases and climate change,
13 and encourage you to calculate those greenhouse gas 12-14
14 emissions with a zero emission threshold, which the State
15 Lands Commission has, in fact, done in the past.

16 GOO also strongly supports the inclusion of both
17 the no-project alternative with pressurized testing, as
18 well as an alternative that includes processing at Las
19 Flores Canyon.

20 Including the no-project with pressurized testing 12-15
21 alternative would, if for no other reason, provide
22 decision makers with additional information, tools as it
23 were, to address the repressurization issue with or
24 without this project now or in the future.

25 In conclusion, given that Get Oil Out's birth was

1 in the aftermath of the 1969 oil spill, we cannot under
2 emphasize the need for a very thorough evaluation of the
3 risks of an oil spill in this area with this equipment,
4 and the impacts of such an oil spill that would occur
5 right literally on our coast.

12-16

6 So again, we appreciate that opportunity to be
7 here today and if you have any questions, I'll be around.

8 PROJECT MANAGER GILLIES: Thank you, Carla.
9 Barbara Massey.

10 MS. MASSEY: Barbara Massey, M-a-s-s-e-y.

11 I agree with the previous speakers and only have
12 really a few comments to make. There should be a
13 discussion regarding the buildings and non- -- and use of
14 non-conforming facility. The EOF really should have been
15 closed years ago and been decommissioned at that time.

12-17

16 A site plan of the EOF with accurate drawings and
17 locations of the proposed modifications should be included
18 in the EIR. The seismic section of line 96 should be
19 included in the EIR not incorporated by reference. The
20 information would not be easily available to the public
21 otherwise.

12-18

22 The location of the piers makes them susceptible
23 to tsunamis. That's a hard thing to say in a row. Sorry
24 And this area has a high probability for earthquakes and
25 liquefaction.

12-19

1 Expanding use of the EOF and full protection at
2 Pier 421 creates a potential for increased health and
3 safety risks to the new housing, both at the bluffs and
4 now Haskell's Landing.

12-20

5 One final thing, the parking for construction
6 workers should be provided on site. Construction workers
7 should be prohibited from using the public lot at Bacara,
8 as currently is the case in the other construction
9 projects.

12-21

10 Thank you for the opportunity to speak today.

11 PROJECT MANAGER GILLIES: Thank you, Barbara.

12 Our last speaker is Dr. Ingborg Cox.

13 DR. COX: Which one -- this is not working? Is
14 this the one working?

15 (Laughter.)

16 DR. COX: Dr. Ingborg Cox, C-o-x. First name is
17 spelled I-n-g-b-o-r-g.

18 I want to find out why is the California State
19 Lands Commission allowing Venoco to do projects on a, in
20 essence, what I think is a piecemeal fashion?

21 This process minimizes and distorts the impacts
22 that the entire project will have on the citizens of
23 Goleta. Their request to reactivate PRC provides an
24 opportunity to review what has been done in the area and
25 what is planned for the future.

1 PRC 421 was constructed in 1928. The scope of
2 the new EIR should take into consideration all facilities
3 or appendages that are going to be connected with PRC 421
4 or 421-2. And these are the EOF, line 96, the new
5 pipeline, and the LFC terminal. The hydro testing being 12-22
6 proposed should have already been part of the regular
7 maintenance that Venoco must do. If the pipeline has not
8 been used since 1994, and has been shut down since then,
9 the hydro testing proposed should be done prior to any
10 permits being considered.

11 The new gas liquid cyclone separator subjects
12 fluids to hydraulic vortex and centrifugal force. If the
13 current pipelines are not built for these stresses, you 12-23
14 will have a big problem if crude oil gets released into
15 the environment. Hydro testing should be done prior to
16 the Draft EIR, then considered.

17 What happens if the whole line needs to be
18 changed? 12-24

19 According to the line 96 EIR, pipelines that
20 transport fluid from a well head to a treating facility,
21 which I understand is the case here, are under the 12-25
22 jurisdiction of the DOT. As the lead agency, is the
23 California State Lands Commission coordinating with the
24 DOT?

25 The inlet and outlet flow rates are computed and

1 compared by the programmable logic controller. Where is
2 this located? Who is in charge of inputting the data and
3 who analyzes and oversees that the data is correct?

12-26

4 Is this the DOT or the California State Lands
5 Commission?

6 Housing should not be eliminated from the
7 potential environmental impacts. If PRC 421, in any way,
8 is connected with the EOF, one needs to consider oil leak
9 type ruptures that affect the population and the
10 surrounding area.

12-27

11 What is the fresh water consumption going to be?

12 The monthly water consumption at the EOF is
13 300,000 gallons of fresh water per month. The projected
14 additional thousand barrels of water per day would trigger
15 water rationing for the citizens of Goleta.

16 Currently, Lake Cachuma is low. And in the news
17 yesterday, it was stated that the public would have to
18 begin conservation measures in the next years if the rain
19 does not materialize.

12-28

20 In considering this new project, the water effect
21 and usage needs to be carefully evaluated. If the public
22 has to ration, why is a new project being considered that
23 will use such large amounts of water?

24 Extending the life of a non-conforming facility
25 by connecting PRC 421 with the EOF should not be allowed.

12-29

1 I agree with the previous speakers.

2 I'm also aware of two cases of non-Hodgkin's
3 lymphoma of children that were living near the EMT. This
4 type of lymphoma is linked to benzene exposure. And in my
5 opinion, if we are going to be dealing with benzene, this
6 needs to be part of the analysis. The area surrounding
7 PRC 421 has abandoned perilous artifacts from prior oil
8 activity.

12-30

9 Venoco should be mandated to remove all these
10 abandoned artifacts located near their premises, and the
11 weakened walls that could collapse should be removed and
12 replaced. Tsunamis need also to be considered. An
13 earthquake that occurred on the coast of Point Arguello in
14 1927 initiated a Tsunami. Another one was in the
15 earthquake of 1812 along the Santa Barbara channel.

12-31

12-32

16 The calculated run-up of a tsunami going into
17 Bell Canyon includes the area that is currently occupied
18 by the EOF. I also support the zero emission standard.

12-33

19 Thank you.

20 PROJECT MANAGER GILLIES: Thank you, Dr. Cox.

21 That's it for the speakers. Does anybody else
22 want to speak?

23 Okay. As far as the schedule goes, the NOP is
24 still out for review. The close of the comment period is
25 April 29th, Monday of this month. So after we'll be

1 working with Amec Environmental to prepare the Draft EIR
2 for public review. We're hoping that would come out late
3 spring, early summer for 60-day review. And we'll be down
4 here again for public hearings on the document when that
5 comes out.

6 As I mentioned, this project is subject to a
7 joint review panel with the City of Goleta and Coastal
8 Commission. So they'll be reviewing the admin drafts
9 before it becomes circulated for public review.

10 And after that, we anticipate preparing a Final
11 EIR before the end of the year and getting it to our
12 Commission about that time or early next year 2014.

13 This project has been around awhile, and we just
14 want to get it to our Commission to get a decision on it.

15 So that's it. If nobody has anything else, we'll
16 go ahead and close the meeting.

17 Thank you for coming.

18 (Thereupon the meeting closed at 3:39 p.m.)

19 PROJECT MANAGER GILLIES: It's 6:15 and no one
20 from the public has arrived and we're going to go ahead
21 and close the meeting for the 6 o'clock session.

22 (Thereupon the meeting adjourned at 6:15 p.m.)
23
24
25

1 C E R T I F I C A T E O F R E P O R T E R

2 I, JAMES F. PETERS, a Certified Shorthand
3 Reporter of the State of California, and Registered
4 Professional Reporter, do hereby certify:

5 That I am a disinterested person herein; that the
6 foregoing California State Lands Commission public scoping
7 meeting was recorded electronically and reported in
8 shorthand by me, James F. Peters, a Certified Shorthand
9 Reporter of the State of California;

10 I further certify that I am not of counsel or
11 attorney for any of the parties to said meeting nor in any
12 way interested in the outcome of said meeting.

13 IN WITNESS WHEREOF, I have hereunto set my hand
14 this 12th day of April, 2013.

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23 JAMES F. PETERS, CSR, RPR
24 Certified Shorthand Reporter
25 License No. 10063

Supplementary Comments on Revised PRC 421 Decommissioning Project

From: Ingeborg Cox MD, MPH

Bell Canyon Creek impacts need to be considered since the proposed pipeline connecting to the Ellwood Onshore Facility will run near the area according to maps provided.

Bell Canyon Creek has been designated a riparian ESHA according to the California Coastal Commission.

ARTICLE 5 Section 30240: Environmentally sensitive habitat areas; adjacent development states:

“(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas. “

“(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.”

Bell Canyon Creek is also the home to several special status species including monarch butterflies, red legged frog and tidewater goby. As far as I know, both the red legged frog and tidewater goby are listed on state and federal Endangered Species Act.

Placement of the pipeline in proximity to an ESHA has the potential to devastate the ESHA if there is an underground leak or break in the pipeline. The consequences of these potential events have to be evaluated in the EIR.

Has the required buffer area of 100 feet been considered? When was the last time any water samples were taken from Bell Canyon Creek and analyzed to see if any contamination has occurred secondary to the EOF?

When Mr. David Sangster asked the SLC on Wednesday April 3, 2013 in the 3p.m. public input session if there was any more drilling going to be done on PRC 421, from what I understood the answer was in the negative and he was told that all drilling that was going to be done has been done.

Under the Wallover and Hyatt Findings Application 4-85-343 of the Coastal Commission “the entire beach frontage from the mean high tide line to the toe of the bluff will be dedicated as a public easement for beach use.”

Is the beach frontage in the area considered a public easement? If this is the case it should be taken to the citizens of Goleta for their input with several public meetings.

It has been at least 20 years since the first EIR evaluation of the whole PRC 421 project. In this time there has been a population expansion in the Ellwood/Winchester Canyon area of Goleta, which has shifted the local population west ward. Consequently the population and housing should NOT be eliminated of the EIR.

(more)

Considering the new, revised PRC 421 proposal recommendations to connect the pipeline to the EOF in my opinion undermines the County's long standing determination that the facility is a non conforming use.

Also if any fracking or slant drilling is planned for this project, this needs to be stated upfront and has to be analyzed extensively or prohibited.

Fracking uses large amounts of water and if there is the possibility of a water shortage, as I mentioned in my oral comments, this needs to be analyzed. What will happen if there is another drought like the prolonged Santa Barbara drought of 1945-1951? What happens if the underground water gets contaminated because of fracking or drilling?

Do not forget what has happened in Butler County, Pennsylvania where the citizens cannot use their own water because of the contamination.

Appendix C

SAFETY

MEMORANDUM**DRAFT**To: Paul Mount
Chief, MRMD

Date: October __, 2006

From: Jeffrey W. Adams
Petroleum Reservoir Engineer

File: PRC 421.1

Subject: **Review of PRC 421 Ellwood Field Vaqueros Reservoir Re-pressurization****Purpose**

This memo was compiled to summarize various historical events related to Lease PRC 421 and past efforts to determine the cause of re-pressurization in the Vaqueros reservoir of the Ellwood Oil Field and whether certain wells are in communication. This memo also discusses possible testing procedures to resolve the issue(s). Actual recommendations will follow the review of a procedure that Venoco will be sending to MRMD very soon. According to Venoco's reservoir engineer Steve Horner, they have retained Dr. Iraj Ershaghi for consultation on a long-term test procedure.

Background

The Ellwood Oil Field is located in Santa Barbara County near Goleta. The east-west trending field lies mostly offshore, and is approximately 4 miles by ½ mile in area. The field consists of eastern and western structural highs separated by a saddle. The highs are in the form of ovate domes or doubly-plunging anticlines. The main oil reservoir is primarily within the 350-400 ft thick Vaqueros sandstone formation. A structure map of the field is attached (see Page 8).

The field was discovered in 1928. In 1929 the State issued offshore Oil and Gas Lease Nos. 88, 89, 90, 91, 92, 93, 94, and 98, primarily covering the eastern high. Piers were constructed from shore and 74 wells were drilled from the piers from 1929 through the early 1940s. The State later issued Leases PRC 129 and 208 covering the western high, where approximately 35 wells were drilled from onshore drill sites. In 1949, State Lease PRC 421 was issued as a renewal of Lease No. 89. In that same year, Lease No. 91 became PRC 424 and Lease No. 98 became PRC 428. On the lease of interest, PRC 421, a total of nine wells were drilled, all during the 1930s.

Wells on the onshore portion of the field were all abandoned by the mid 1930s. By the mid 1950s, more than half the offshore wells in the field had already watered-out and were plugged and abandoned. By the early 1970s, only PRCs 129, 208, and 421 remained active. On PRC 421, all but two wells were plugged and abandoned. The two wells that remained were 421 #2, a producer, and 421 #1, a producer that was converted to injection in 1973. An attached graph (see Page 9) shows the production history of the leases that have produced from the field.

Further offshore from the Ellwood field, but still in State waters, is a separate structure known as the South Ellwood Oil Field, where Leases PRC 3120 and 3242 are located. Platform Holly was constructed in the late 1960s to develop the two leases. Development of the prolific Monterey

Shale reservoir necessitated a new well for disposal of Holly's produced water. Well WD #1 was drilled in 1973 for that purpose into a down-structure portion of the Vaqueros. The well was drilled at the Ellwood Onshore Facility, about 2,500 feet northwest of the PRC 421 wells. The location was chosen partly because the Vaqueros there is thought to be isolated from the oil-bearing part of the Vaqueros (the Ellwood Field) by an east-west trending, high-angle reverse fault. The fault is called the La Vigia Fault, and it is situated roughly mid-way between WD #1 and PRC 421 wells.

By the end of 1993, production from PRC 129 and 208 had ceased, and 421 #2 became the only producing well in the Ellwood field. Mobil Oil was the lessee at this time, having acquired the lease from ARCO. In March 1994, Mobil discovered a leak in its oil transfer pipeline from 421 #2, and the well was immediately shut-in. Well 421 #1, which was being used to dispose of produced water from 421 #2, was also shut-in. In 1997, Venoco acquired the shut-in lease from Mobil. In late 2000, Venoco discovered minor leaks in both wellheads. A temporary pipeline was installed, and when well 421 #2 was opened it flowed a total of 17,000 bbls of nearly pure oil over the next ten months. 421 #1 produced only a little gas. Subsurface safety valves and packers were then installed in the wells and they have remained shut-in since.

The fact that 421 #2 flowed after being shut-in for six years suggested the Vaqueros reservoir had re-pressurized. The re-pressurization of the Ellwood field was a concern because a number of the offshore wells in the area may not have been properly plugged and abandoned in the 1930s, 40s, and 50s. According to a review done by MRMD's Dan Dudak in 2001, at least 20 of the 72 wells drilled into the Vaqueros reservoir from offshore piers had potential deficiencies in their abandonment procedures.

Two possible causes for re-pressurization were suggested – natural aquifer influx, and injection into well WD #1. Although available evidence, as discussed in more detail below, indicated that injection was most likely not the cause, the MRMD in 2001 requested Venoco conduct some type of interference test to see if WD #1 was in communication with the PRC 421 wells. This was done in an effort to rule out injection as a cause, since such a test would confirm or refute the previously-held notion that the La Vigia fault was a barrier that isolated WD #1 from the wells on PRC 421. But because Venoco was prohibited from flowing 421 #2, a conventional interference test was not possible. A pressure fall-off test of WD #1 was suggested as an alternative. A fall-off test could confirm the presence of the La Vigia fault as a no-flow boundary. However, that test was also not possible at the time because WD #1 was needed for continuous disposal of Platform Holly's produced water.

In lieu of well testing, a suggestion was made that material balance calculations and/or reservoir simulation might help determine the cause of re-pressurization. In early 2002, Venoco proposed a joint study to estimate remaining oil and the magnitude of water influx since the 1994 field shut-in. But detailed material balance calculations and/or reservoir simulation efforts were never pursued, possibly because sufficient pressure data was not available, and data on actual production and injection from the early years was considered unreliable.

In late 2002, an opportunity for a fall-off test on WD #1 finally arose when Platform Holly was scheduled for maintenance. The fall-off test was performed Dec. 4, 2002. Although pressure data

suggested some type of barrier was detected, calculations showed that the 4-hour injection period and the 37-hour fall-off period were inadequate to investigate the reservoir to the suspected distance of the La Vigia fault.

In early 2003, MRMD advised Venoco that the question of communication remained unresolved, and that a new test should be designed and conducted with sufficiently long injection and fall-off periods. Venoco never proposed another test, so in early 2004, MRMD had to remind Venoco again of its obligation to find out if the pressure continues to rise, and what is causing that rise. Venoco finally submitted a new interference test design in late 2004.

Venoco's 2004 test design was for a longer duration fall-off test for WD #1 with simultaneous pressure monitoring in 421 #2. The producer would require approximately 48 hours of cleanup prior to installing pressure gauges and performing the test. Injection into WD #1 would occur for 7 days at 10,000 b/d then halted for 7 days to create a pulse and to measure fall-off pressures. Injection would resume for 30 days at 10,000 b/d, then be reduced to 2,000 b/d for 30 more days. Then the gauges would be recovered from 421 #2 for analysis and the well would be placed on normal production. Venoco's proposed test assumed WD #1 would no longer be in continual use because produced water from Platform Holly would be disposed of into the Monterey via a Holly well, and that Venoco would have permission from all applicable agencies to return 421 #2 to production. Neither of these assumptions came to be during 2005, so the test was never conducted.

In March 2006, Paul Mount reminded MRMD staff of the need to determine if pressure is still building in the Vaqueros reservoir, its cause, and what test or tests should be performed. There remains a concern as to whether any older abandoned wells might leak, or if they might require re-abandonment.

Re-Pressurization of Vaqueros Reservoir

In addition to the 2000 leakage incident and subsequent flowing of 421 #2, other evidence shows that pressure in the Vaqueros reservoir has been rising for many years, even prior to the 1994 shut-in of 421 #2. Fluid level data from 421 #2 from late 1987 through 2001 shows a steadily increasing bottomhole pressure, from about 690 psi to 1,350 psi over the 13-year period. A graph of the pressure data is attached (see Page 9). Assuming a 0.433 psi/ft pure water gradient, hydrostatic pressure at the 3,322 ft vertical subsea datum would be 1,439 psi. In addition to re-pressurization, the crest of the structure appears to have been re-saturated with oil through gravity segregation. This is evident in the production performance of well 421 #2. During the mid 1960s through 1994, the oil rate increased while the water cut decreased, and then the well produced nearly pure oil during the temporary production period in 2000-01. A performance plot of 421 #2 is attached (see Page 10).

Evidence WD #1 is Not Cause

Both geologic data and cumulative production and injection data suggest WD #1 is not the cause of re-pressurization in the Vaqueros reservoir, and that WD #1 and the wells on PRC 421 penetrate separate fault blocks that are not in communication.

Exploratory and development drilling in the Ellwood field revealed a subsurface geologic structure that includes the east-west trending La Vigia fault. Drilling showed the fault to be a trapping mechanism for the oil accumulation in the Vaqueros sand on the northern flank of the eastern high, as there was no oil found in the Vaqueros sand north of the fault. This is the reason WD #1 was drilled there.

An examination of cumulative production and injection data for the Ellwood field suggests that the volume of injection was insufficient to cause an increase in pressure throughout the Vaqueros, even if there was communication. Cumulative production from the Vaqueros includes 104 E6 bbl of oil, 148 E6 bbl water, and 93 E6 mcf gas. Approximately 75% of the cumulative gross production, or 189 E6 bbl, came from the eastern high where PRC 421 is located. About 25%, or 63 E6 bbl, came from the western high where PRC 208 and PRC 129 were located. An attached diagrammatic cross-section (see Page 10) shows the approximate relative magnitudes of production and injection into the two highs.

Excluding injection into WD #1, cumulative injection into the Vaqueros from wells drilled into the Ellwood Field totaled only 37 E6 bbl. This represents only 25% of the produced water, or 15% of the total gross production. Further, the vast majority of the injection (35 E6 bbl) was put into the western high. The cumulative injection-to-gross ratio for the western high is 0.55, while the ratio for the eastern high is only 0.01, meaning hardly any of the 189 E6 bbl of gross production taken from the eastern high was replaced. This is because during the 1930s through 1960s, most of the produced water from leases on the eastern high was simply dumped into the ocean.

Injection of Platform Holly's produced water into WD #1 has totaled 60 E6 bbls for 1973 through 2005. The injection was placed into the Vaqueros sand, but north of the La Vigia fault, and roughly 2,000 ft structurally lower than the crestal wells 421 #1 and #2. If WD #1 is in communication with the Vaqueros reservoir south of the fault, and not in an isolated block, then cumulative injection to gross ratio would still be only $(37+60) \div (104+148) = 0.38$. Ignoring gas, there is a net voidage of nearly 155 E6 bbls for the Ellwood Field. In a closed system, this would certainly result in a decrease in reservoir pressure. Therefore, injection into well WD #1 cannot be responsible for the pressure increase evidenced in well 421 #2. Iraj Ershaghi reached the same conclusion in 2003.

In addition to the net voidage argument, Ershaghi performed some calculations to estimate the time necessary to see a measurable pressure response between WD #1 and the 421 wells. He calculated dimensionless pressure $P_D = [(k)(h)(\Delta p)/(141.2)(q)(\mu)(B)]$ for an assumed Δp , then used Theis' type curve to obtain t_D/r_D^2 from P_D . The t_D/r_D^2 was then used to estimate the time required for that pressure response from $\Delta t = [(t_D/r_D^2)(\phi)(\mu)(c_t)(r_w^2(r/r_w)^2)/(0.000264)(k)]$. The calculations, which are detailed in an attachment (see Page 11), show that Δt would be quite large, on the order of months or years depending on the assumptions used. This was further evidence that injection into WD #1 could not have been responsible for the magnitude of the pressure increase seen at well 421 #2.

Evidence Aquifer Influx is Cause

Several lines of evidence suggest that aquifer influx (natural water drive) is the cause of re-pressurization in the Vaqueros reservoir of the Ellwood Field. First, geologic data from exploratory

and development drilling showed the oil accumulation lies atop an extensive aquifer. Second, an active water drive was suspected early in the field's development, as most initial wells flowed, and many experienced rapid water encroachment. And third, evidence of pressure support from aquifer influx, as well as gravity segregation, can be seen in the production performance of 421 #2. As previously mentioned, a plot of recent performance for 421 #2 is attached (see Page 10).

Well 421 #2, after flowing initially at more than 1,000 b/d oil, experienced a steep decline from 1930 to 1940. The water rate increased steadily during that time. But between the early 1940s to mid 1960s, its oil rate held steady at 20-30 b/d, with about 90% water cut. Then oil rate increased, gradually but steadily, to nearly 60 b/d in 2000. The incline began more than a decade prior to commencement of injection into WD #1. In fact, the production performance of 421 #2 seems completely unaffected by the onset of injection in WD #1. Instead, the gradual increase in oil rate in 421 #2 appears to be the result of the well's position at the crest of the structure, the elimination of competing wells in the field, and the combined effect of both natural aquifer influx and produced water re-injection into nearby well 421 #1. By mid 1960s to the early 1970s, most producers in the eastern part of the field were plugged and abandoned due to uneconomic production. At the same time, injection into the reservoir was initiated for the first time. From the 1930s through the 1960s, most produced water from the Ellwood field was simply disposed of in the ocean. Well 421 #1 was converted from producer to injector in the early 1970s, and it appears to have increased the oil rate in 421 #2 by at least 10 bopd. Thus, natural aquifer influx and gravity segregation seems to have caused both the re-pressurization in the crestal portion of the Vaqueros reservoir and the improvement in oil rate in 421 #2.

Discussion of Test Options

In early 2003, after the inconclusive fall-off test, Ershaghi stated there are basically two test options left if the question of communication was to be answered. The first option would be to install gauges into shut-in well 421 #2 and continue injection into WD #1. The second would be to shut-in WD #1 and monitor pressure there while putting 421 #2 on production. Of the two options, Ershaghi recommended halting injection into WD #1 and producing 421 #2. He believed this would not only allow any interference to be seen, but would also immediately help offset any natural aquifer re-pressurization, thus minimizing the risk of leaks in older abandoned wells. However, the need for continuous disposal of produced water from Holly prohibited shutting-in WD #1. Installing gauges into 421 #2 would have required cleaning out the mud placed in the well in 2001.

In 2004, Ershaghi again raised the idea of a material balance study to quantify the natural aquifer influx. To get the reservoir pressures needed for the study, a concurrent fall-off test in WD #1 and build-up test in 421 #2 could be conducted. Of course, the buildup test would require some period of production. As an alternative, Ershaghi suggested simply installing quartz pressure gauges (with a sensitivity of 0.01 psi and surface recording capability) in 421 #2, so that minute pressure changes from aquifer influx could be detected. Again, the problem with this idea was that injection into WD #1 would have to be curtailed indefinitely, and 421 #2 would require cleanout.

Further discussion during 2004 between MRMD's Iraj Ershaghi and John Yu, and Venoco's Steve Horner, eventually led to Venoco's August 2004 test proposal. As described previously, that test would involve a longer duration fall-off test for WD #1 with simultaneous pressure monitoring in 421

#2. After producing 421 #2 for about 48 hours, pressure gauges would be installed. Approximately 10,000 b/d of water would be injected into WD #1 for 7 days, then halted for 7 days to measure pressures, then injection would resume for 30 days at 10,000 b/d, then another 30 days at 2,000 b/d. If communication existed, the pressure pulses created by the various injection rates would be detected at 421 #2. Again, this test assumed WD #1 would no longer be in continual use because Venoco would be injecting Holly's produced water into the Monterey, and permission would be given to produce 421 #2. Since neither of these assumptions came to be during 2005, the test was never conducted.

In April 2006, in a letter signed by SLC's Dwight Sanders, Venoco was advised that the *No Project Alternative* of the PRC 421 Recommissioning Project EIR should include a program to test the reservoir pressure, and that the results of that test would form the basis for recommendations as to the ultimate disposition of the wells on PRC 421. Venoco was told that the testing program would allow a predetermined level of production from the wells for a specified period of time (six months to one year).

May 2006 Proposed Design

In May 2006, Venoco's Steve Horner emailed to MRMD staff (Alex Reid and Jeff Adams) a preliminary design for a new interference test. In light of the April 2006 letter mentioned above, Horner designed a test where 421 #2 would be on production and WD #1 would be an observation well while shut-in. Horner used commercial pressure transient analysis software to model a test with 421 #2 producing for one year at 700 b/d and then shut-in for one year. The test was modeled for two possibilities – with aquifer influx, and without aquifer influx. The aquifer influx was modeled as injection equivalent to 5,000 b/d. The model suggests the proposed test should be able to distinguish between the two possibilities, and that the effect of 421 #2 production on WD #1 should also be obvious if communication exists.

With no aquifer influx, the model predicts that the initial pressure of 1400 psi at WD #1 will fall to 1398 psi after one month and to 1390 psi after one year. The pressure falls as long as production continues in 421 #2. When production stops after one year, the pressure slowly recovers over the next year to about 1396 psi. With aquifer influx, the model predicts that the initial pressure of 1400 psi at WD #1 will fall for about 2-1/2 months, to about 1397 psi or so. Then the pressure would slowly increase in response to aquifer influx, which is assumed to be stronger than the production at 421 #2. The pressure might rise at 2 psi per month. Then when 421 #2 ceases production, the pressure in WD #1 will increase at a slightly faster rate, perhaps 3 psi per month according to the model. The model runs Steve Horner prepared did not include one for the pressure at WD #1 if is isolated from 421 #2 by the La Vigia Fault.

July 2006 Meeting with Iraj Ershaghi

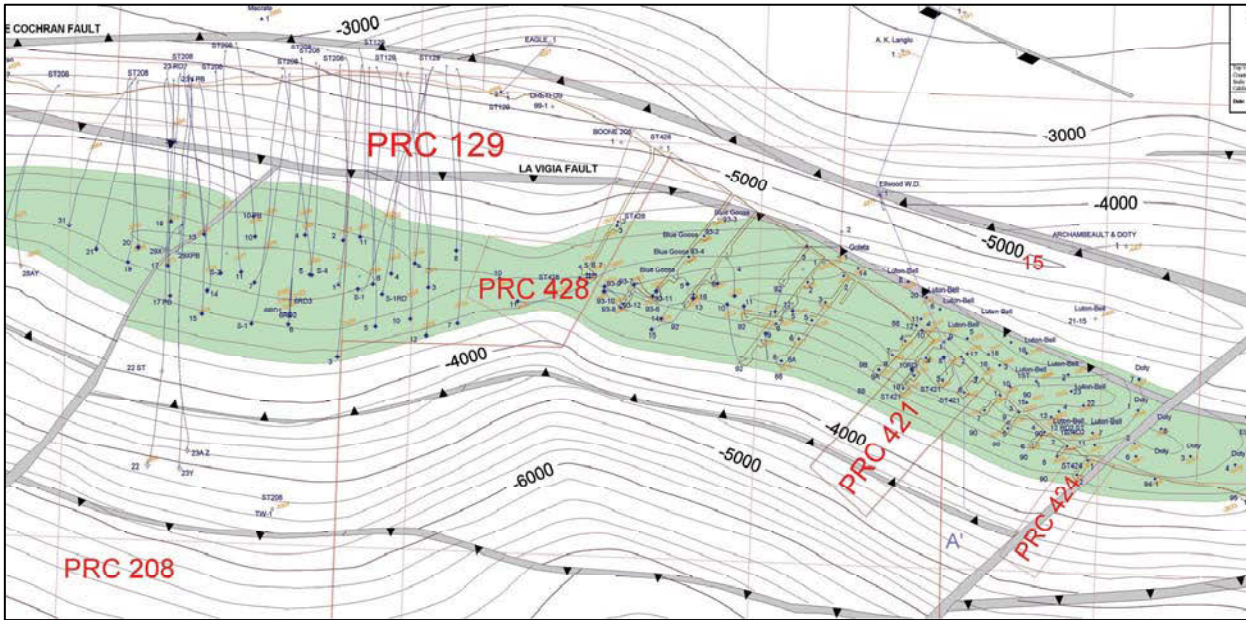
On July 27th, MRMD staff (Alex Reid and Jeff Adams) met with Steve Horner and Iraj Ershaghi to discuss possible testing procedures to address the concerns of MRMD. We briefly reviewed the bases for concluding that WD #1 could not have caused re-pressurization of Ellwood Vaqueros reservoir – namely, the fault that was a barrier to oil accumulation, and the fact there has been far too little injection relative to withdrawal to cause the pressure to increase. We agreed that re-pressurization must be due to natural aquifer influx. Regarding the question as to how high the

pressure can get, Ershaghi confirmed our view that because there is no artesian effect from Vaqueros outcrops in the mountain range north of the field, pressure in the Ellwood reservoir can rise no higher than hydrostatic.

With respect to possible tests, Ershaghi reiterated what he recommended in 2003, that putting 421 #2 on production for a period of time will have an immediate benefit of reducing reservoir pressure. And together with idling WD #1, or at least minimizing its use as an injector, producing 421 #2 will allow for a variety of testing types. We discussed the following tests: a fall-off test on WD #1 (longer than the 2002 test), a draw-down on 421 #2 when it is put on production, followed by a build-up test, plus monitoring the pressure in both WD #1 and 421 #2 during a full year of production followed by a year of shut-in. The results from the test should allow an estimation of the extent of aquifer influx by detecting the current oil-water interface, and confirm the sealing nature of the La Vigia fault. Horner will prepare a detailed test procedure, have it reviewed by Ershaghi, and then send it by letter to James Hemphill as soon as possible.

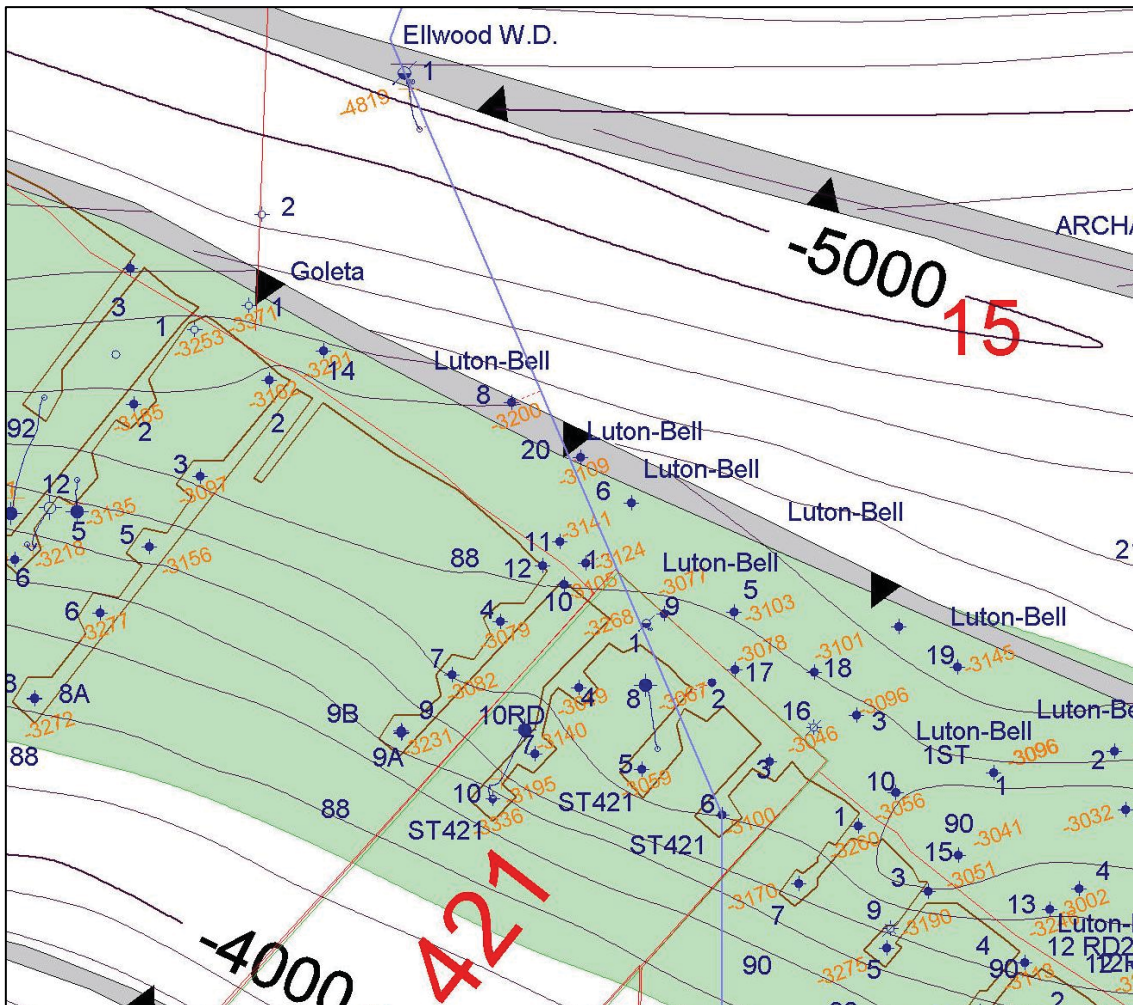
Jeffrey W. Adams
Petroleum Reservoir Engineer

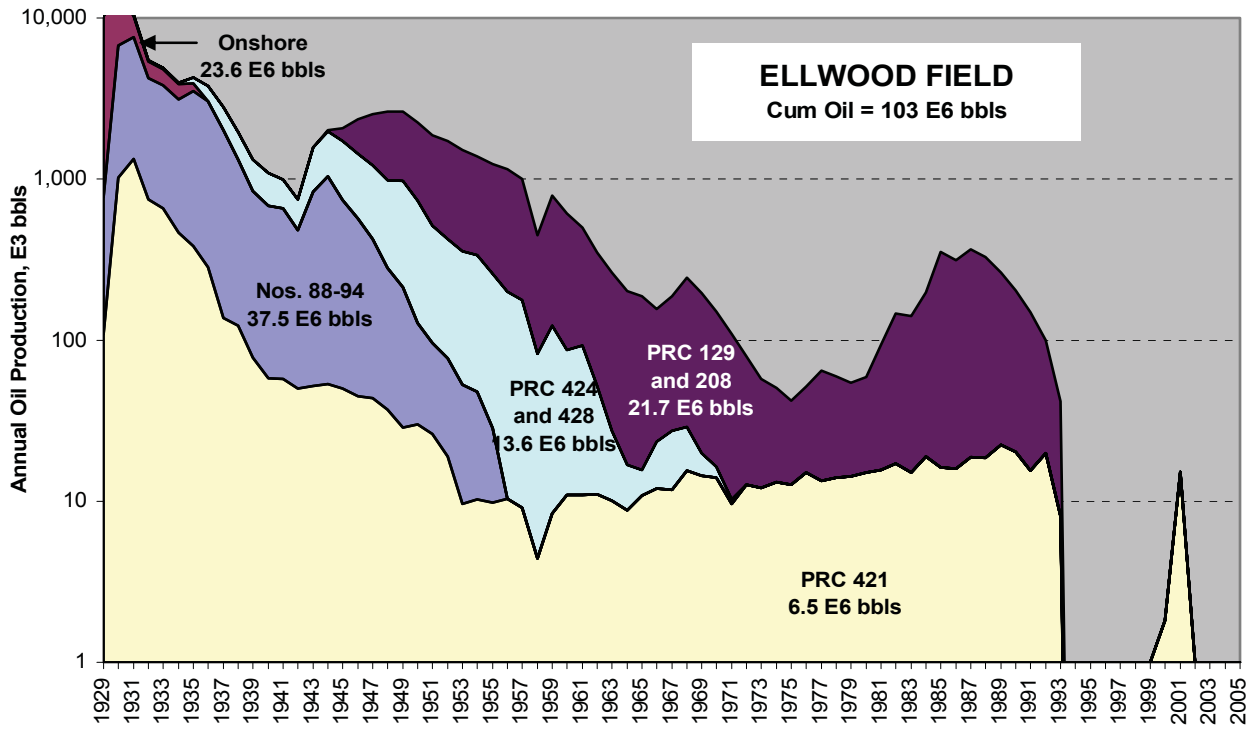
cc: Greg Scott
James Hemphill
Marina Voskanian
Alex Reid



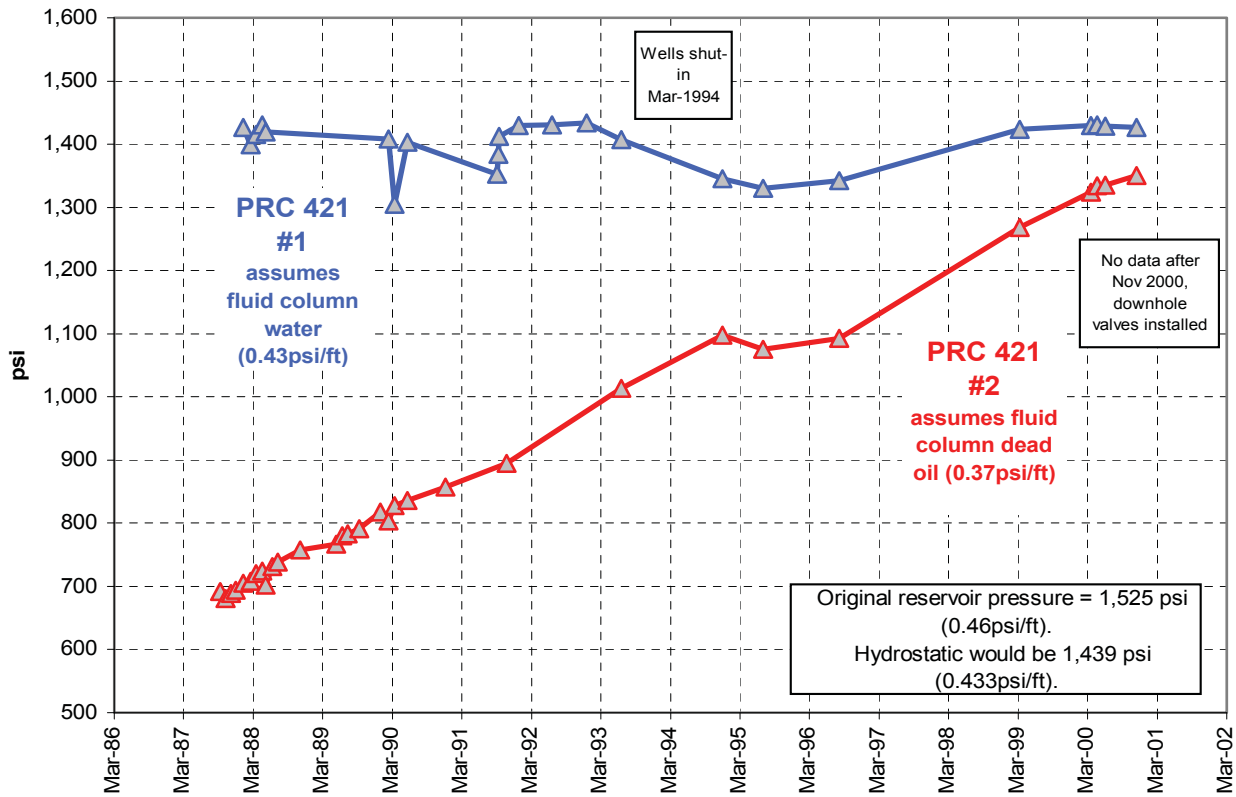
Above: Venoco's Structure Map of Ellwood Oil Field, 2004, contours on top of Vaqueros.

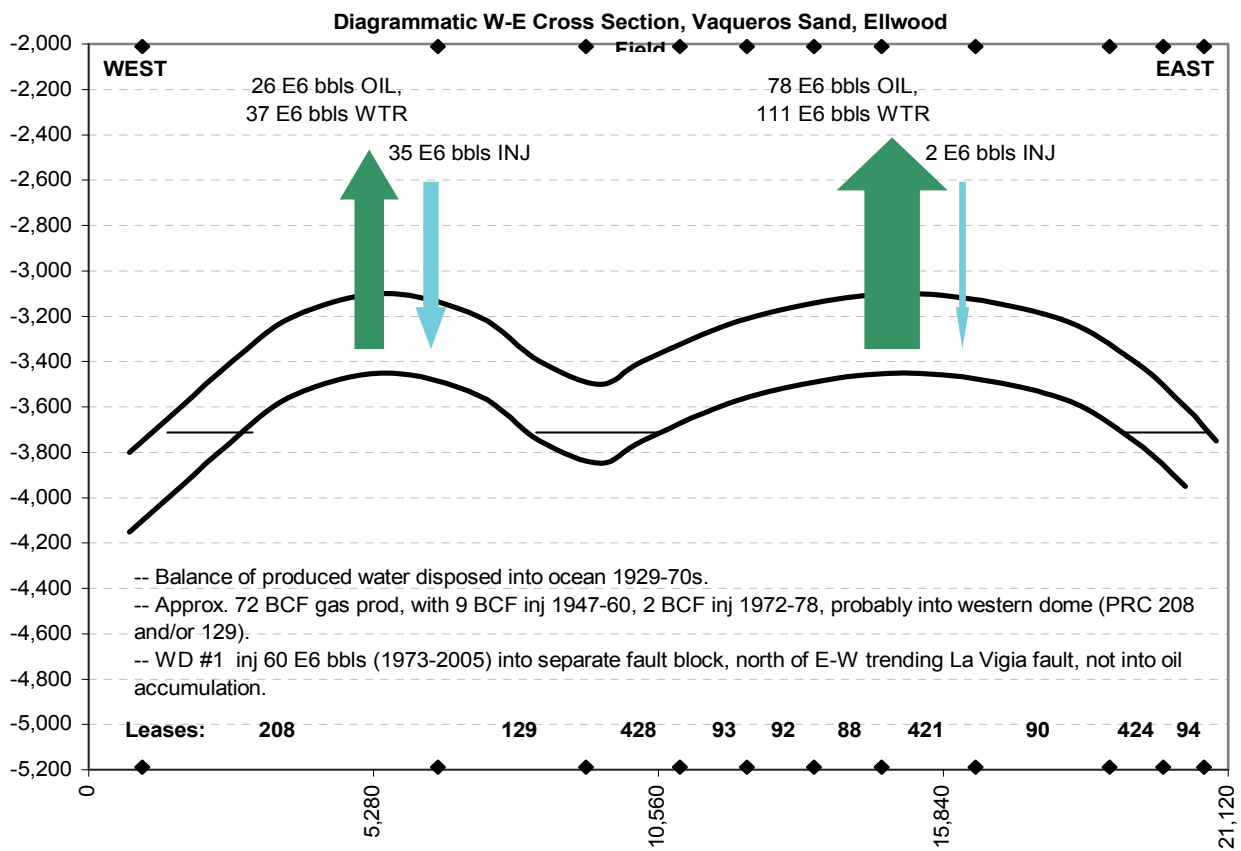
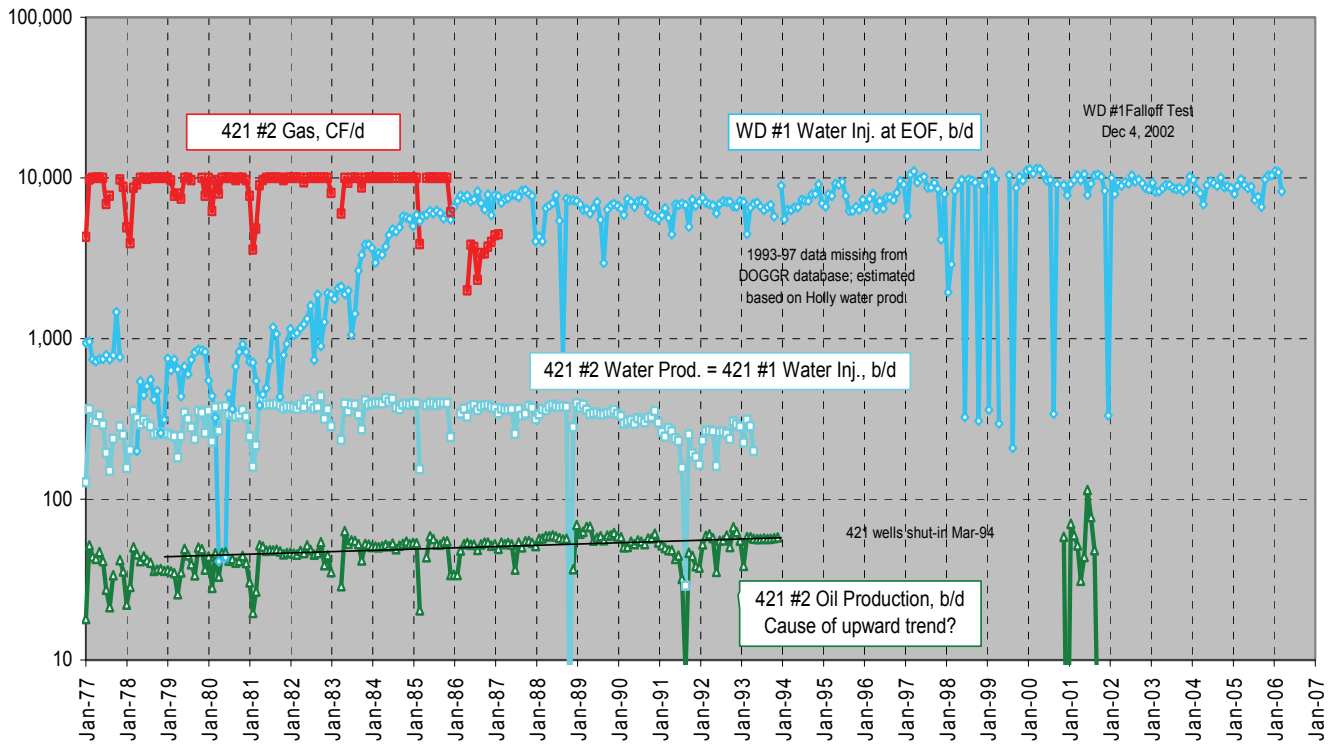
Below: Excerpt from same map showing relative locations of WD #1 and 421 wells.





PRC 421 Wells: Static BHP at 3,323' VSS, from Fluid Level Data





Estimated Time to see Pressure Response via Interference Testing

Calculations use following relationships, and assume no wellbore storage or skin.

$$P_D = [(k)(h)(\Delta p)/(141.2)(q)(\mu)(B)] \rightarrow t_D/r_D^2$$

$$\Delta t = [(t_D/r_D^2)(\phi)(\mu)(c_i)(r_w^2(r/r_w)^2)/(0.000264)(k)]$$

t_D/r_D^2 from Theis type curve, Fig.C.2 in SPE Monograph 5, Advances in Well Test Analysis

Ershaghi's 2003 Calculations (adjusted for 2,500 ft instead of 1,000 ft)

Basic assumptions: $k = 40$ md, $h = 350$ ft, $q = 1,000$ b/d, $B = 1.1$, $\phi = 0.25$, $r_w = 0.5$ ft, $r = 2,500$ ft

For $\mu = 2$ cp and $c_i = 4 \text{ E-}6 \text{ psi}^{-1}$

Δp , psi	P_D	t_D/r_D^2	Δt , hrs	Δt , days	Δt , wks	Δt , mos	Δt , yrs
100	4.51	4,000	4.73E+06	197,285	28,184	6,490	541
10	0.45	0.88	1,042	43	6	1.4	0.12

For $\mu = 10$ cp and $c_i = 40 \text{ E-}6 \text{ psi}^{-1}$

Δp , psi	P_D	t_D/r_D^2	Δt , hrs	Δt , days	Δt , wks	Δt , mos	Δt , yrs
100	0.90	2.4	142,045	5,919	846	195	16.2
10	0.09	0.24	14,205	592	85	19	1.62

Months or years required to see response of 10 psi or more.

Using Venoco's assumptions for $k = 44$ md and $c_i = 5.8 \text{ E-}6 \text{ psi}^{-1}$

For $\mu = 10$ cp

Δp , psi	P_D	t_D/r_D^2	Δt , hrs	Δt , days	Δt , wks	Δt , mos	Δt , yrs
100	0.99	2.90	22,625	943	135	31	2.58
10	0.10	0.24	1,833	76	11	3	0.21

For $\mu = 2$ cp

Δp , psi	P_D	t_D/r_D^2	Δt , hrs	Δt , days	Δt , wks	Δt , mos	Δt , yrs
100	4.96	8,000	1.25E+07	520,116	74,302	17,109	1,425
10	0.50	0.93	1.45E+03	60	9	2.0	0.2

Similar results to above.

Additional Calculations (based on Venoco's PTA modeling)

Assumes: $k = 92$ md, $h = 400$ ft, $q = 700$ b/d, $B = 1.1$, $\phi = 0.257$, $r_w = 0.5$ ft, $r = 2,500$ ft, $c_i = 5.8 \text{ E-}6 \text{ psi}^{-1}$

For $\mu = 1$ cp

Δp , psi	P_D	t_D/r_D^2	Δt , hrs	Δt , days	Δt , wks	Δt , mos	Δt , yrs
10	3.38	350	134,251	5,594	799	184	15.3

For $\mu = 2$ cp

Δp , psi	P_D	t_D/r_D^2	Δt , hrs	Δt , days	Δt , wks	Δt , mos	Δt , yrs
10	1.69	13.0	9,973	416	59	14	1.1
2	0.34	0.58	445	19	3	0.6	0.05

Close to Venoco's model prediction: Approx. 1 month for 2 psi response; 1 year for 10 psi response.

TECHNICAL REVIEW OF VENOCO'S PROPOSAL TO CRUDE OIL PRODUCTION THE BEACHFRONT LEASE LOCATED ON STATE LEASE PRC-421

1.0 INTRODUCTION

The Beachfront Lease is located on State Lease PRC 421, adjacent to the Sandpiper Golf Course, near Hollister Avenue and Highway 101. The facilities occupy approximately 10,000 square feet of pier space. The well is not currently producing. Venoco is proposing to return these facilities to production. This would entail removal of old production equipment from Oil Piers 421-1 and 421-2, reactivation of the oil well on Pier 421-2 with the capacity of producing up to 500 BPD of Crude oil, installation of supporting pipeline and electric infrastructure between Pier 421-2 and the Ellwood Onshore Facility (EOF), and modification of facilities at the EOF to manage PRC 421 production.

2.0 SCOPE OF REVIEW

This review is to be limited to the oil and gas production facilities required to lift the produced fluid to the surface, separate the oil water and gas, dispose of the water and gas and to transport the crude oil to existing Line 96. Decommissioning of Pier 421-1 and eventual decommissioning of Pier 421-2 are not included. Venoco's proposed production plan was reviewed along with two alternate plans.

2.1 Proposed Project Key Components

- Well 421-2 will be used as the production well for an estimated 20 years. (This is the projected time required to produce the recoverable reserves.)
- Electric Submersible Pump (ESP) to lift the Crude Oil.
- Transportation of the crude oil/gas/water in a 3" flow line protected inside an existing 6" line to the EOF
- Separation of oil/gas/water emulsion at the EOF.
- Mixture of PRC 421 production with that of Platform Holly for transport through Line 96 to the Plains All American Pipeline, LLC Coastal Pipeline.
- Rejection of the produced water and gas down injection well WD-1 at the EOF.

2.2 Recommissioning Using Historic Methods Key Components

- Well 421-2 will be used as the production well for an estimated 12 years. (This is the projected time required to produce the recoverable reserves.)
- Place a Gas Engine Powered Sucker Rod (similar to the original) to lift the Crude Oil.
- Transportation of the combined stream of oil, water and gas via 2" flow line, protected inside the 6" line to the Ellwood Onshore Facilities for Separation and water disposal.
- Crude oil and gas would be mixed with the Holly crude oil and gas streams.

2.3 Oil Processing on Pier 421-2 Key Components

- Well 421-2 will be used as the production well for an estimated 20 years. (This is the projected time required to produce the recoverable reserves.)
- ESP to lift the Crude Oil.
- Cyclone separation of the Crude oil from the water and gas located at Pier 421-2.
- Rejection of the produced water and gas down Well 421-1.
- Transportation of the crude oil in a 2" flow line protected inside an existing 6" line to Line 96 and water/gas in a 2" flow line to well 421-1 inside the same 6" line.

3.0 DISCUSSION OF PROPOSED PLAN

3.1 Electric Submersible Pump (ESP)

Electric Submersible Pump (ESP) to lift the produced fluids is a proven technology that has been used for a number of years in the oil and gas industry. A multistage pump is placed in the casing below the liquid level. The variable speed electric motor use is to driver the pump. The pressure and flow rate is controlled by changing the speed of the pump. The pump is protected by a number of safety devices including under current, over current, RPM and down hole pressure.

The pump is designed to pump 1000BPD of well head fluid at 978 psig discharge pressure. With the pump placed at -2000 feet, the estimated Tubing Shut in Pressure is 415 psig at current frequency of 60 Hz.

The Production tubing, well head and valves through the Surface Safety Valve (SSV) are all rated at 3000 pisp, well above the 978 pumping down hole pressure and 415 psig SITP.

The SSSV and the SSV provide over pressure protection if required.

With the ESP installed down hole inside the casing there are the advantages of the equipment not being exposed to any wave action or potential noise pollution.

Venoco repaired the casing during the work over in 2002 and currently do not plan to do any additional testing prior to startup. The potential for leakage may be remote but a retest of existing casing would be prudent.

3.2 Transportation of the Crude Oil

Transportation of the crude oil is in a 3" flow line protected inside an existing 6" line to the EOF. The existing 6" flow line is of unknown condition. It is planned to repair a segment of the line, clean the line, pressure test it, install a plastic liner and install the 3" flow lines inside the 6" line. The 6" line will provide mechanical protection for the 2" flow lines and containment should a leak develop in the flow line. The installation of a single line inside the 6" protective casing has the

advantage of either of the flow line coating being damaged during installation. This would mean a better corrosion protection.

The line will be monitored by a Pressure Switch High on the annulus. Electrical short tests are planned to ensure isolation between the 3" flow line and the 6" protective casing. If a leak developed in the 6" casing prior to a leak developing in the 3" flow line, the PSH would not trip.

The flow line could contain approximately 300 gallons of fluid when completely liquid packed. Consideration should be given to charging the annulus with 20 psig of nitrogen This would provide a means of monitoring both the 2" flow line leak by high pressure trip and a leak in the 6" casing by a low pressure trip.

Line 96 has a reported design pressure of 285 psig. The proposed production equipment and piping has a design pressure of 740 psig. The well SITP is 415 psig. Over pressure protection will need to be considered for Line 96.

4.0 RECOMMISSIONING USING HISTORIC METHODS

Well 421-2 will be used as the production well for an estimated 20 years (This is the projected time required to produce the recoverable reserves). A gas engine power sucker rod pump would be used to lift the crude oil to the surface. The technology is prove and was used in the early days of oil and gas production. It is still used in many oil fields throughout the world. This alternate proposal is being considered because it was used prior to production shut in.

It would require a fuel gas line to be laid from EOF to supply fuel for the Gas engine. There would be an increase in noise 24/7. The equipment would be exposed to the environment and the potential of wave forces during a storm.

Combined production of oil, water, and gas would be transported via 3" flow line, protected inside the 6" line to the EOF for separation and water disposal.

The line will be monitored by a Pressure Switch High on the annulus. Electrical short tests are planned to ensure isolation between the 2" flow lines and the 6" protective casing. If a leak developed in the 6" casing prior to a leak developing in the 2" flow line, the PSH would not trip.

The flow line could contain approximately 300 gallons of fluid when completely liquid packed. Consideration should be given to charging the annulus with 20 psig of nitrogen This would provide a means of monitoring both the 2" flow line leak by high pressure trip and a leak in the 6" casing by a low pressure trip.

5.0 OIL PROCESSING ON PIER 421-2

5.1 Cyclone Separation

Cyclone separation of the Crude oil from the water and gas is located at Pier 421-2 and would be exposed to the weather and potential wave forces. Cyclone separation is a proven technology and been used for a number years in the oil and gas industry. Cyclone liquid gas separation has been used well over 40 years and the liquid- liquid hydro-cyclone separation has been used for nearly 20 years.

The operating pressure of the separators is approximately 200 psig and the design pressure is 740 psig. Both Vessels will be designed and fabricated in accordance with ASME VIII pressure vessel code. Venoco has advised that they plan to install pressure safety valves (PSV) on each vessel to ensure thermal and fire over pressure protection.

It is planned to allow the PSV to discharge to the atmosphere with any liquids being collected in the open well cellar. Thermal or fire PSV normally do not need to operate. In this case, three conditions must exist, the vessel must contain liquids, the manual valves on the vessel which are normally opened for the system to operate must be closed and a heat source must be present such as a fire or the sun.

If the vessel were completely full of liquid, the volume would be approximately 270 gallon.

The separators and associated instruments, valves and equipment will be connected either with flanges, hubs, screwed connections which provide potential crude oil and gas leakage points. Equipment such as this would normally be located in an area where it would not be exposed to potential wave action.

5.2 Rejection of the Produced Water and Gas Down Well 421-1

Rejection of the produced water and gas down Well 421-1 is located within a few hundred yards of the producing well. As with 421-2, the injection well's casing was repaired and tested as part of the 2002 work over. The required injection pressure is outside the scope of this review, but with 3000 psig well head tubing design pressure the system is capable of containing the ESP pump pressure.

5.3 Transportation of the Crude Oil

Transportation of the crude oil is in a 2" flow line protected inside an existing 6" line to line 96 and water/gas in a 2" flow line to well 421-1 inside the same 6" line. The existing 6" flow line is of unknown condition. It is planned to clean the line, pressure test it, install a plastic liner and install two 2" flow lines inside the 6" line. The 6" line will provide mechanical protection for the 2" flow lines and containment should a leak develop in the flow line.

**Section 9812 – Santa Barbara County
ACP5**



Map of Santa Barbara County Showing Three Coastal Reaches and Included Ecologically Sensitive Sites

Section 9812 - Santa Barbara County

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Section 9812.2 Cultural and Other Resources at Risk

Section 9812.3 Economic Sites

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Section 9812.5 Shoreline Access

9812.1 Environmentally Sensitive Sites

The purpose of this section is to provide background, definitions, and philosophy behind the Site Summary and Strategy Sheets in ACP Section 9800. Both Federal and State laws require that sites having special ecological sensitivity be identified and provisions be made to protect or otherwise mitigate for the site impacts from spills. In California these locations are termed "Sensitive Sites". A narrative and diagram of each site with specific ecological and operational information has been developed.

The development of specific protection strategies to meet the site specific needs was conducted using a standardized protocol to ensure consistency for California's entire coast. The process of site visits, training exercises, and discussions allows trustees and response experts to exchange concerns and feasibility limitations in forming protection strategies. Using this approach, the local area committee incorporates input of State and Federal trustees, and stakeholders (industry, spill response co-ops and contractors, non-governmental environmental groups, and other agencies) to form consensus on the appropriate site protection strategies and response resources. The committee will revise strategies based on new knowledge and to adapt to changing conditions.

The environmental sensitivity differs by location or season depending on conditions or the presence of species. A ranking index was developed in order to identify the relative protection priority of sites. These ranks define the environmental sensitivity of the area and its resources at risk. Accordingly each site is ranked A, B, or C based on the following definitions:

Category A - Extremely Sensitive - first priority for protection:

Wetlands, estuaries and lagoons with emergent vegetation (marsh-riparian ESI 10) Sheltered tidal flat (ESI 9); and Habitats for rare, threatened or endangered species (State or Federal); Sites of significant concentrations of vulnerable and sensitive species (e.g. pinniped pupping)

Category B - Very Sensitive - second priority for protection

Major pinniped haulout areas during non-pupping seasons; Moderate concentrations of vulnerable and sensitive species; other low energy habitats (ESI types 8A, 8B, 7 and 6B)

Category C - Sensitive - third priority for protection

Higher energy habitats (ESI 6A through 1) for example: *Habitats important to large numbers of species of sport, commercial value, and scientific interest or species experiencing significant population declines though not yet threatened.*

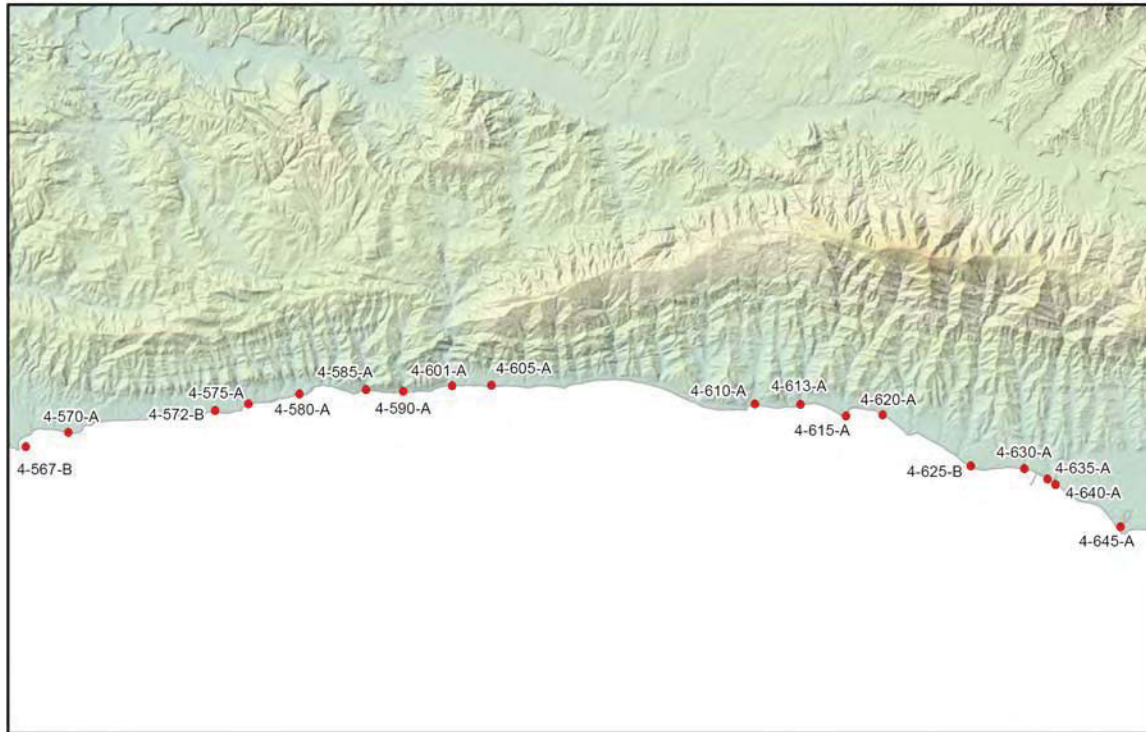
This section provides detailed information on Environmentally Sensitive Sites in Santa Barbara County. Each site is described on three sections: Site Summary, Site Strategy, and Diagram. The Site Summary page provides a brief description of the site including location, access, specific concerns, agency contacts, etc. The Site Strategy page provides specific information on response strategies to be implemented to protect the site from marine oil spills as well as recommended resources, site logistics, and access

information. These Site Strategies are intended as guidelines to assist responders during the initial hours of a spill response. The Diagram page shows the protection strategies, topography and roads.

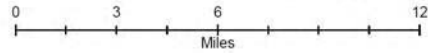
The intent of the site strategies is to provide initial recommendations to protect the site until actual conditions and needs at sensitive sites can be determined to provide appropriately modified strategies. In other words, strategies presented here are flexible and may require modification in real response situations. The strategies provided here are the best available response options for foreseeable typical wind and current conditions at the respective sites. Those conditions may not prevail at the time of the spill. Responders and planners may need to adjust strategies to meet the needs presented by prevailing conditions; following the initial emergency response many sites may have alternative strategies to accommodate differences in conditions.

Most sites have more than one protection strategy. These additional strategies may be used as back-ups to the primary protection strategy or as alternatives to accommodate prevailing conditions. It should be understood that the described strategies are intended as initial protection strategies for the first 24 hours of a spill. Additional or modified protection measures should also be considered.

Santa Barbara County West – Sensitive Sites



● Sensitive Site



Source: K. Wilson, J. Curtis

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4-567-A	Point Conception & Government Point	51
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4-590-A	Canada Del Agua Caliente	75
4-601-A	Gaviota Creek	79
4-605-C	Canada Del Alcatraz & Cementario Creeks	83
4-610-A	Refugio Creek	87
4-613-A	Corral-Las Flores Creeks	91
4-615-A	El Capitan Creek	95
4-620-A	Las Llagas (El Capitan Ranch Beach)	99
4-625-B	Naples	103
4-630-C	Eagle Canyon Creek	107
4-635-A	Tecolote Creek	111
4-640-A	Bell Canyon Creek	115
4-645-A	Devereaux Slough	119

County	USGS Quad	Thomas Guide Location	NOAA Chart	Latitude N	Longitude W
Santa Barbara	Dos Pueblos Cany	993 D-E x 2-3	18721	34.4267	119.9083
Last Page Update:					10/1/2005

SITE DESCRIPTION:

Bell canyon creek is a moderate sized creek with a well developed lagoon just west of sandpiper golf course; the sand berm which develops during summer is usually relatively low and the lagoon is subject to wash over especially during high tides. The creek flow during winter is usually enough to breach the berm. The beaches to the east and west are of fine to medium-grained sand, and often have very high volumes of debris (mostly wood and kelp) especially after rains. The Venoco oil facility lies 1/4 mile inland (see remarks).

SEASONAL and SPECIAL RESOURCE CONCERNS

Whenever lagoon mouth is open or subject to high tide wash over wetland biota are at risk.

RESOURCES OF PRIMARY CONCERN

Wetland biota: including Tidewater goby and possibly Steelhead trout; plus waterfowl and marsh vegetation

Waterfowl, seabirds (including Brown pelicans) and various shorebirds.

Sea otters have been known to pass through the area.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Cultural, Historical, and Archeological sites are known to exist in the area, however, the exact locations of these sites must be ascertained by contacting the Native American Heritage Commission at (916) 653-4082 and State Office of Historical Preservation (916) 653-6624, and/or the Central Coast Archeological Information Center (805) 893-2474.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name and Title	Organization	Phone (1st)	Phone (2nd)
	Mike Glassow	Central Coast Archeological Information Center	(805) 893-2474	
	Dave Ono Marine Biologist	DFG - Marine Region (Fisheries)	(805) 569-1221	
	Kristine Barsky Marine Biologist	DFG - Marine Region (Nearshore Species)	(805) 985-3114	
	Maurice Cardenas Fisheries Biologist	DFG - South Coast Reg 5 (Freshwater Species)	(805) 640-1852	
	Morgan Wehtje Wildlife Biologist	DFG - South Coast Reg 5 (Habitat)	(805) 491-3571	
	Stan Glowacki	NMFS - Steelhead	(562) 980-4061	(562) 980-4000
	Greg Villeneuve Vice Pres Golf Operation	Sandpiper Golf Course (Access)	(805) 968-1541	(805) 698-8332
		USFWS Ventura Office - Federally listed T/E species	(805) 644-1766	
		Venoco - Ellwood Plant (Emergency Numbers)	(805) 961-2339	(805) 961-2375
	Tony Martinez	Venoco (Ellwood Plant & Platform Gilda)	(805) 961-2301	
	Jeff MacDonald Ellwood Ops Supervisor	Venoco (Ellwood Plant & Platform Holly)	(805) 961-2301	(805) 455-9666

ADDITIONAL SITE SUMMARY COMMENTS:

Excellent aerial photo of site can be found on the California Coastal Records Project website (<http://www.californiacoastline.org/>). Image number of site: 200404648

REFERENCES:

1. RPI-ESI MAPS SOUTHERN CAL ATLAS
2. INVENTORY OF COASTAL WETLANDS IN SANTA BARBARA COUNTY - INTERIM REPORT. R. AMBROSE. 1993.

County	USGS Quad	Thomas Guide Location	NOAA Chart	Latitude N	Longitude W
Santa Barbara	Dos Pueblos Cany	993 D-E x 2-3	18721	34.4267	119.9083

Last Page Update: 10/1/2005

CONCERNS and ADVICE to RESPONDERS:

Primary spill threats from inland and marine sources. The primary objectives are to exclude oil from lagoon, pre-clean debris, and clean oil from shorelines. The lagoon is habitat for a Threatened/Endangered fish and other sensitive species. Animals and habitat can be injured by oil and response/cleanup activities unless responders minimize disturbance in stream, lagoon, and associated vegetation; avoid trampling oil into sediments; and follow protective conditions from IC and resource biologists.

HAZARDS and RESTRICTIONS:

Water Contamination - Unhealthy levels of coliform bacteria have been found intermittently in streams and on beaches in the Santa Barbara County area. Check with the Santa Barbara Ocean Quality Hotline, 805-681-4949, regarding health conditions prior to engaging in any activities which would require direct water contact. Use appropriate PPE, safety procedures, and include reference to potential health problems in any site safety plan.

SITE STRATEGIES

In the event of an inland spill it is important to control, confine, and recover as much of the oil as close to the source of discharge as possible using off-stream containment and collection methods. Unless otherwise stated, the strategies and equipment described below are for marine spills. However, they can be adapted for inland spills when the need arises. Resource needs will vary depending upon the location of the spill source, topography, existing habitat and biota, stream flows, and weather conditions.

Strategy 4-640.01 Objective: Berming - Prevent oil from contaminating the inlet when it is subject to tidal influence, low flows are present, and/or wave washover could occur if berm materials are present.

Berming - First, consult with resource trustees regarding wildlife issues before undertaking this activity. Build an earthen berm across the mouth of the inlet using onsite materials obtained from unvegetated areas below the high tide line to minimize damage to wildlife and habitat. Install under flow pipes in the berm to allow through flows and/or a spillway with a filter barrier to accommodate flow increases as weather conditions dictate. Cover the berm with sheet plastic to minimize erosion. Second, back the berm with swamp and sorbent booms to prevent contamination from entrainment, leakage and or washover. If there is skimmable oil present, deploy sorbents and contact the IC immediately regarding the use of skimmers and or other mechanical means for collecting oil. Monitor berm and associated features to maintain their integrity and effectiveness.

Strategy 4-640.02 Objective: Booming - Deploy exclusion booms across the inlet entrance to protect sensitive species and habitats when suitable berm building materials are unavailable, water flows are too great, or water depths are too great for berming.

Booming - Deploy exclusion booms across the inlet to minimize the likelihood of oiling the estuary. Place the booms in a configuration which forms an oil collection pocket which can be adjusted to accommodate changes in flow direction. Back exclusion booms with sorbent booms to minimize leakage. Line the shorelines and any side channels within the inlet to prevent collateral oiling. If there is skimmable oil present, deploy sorbents and contact the IC immediately regarding the use of skimmers and or other mechanical means for collecting oil. Monitor, adjust, and replace booms at least 2 x per day to maintain their integrity and effectiveness.

Strategy 4-640.03 Objective: Shoreline Precleaning - Prevent oiling of kelp, driftwood, vegetative debris, trash, and other materials to reduce collateral contamination and disposal problems.

Shoreline Precleaning - Consult with resource trustees regarding wildlife issues before undertaking this activity. Remove and store kelp, driftwood, vegetative debris, trash, and other materials which could become oiled and create environmental hazards and disposal problems. Pre-cleaning of debris from shorelines will be conducted by hand crews to the greatest practical extent to minimize disturbance to wildlife and their habitats. If heavy equipment or vehicles are required for this operation, request consultation from resource trustees and contact the IC for authorization. Segregate and dispose trash. Replace unoiled debris in its former location once the threat of oiling is past.

Table of Response Resources

Strategy Number	Harbor Boom	Swamp Boom	Other Boom Amount and Type	Sorb Boom	Anchoring Systems		Boom Boats	Skiffs	Skimmers		Staff	
					Num	Type and Gear			Num and Type	Deploy	Tending	

4-640.01		400		400	4							
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Special Equipment: 1 Front End Loader, 1 Roll Plastic, 3 Culvert Pipes, 20 Sand Bags, 15 Stakes (metal), 1 Stake Driver, 10ft Construction Fencing, 1 Hand Tools

4-640.02		400		400	8			1	1		5	2
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Special Equipment: 1 Waste Bin (20 yd), 1 Portable Oil Storage Tank OR Vacuum Truck

4-640.03

5

Special Equipment: 1- Vehicle (4wd), 100 Trash Bags, 1 Hand Tools

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)

From us 101 (west of S.B.) take Hollister Ave. Exit, towards ocean; turn right into Sandpiper Golf Course and continue right to the Ellwood plant. Good access from the Ellwood plant.

LAND ACCESS:

A. Access - Shorelines and streams in this site are accessible only through private property. Contact the landowner for permission to enter and information on road conditions. Beach access roads may require regrading before vehicles can enter or exit beaches. Barriers to longshore movement are variable according to tide and sand levels. Area may not be accessible in wet weather.

B. Access for ATV, 4-WD, and Heavy Equipment on beach.

WATER LOGISTICS:

Limitations: depth, obstructions:

Launching, Loading, Docking and Services Available: Santa Barbara Harbor is the nearest full service civilian harbor for full service berthing, launching and fueling. Response vessels could be loaded and small boats can be launched at Gaviota Pier with permission from State Beaches and Parks. Larger vessels can be loaded at Ellwood Pier with permission from Venoco and at Goleta Pier with permission from Santa Barbara County Parks.

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

LOGISTICS:

Potential Staging Area: Ellwood Plant

Potential Command Post: Ellwood Plant

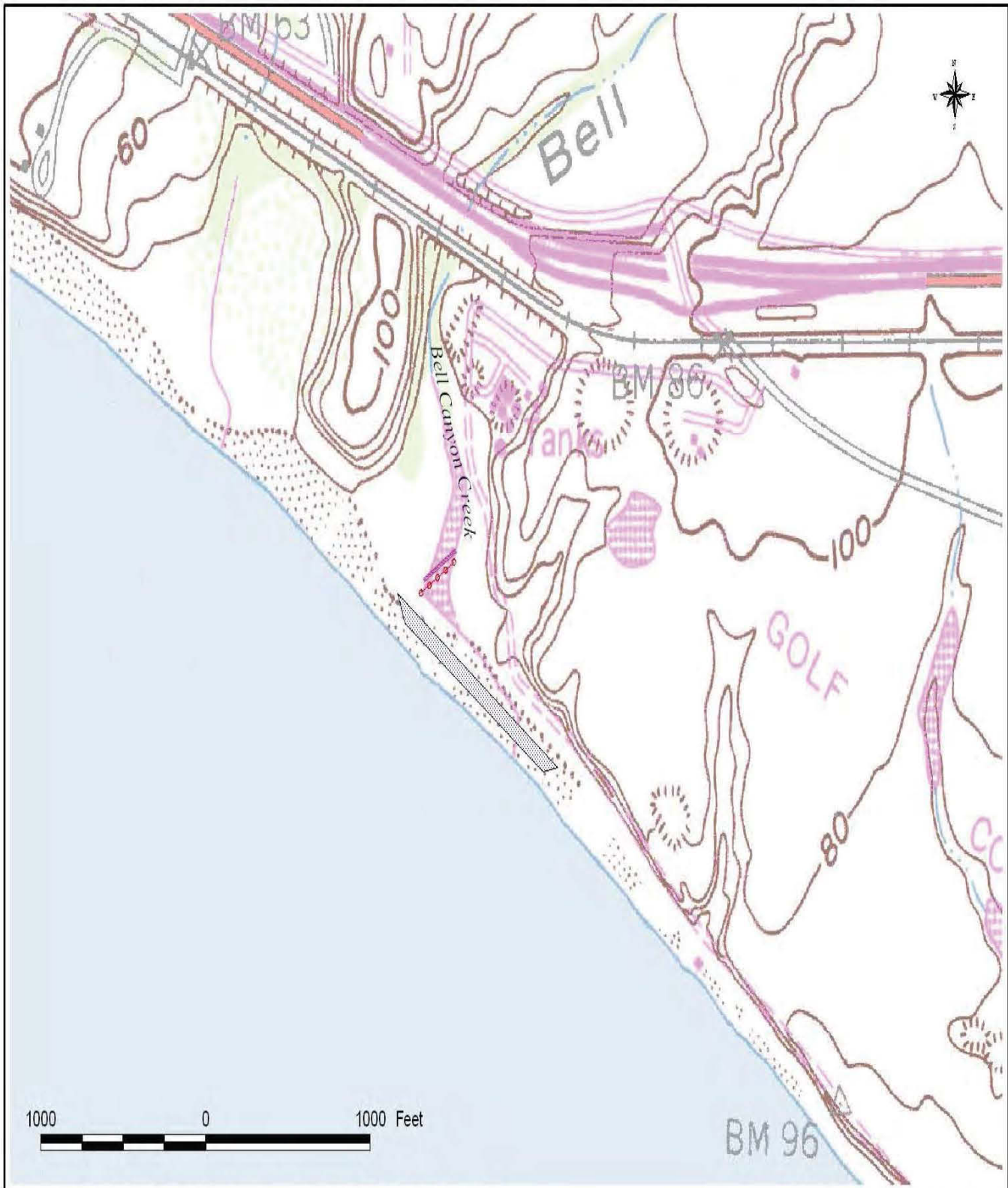
Closest Airport: Santa Barbara AP is 5 miles east.

COMMUNICATIONS PROBLEMS:

ADDITIONAL OPERATIONAL COMMENTS:

REMARKS CONT=D.

1. MONITOR STATUS OF BELL CANYON CREEK MOUTH - NATURAL SAND BERM DEVELOPMENT IS OFTEN POOR, OFFERING LITTLE PROTECTION.
2. THE VENOCO (formerly MOBIL) ELLWOOD ONSHORE FACILITY PROCESSES AND TRANSFERS OIL AND SOME NATURAL GAS FROM OFFSHORE THE PLATFORM, HOLLY. THE PLANT HAS SEVERAL TANKS BUT IS NOT AN OIL STORAGE FACILITY. VENOCO ALSO HAS A MARINE TERMINAL LOCATED APPROXIMATELY 2 MILES EAST OF THE OIL AND GAS PROCESSING FACILITY WHICH HAS TWO 65,000 BBL TANKS.
3. THIS SITE IS A REMOTE BEACH AND SO HAS RELATIVELY LOW PUBLIC RECREATIONAL USE (primary uses are surfing, and walking), HOWEVER, THE SANDPIPER GOLF COURSE AND THE BACARA SPA AND RESORT ARE LOCATED IN THE IMMEDIATE VICINITY THE ONSHORE FACILITY AND THE MARINE TERMINAL AND SHOULD BE CONSIDERED DURING ANY RESPONSE ACTIVITIES.



CALIFORNIA DEPARTMENT OF FISH & GAME (OSPR) and UNITED STATES COAST GUARD
 Site Number: 4-640-A Site Name: BELL CANYON CREEK

Ken Wilson (OSPR) & MSTC Seibel USCGR
 Date: 04/MAY/05

- Harbor Boom
- Swamp Boom
- Other Boom
- Dike or Berm
- Excelsior Fence
- sss / sfs
- tsa / sps
- tba/voo

County	USGS Quad	Thomas Guide Location	NOAA Chart	Latitude N	Longitude W
Santa Barbara	Hurricane Deck	993 H x 4-5	18721	34.7500	119.8783
Last Page Update:					10/1/2005

SITE DESCRIPTION:

Lies just north of Coal Oil point. This 45 acre slough contains freshwater emergent vegetation, salt marsh, tidal flats and sand dune habitats. The mouth is generally cut off from the ocean by a well developed sand berm except during heavy rainfall. East and West of the slough are extensive medium-grained sand beaches backed by vegetated dunes. Large surf and strong winds are common, especially in winter. The slough is part of the larger coal oil point natural reserve, managed by the University of California at Santa Barbara.

SEASONAL and SPECIAL RESOURCE CONCERNS

Whenever the slough is open to the ocean, typically only during heavy rainfall, wetlands biota are at risk.

RESOURCES OF PRIMARY CONCERN

Intermittent coastal wetlands.

Western snowy plovers (all year), California least terns (Apr-Sep), American coot, American wigeon, Black-crowned night heron, Canvasback, Green winged teal (Mar-Jul), Mallard, Pintail, Red-breasted merganser.

Sea otters have been known to move through the area.

California spiny lobster.

Tidewater goby (Aug-Nov).

Eelgrass, Surfgrass.

CULTURAL, HISTORIC, and ARCHEOLOGICAL SENSITIVITIES

Cultural, Historical, and Archeological sites are known to exist in the area, however, the exact locations of these sites must be ascertained by contacting the Native American Heritage Commission at (916) 653-4082 and State Office of Historical Preservation (916) 653-6624, and/or the Central Coast Archeological Information Center (805) 893-2474.

KEY CONTACTS: Trustee (T); Entry/Owner/Access (E); Cultural (C); or Other Assistance (O)

Type	Name and Title	Organization	Phone (1st)	Phone (2nd)
	Mike Glassow	Central Coast Archeological Information Center Devereux Foundation	(805) 893-2474 (805) 968-2525	
	Dave Ono Marine Biologist	DFG - Marine Region (Fisheries)	(805) 569-1221	
B	Kristine Barsky Marine Biologist	DFG - Marine Region (Nearshore Species)	(805) 985-3114	
B	Maurice Cardenas Fisheries Biologist	DFG - South Coast Reg 5 (Freshwater Species)	(805) 640-1852	
	Morgan Wehtje Wildlife Biologist	DFG - South Coast Reg 5 (Habitat)	(805) 491-3571	
	UCSB	UCSB (Environmental Health and Safety) UCSB Campus Police - Dispatch 24 Hr #	(805) 893-3194 (805) 893-3447	(805) 448-4089
	Cristina Sandoval Director - COP Reserve	UCSB Natural Reserve Sys. (Coal Oil Point) USFWS Ventura Office - Federally listed T/E species	(805) 451-2403 (805) 644-1766	(805) 893-4127

ADDITIONAL SITE SUMMARY COMMENTS:

Excellent aerial photo of site can be found on the California Coastal Records Project website (<http://www.californiacoastline.org/>). Image number of site: 200404680 to 200404683

REFERENCES: 1. "CALIFORNIA COASTAL RESOURCE GUIDE" AND "CALIFORNIA COASTAL ACCESS GUIDE" BY THE CALIFORNIA COASTAL COMMISSION. 2. "INVENTORY OF COASTAL WETLANDS IN SANTA BARBARA COUNTY". INTERIM REPORT. BY: R. AMBROSE. 1993. 3. PROPOSED "WESTERN SNOWY PLOVER CRITICAL HABITAT". BY: USFWS - VENTURA FIELD OFFICE. 4. "COASTAL INLET PROTECTION STRATEGIES FOR OIL SPILL RESPONSE - VOLUME 1." BY: RESEARCH PLANNING INC. 1993. 5. A*TIDEWATER GOBY 1996 DRAFT RECOVERY PLAN.

County	USGS Quad	Thomas Guide Location	NOAA Chart	Latitude N	Longitude W
Santa Barbara	Hurricane Deck	993 H x 4-5	18721	34.7500	119.8783

Last Page Update:	10/1/2005
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CONCERNS and ADVICE to RESPONDERS:

Primary spill threat from marine source. The primary objectives are to exclude oil from lagoon, pre-clean debris, and clean oil from shorelines. The lagoon is habitat for a Threatened/Endangered (T/E) fish. Two T/E birds nest in the dunes and upper beaches south of the River from Mar-Sept. Animals and habitat can be injured by oil/response activities unless responders minimize disturbance in lagoon, and associated vegetation; avoid disturbing the dunes and upper beaches; and only drive vehicles on wet sand; avoid trampling oil into sediments and follow protective conditions from IC and resource biologists.

HAZARDS and RESTRICTIONS:

Water Contamination - Unhealthy levels of coliform bacteria have been found intermittently in streams and on beaches in the Santa Barbara County area. Check with the Santa Barbara Ocean Quality Hotline, 805-681-4949, regarding health conditions prior to engaging in any activities which would require direct water contact. Use appropriate PPE, safety procedures, and include reference to potential health problems in any site safety plan.

SITE STRATEGIES

Strategy 4-645.01 Objective: Booming - Deploy exclusion booms across the inlet entrance to protect sensitive species and habitats when suitable berm building materials are unavailable, water flows are too great, or water depths are too great for berming.

Booming - Deploy exclusion booms across the inlet to minimize the likelihood of oiling the estuary. Place the booms in a configuration which forms an oil collection pocket which can be adjusted to accommodate changes in flow direction. Back exclusion booms with sorbent booms to minimize leakage. Line the shorelines and any side channels within the inlet to prevent collateral oiling. If there is skimmable oil present, deploy sorbents and contact the IC immediately regarding the use of skimmers and or other mechanical means for collecting oil. Monitor, adjust, and replace booms at least 2 x per day to maintain their integrity and effectiveness.

Strategy 4-645.02 Objective: Berming - Prevent oil from contaminating the inlet when it is subject to tidal influence, low flows are present, and/or wave washover could occur if berm materials are present.

Berming - First, consult with resource trustees regarding wildlife issues before undertaking this activity. Build an earthen berm across the mouth of the inlet using onsite materials obtained from unvegetated areas below the high tide line to minimize damage to wildlife and habitat. Install under flow pipes in the berm to allow through flows and/or a spillway with a filter barrier to accommodate flow increases as weather conditions dictate. Cover the berm with sheet plastic to minimize erosion. Second, back the berm with swamp and sorbent booms to prevent contamination from entrainment, leakage and or washover. If there is skimmable oil present, deploy sorbents and contact the IC immediately regarding the use of skimmers and or other mechanical means for collecting oil. Monitor berm and associated features to maintain their integrity and effectiveness.

Strategy 4-645.03 Objective: Shoreline Precleaning - Prevent oiling of kelp, driftwood, vegetative debris, trash, and other materials to reduce collateral contamination and disposal problems.

Shoreline Precleaning - Consult with resource trustees regarding wildlife issues before undertaking this activity. Remove and store kelp, driftwood, vegetative debris, trash, and other materials which could become oiled and create environmental hazards and disposal problems. Pre-cleaning of debris from shorelines will be conducted by hand crews to the greatest practical extent to minimize disturbance to wildlife and their habitats. If heavy equipment or vehicles are required for this operation, request consultation from resource trustees and contact the IC for authorization. Segregate and dispose trash. Replace unoiled debris in its former location once the threat of oiling is past.

Table of Response Resources

Strategy Number	Harbor Boom	Swamp Boom	Other Boom Amount and Type	Sorb Boom	Anchoring Systems		Boom Boats	Skiffs	Skimmers		Staff	
					Num	Type and Gear			Num and Type	Deploy	Tending	
4-645.01		600		600	6			1	1		5	2
Special Equipment: 1 Stake Driver, 40 Stakes, 1 Waste Bin (20 yd), 1 Portable Oil Storage Tank OR Vacuum Truck												
4-645.02		400		400	4							
Special Equipment: 1 Front End Loader, 1 Roll Plastic, 3 Culvert Pipes, 20 Sand Bags, 15 Stakes (metal), 1 Stake Driver, 10ft Const. Fencing, 1 Waste Bin (20 yd), 1 Portable Oil Storage Tank, 1 Hand Tools												
4-645.03											5	
Special Equipment: 1- Vehicle (4wd), 100 Trash Bags, 1 Hand Tools												

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp, and are access permits required.)

ACP 4 - LALB North

Section 9812.1-120

From U.S. 101, North of Santa Barbara, take Storke road exit - south to Isla Vista (residential district for UCSB). At the corner of storke and el colegio roads, take slough road, south west to the reserve area parking lot (see map page 144-a).

LAND ACCESS:

A. Access - Shorelines and streams in this site are accessible only through private property. Contact the landowner for permission to enter and information on road conditions. Beach access roads may require regrading before vehicles can enter or exit beaches. Barriers to longshore movement are variable according to tide and sand levels. Area may not be accessible in wet weather.

B. Access for ATV, 4-WD, and Heavy Equipment on beach.

WATER LOGISTICS:

Limitations: depth, obstructions:

Launching, Loading, Docking and Services Available: Santa Barbara Harbor is the nearest full service civilian harbor for full service berthing, launching and fueling. Response vessels could be loaded and small boats can be launched at Gaviota Pier with permission from State Beaches and Parks. Larger vessels can be loaded at Ellwood Pier with permission from Venoco and at Goleta Pier with permission from Santa Barbara County Parks.

FACILITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:

Staging area: Coal Oil Point Reserve parking

Potential command post sites: Contact Devereux Foundation or UCSB. Also, UCSB Cliff House: operated by university center, 805-893-3961, is a potential on site command post.

Closest airport is in Santa Barbara, 2.5 miles east.

COMMUNICATIONS PROBLEMS:**ADDITIONAL OPERATIONAL COMMENTS:**

Due to the probable occurrence of Snowy plovers and/or Least terns at this site, please review the Sandy Beach Site Summary and Strategies (Site 4-000-A) for information on response operations when dealing with these sensitive species.

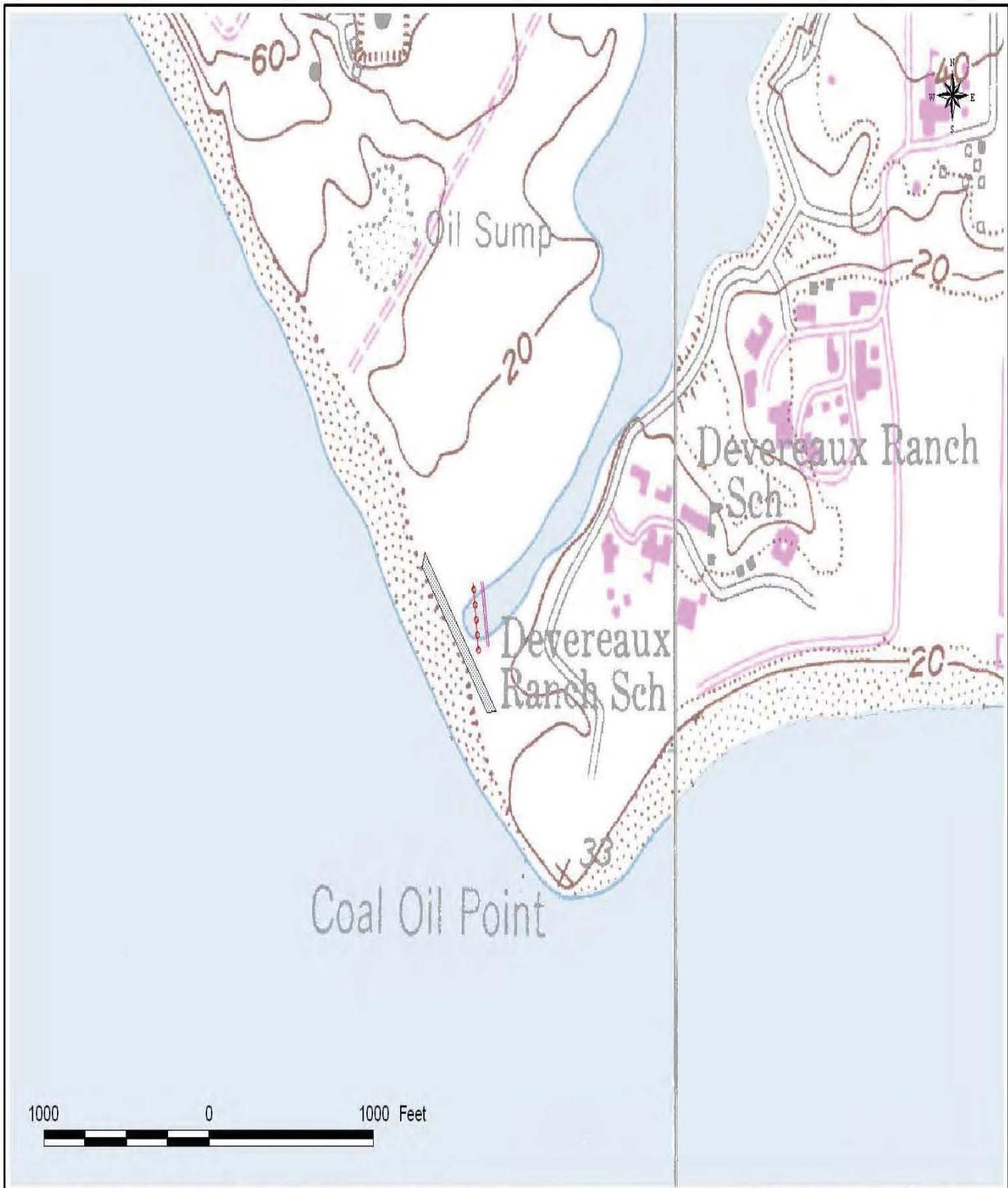
1. MONITOR STATUS OF MOUTH.
2. RESPONSE ACTIVITIES SHOULD AVOID IMPACTING FRAGILE DUNE VEGETATION.
3. UCSB HAS A WETLAND MANAGEMENT PLAN FOR DEVEREAUX SLOUGH.
4. MODERATE RECREATIONAL USE (primarily surfing) ESPECIALLY DURING SUMMER.
5. KNOWN OIL PIPELINES: Undetermined
6. KNOWN ARCHAEOLOGICAL SITES: Undetermined

FOR ADDITIONAL INFORMATION:

1. ENVIRONMENTAL SENSITIVITY INDEX (ESI) MAPS: SOUTHERN CALIF ATLAS. RPI

SPECIAL CONSIDERATIONS:

1. Federal and State Emergency permits may be required.
2. All cleanup operations in the general area should be conducted with the advice and cooperation of DFG, U.S. Fish and Wildlife Service and the Reserve Manager.
3. Aircraft Restrictions: Santa Barbara airport traffic patterns



CALIFORNIA DEPARTMENT OF FISH & GAME (OSPR) and UNITED STATES COAST GUARD
 Site Number: 4-645-A Site Name: DEVEREAUX SLOUGH

Ken wilson (OSPR) & MSTC Seibel USCGR
 Date: 04/MAY/05

- Harbor Boom
- Swamp Boom
- Other Boom
- Dike or Berm
- Excelsior Fence
- sss / sfs
- tsa / sps
- tba/voo

Appendix D
TECHNICAL AIR QUALITY

Operational Emissions Calculations

EOF Current Operations (from Line 96 Modification Project Final EIR, Appendix E, Page E-11)										
NOx	ROC	CO	SO2	PM10	NOx	ROC	CO	SO2	PM10	
lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	
104	517	569	49	18	10	91	64	5.2	1.8	
Increased EOF Operations for Processing PRC 421 Oil (3.75 increase)										
NOx	ROC	CO	SO2	PM10	NOx	ROC	CO	SO2	PM10	
lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	
3.90	19.39	21.34	1.84	0.68	0.38	3.41	2.40	0.20	0.07	

Fugitive Emissions from PRC 421

Fugitive Components	TO ton yr ¹	RO ton yr ¹	comp ¹	TO comp ²	RO comp ²	comp ²	TO ton yr	TO lb day	RO ton yr	RO lb day	ARB "Exen	ARB Exempt lb day
Gas/Light Liq: Connections	25.01	16.41	18019	0.001	0.001	12	0.017	0.091	0.011	0.060	0.006	0.031
Gas/Light Liq: Valves	72.72	47.71	3253	0.022	0.015	17	0.380	2.082	0.249	1.366	0.131	0.716
Gas/Lt Liquid: Press Relief Valves	0.58	0.38	15	0.039	0.025	2	0.077	0.424	0.051	0.278	0.027	0.146
Oil: Connections	3.14	2.06	2466	0.001	0.001	5	0.006	0.035	0.004	0.023	0.002	0.012
Oil: Valves	3.72	2.44	471	0.008	0.005	13	0.103	0.563	0.067	0.369	0.035	0.194
						totals	0.583	3.195	0.382	2.096	0.201	1.099

equivalent to 8 tons/year CO2e

1 - total emissions, based on component numbers reported by EOF in 2005 - SBCAPCD

2 - approximate component count from proposed P&ID drawing 2488A-F-028 & 029

H Emissions

	Metric tons CO2e/year
Line 96 Transport Overall Electricity Use	4369
PRC 421 Fraction of Line 96 Transport	157.3
Fugitive PRC 421 Emissions	8
Line 96 Fugitive Emissions	58.3
Project's Share of Line 96 Fugitive Emissions	2.1
Total	167.4

Electricity factor for Southern California Edison from the California Public Utilities Commission GHG Calculator:

0.31 MT CO2e/MWh

GHG emissions from pipeline transportation were estimated based on the projected GHG emissions identified in the Line 96 Modification Project EIR (Santa Barbara County 2011), and correspond to pipeline transportation to the tie-in with the PPLP Coastal Pipeline. The number presented is the Project share of pipeline transport at the average monthly output expected during the highest production rates at the commencement of production (i.e., 150 BOPD for a maximum of 3.75 percent of total transport in the first year).

PRC-421-1 (2)
Santa Barbara-South of Santa Inez Range County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Recreational	0	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m s)		Utility Company
Climate one	8		2.7	
		Precipitation Fre (Days)		
			37	

1.3 User Entered Comments

- Project Characteristics -
- Land Use - -estimated area of trenching and pier work
- Construction Phase - -90 day work schedule as described
 "demolition estimated at 4 weeks after startup of new well"
- Off-road Equipment - -removing app 400cubic yards
- Off-road Equipment - -based on equipment list, HP, and load factors provided
- Off-road Equipment - -no grading
- Off-road Equipment - -listed in site prep phase includes only repairs
- Off-road Equipment - -no paving

Off-road Equipment - -no coating

Trips and VMT - -assuming 2 trips per day worker and vendor

On-road Fugitive Dust - -project is on sandy beach

Architectural Coating - -no coating

Vehicle Trips - -

Demolition -

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	18.25	141.40	75.17	0.19	4.00	6.96	10.96	0.40	6.96	7.36	0.00	18,724.62	0.00	1.63	0.00	18,758.88
2014	0.71	4.40	3.82	0.01	7.16	0.35	7.51	0.70	0.35	1.05	0.00	505.89	0.00	0.06	0.00	507.19
Total	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	18.25	141.40	75.17	0.19	0.00	6.96	6.96	0.00	6.96	6.96	0.00	18,724.62	0.00	1.63	0.00	18,758.88
2014	0.71	4.40	3.82	0.01	0.15	0.35	0.50	0.00	0.35	0.35	0.00	505.89	0.00	0.06	0.00	507.19

Total	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
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2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.83	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	5.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00	0.00

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.83	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Total	5.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00	0.00	0.00

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.6 Site Preparation - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	18.22	141.32	74.93	0.19		6.95	6.95		6.95	6.95		18,717.40		1.63		18,751.64
Total	18.22	141.32	74.93	0.19	0.00	6.95	6.95	0.00	6.95	6.95		18,717.40		1.63		18,751.64

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.10	0.00	0.10		0.06		0.00		0.06
Vendor	0.02	0.08	0.20	0.00	1.50	0.00	1.50	0.15	0.00	0.15		5.85		0.00		5.87
Worker	0.01	0.00	0.04	0.00	1.50	0.00	1.50	0.15	0.00	0.15		1.31		0.00		1.31
Total	0.03	0.08	0.24	0.00	4.00	0.00	4.00	0.40	0.00	0.40		7.22		0.00		7.24

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	18.22	141.32	74.93	0.19		6.95	6.95		6.95	6.95	0.00	18,717.40		1.63		18,751.64
Total	18.22	141.32	74.93	0.19	0.00	6.95	6.95	0.00	6.95	6.95	0.00	18,717.40		1.63		18,751.64

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.06		0.00		0.06
Vendor	0.02	0.08	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00		5.85		0.00		5.87

Worker	0.01	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		1.31		0.00		1.31
Total	0.03	0.08	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		7.22		0.00		7.24

3.7 Demolition - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.15	0.00	0.15	0.00	0.00	0.00						0.00
Off-Road	0.67	4.26	3.45	0.01		0.35	0.35		0.35	0.35		495.19		0.06		496.45
Total	0.67	4.26	3.45	0.01	0.15	0.35	0.50	0.00	0.35	0.35		495.19		0.06		496.45

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.02	0.09	0.21	0.00	5.00	0.00	5.01	0.50	0.00	0.50		5.85		0.00		5.87
Vendor	0.01	0.05	0.12	0.00	1.00	0.00	1.00	0.10	0.00	0.10		4.00		0.00		4.01
Worker	0.00	0.00	0.03	0.00	1.00	0.00	1.00	0.10	0.00	0.10		0.85		0.00		0.86
Total	0.03	0.14	0.36	0.00	7.00	0.00	7.01	0.70	0.00	0.70		10.70		0.00		10.74

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.15	0.00	0.15	0.00	0.00	0.00						0.00
Off-Road	0.67	4.26	3.45	0.01		0.35	0.35		0.35	0.35	0.00	495.19		0.06		496.45
Total	0.67	4.26	3.45	0.01	0.15	0.35	0.50	0.00	0.35	0.35	0.00	495.19		0.06		496.45

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.02	0.09	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00		5.85		0.00		5.87
Vendor	0.01	0.05	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00		4.00		0.00		4.01
Worker	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.85		0.00		0.86
Total	0.03	0.14	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00		10.70		0.00		10.74

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Mitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00			0.00
Unmitigated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00			0.00
Total	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Recreational	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
User Defined Recreational	0.00	0.00	0.00	0.00	0.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A

5.2 Energy by Land Use - Natural Gas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
User Defined Recreational	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
User Defined Recreational	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.83	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	5.83	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.33					0.00	0.00		0.00	0.00						0.00
Consumer Products	4.49					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	5.82	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
SubCategory	lb/day										lb/day						
Architectural Coating	1.33					0.00	0.00		0.00	0.00							0.00
Consumer Products	4.49					0.00	0.00		0.00	0.00							0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00			0.00
Total	5.82	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00			0.00

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Appendix E

DISPERSANTS WHITE PAPER: OVERVIEW OF PROTOCOLS AND POTENTIAL EFFECTS

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Attachments

A	California State Oil Spill Contingency Plan
B	California Dispersant Plan and Federal On-Scene Coordinator (FOSC) Checklist for California Federal Offshore Waters
C	Environmental Protection Agency National Contingency Plan Product Schedule
D	Guide to Using the NCP Product Schedule Notebook
E	Comparative Toxicity of Eight Oil Dispersant Products on Two Gulf of Mexico Aquatic Test Species
F	Analysis of Eight Oil Spill Dispersants Using <i>In Vitro</i> Tests for Endocrine and Other Biological Activity

1.0 Introduction

Dispersant use is one of four immediate methods of responding to an oil spill; the others are no response, mechanical response (skimming), and burning response. Although the use of dispersants is the main oil response technique in Europe, it has not historically been relied upon to the same degree in the United States. However, oil spill response plans in the United States are increasingly identifying the use of dispersants as a response option (NOAA 2010).

This white paper provides an overview of the use of dispersants as a response option in the event of an oil spill that reaches the marine environment. Specifically, this document provides sections aimed at defining dispersants and identifying the regulatory authority allowing their use. A section listing federally approved dispersants is provided along with sections on how they are applied, monitored and tested. The potential impacts caused by dispersant use are discussed, followed by a short history of their use in the United States and around the world. The last section describes the recent BP Deepwater Horizon oil spill and the use of dispersants in combating this spill.

The decision whether or not to use dispersants poses challenges. This is captured in the following statement by the National Research Council (NRC) report on Oil Spill Dispersants: Efficacy and Effects (NRC 2005).

One of the most difficult decisions that oil spill responders and natural resources managers face during a spill is evaluating the environmental trade-offs associated with dispersant use. The objective of dispersant use is to transfer oil from the water surface into the water column. When applied before spills reach the coastline, dispersants will potentially decrease exposure for surface dwelling organisms (e.g., seabirds) and intertidal species (e.g., mangroves, salt marshes), while increasing it for water-column (e.g., fish) and benthic species (e.g., corals, oysters). Decisions should be made regarding the impact to the ecosystem as a whole, and this often represents a trade-off among different habitats and species that will be dictated by a full range of ecological, social, and economic values associated with the potentially affected resources. Comparing the possible ecological consequences and toxicological impacts of these trade-offs is difficult. First, each oil spill represents a unique situation and second, it is often difficult to extrapolate from published research data into field predictions, especially regarding the possibility of long-term, sublethal toxicological impacts to resident species.

The information provided here is drawn from existing documents, including the California State Oil Spill Contingency Plan (OSPR 2010a) and the California Dispersant Plan and Federal On-Scene Coordinator (FOSC) Checklist for California Federal Offshore Waters (Dispersant Plan) (CDFG 2008), which are available on the internet at: <http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=16612> and <http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=15889> respectively. Its purpose is to inform decision-makers about current issues involving use of dispersants. This white paper is not intended to advocate whether or not dispersants should be used in a spill or

the conditions of their use, both of which are the responsibility of California's oil spill responders, nor to reach conclusions that the impacts associated with dispersants are beneficial or adverse, a challenge faced by natural resource managers.

2.0 Definition

Dispersants contain molecules that reduce the surface tension between water and oil and create a molecule chain with both water and oil droplets. Wind or wave energy act to break up the oil slick into smaller chains of water and oil droplets, effectively dispersing the oil slick to greater depths (NOAA 2010). The chemicals that comprise dispersants act to break up the concentration of oil, such as an oil slick, and dilute it, thereby spreading the newly reformed oil droplets more evenly from the surface into deeper reaches of the water column.

3.0 Authority

This section identifies the regulatory authority allowing dispersant use in both California State and Federal offshore waters.

Regarding State offshore waters, pursuant to California Government Code Section 8670.7(f), the administrator, who is appointed by the Governor, has the state authority over the use of all response methods, including but not limited to, in situ burning, use of dispersants, and any oil spill cleanup agents in connection with an oil discharge. Section 8670.4 states that the administrator shall be a chief deputy director of the California Department of Fish and Game (CDFG). The Administrator oversees the Office of Spill Prevention and Response (OSPR) and is responsible for implementing the California State Oil Spill Contingency Plan (see Attachment A) (CGC 2010, OSPR 2010a, CDFG 2005).

Regarding Federal offshore waters, pursuant to the National Oil and Hazardous Substances Pollution Contingency Plan, California is in Region IX within the Federal response system. The Region IX Regional Response Team has approval authority for use of chemical dispersants; however, the Regional Response Team primarily provides planning, policy and coordinating guidance to the Federal On-Scene Coordinator through a Regional Contingency Plan. The Federal On-Scene Coordinator, a pre-designated official approved by the U.S. Environmental Protection Agency (EPA) and U.S. Coast Guard (USCG), may authorize the use of dispersants upon concurrence of the EPA and California's representative to the Regional Response Team, and in consultation with the U.S. Departments of Interior and Commerce (National Response Center 2010, CDFG 2005, OSPR 2010b). The three USCG Captains of The Port (COTP) are the pre-designated Federal On-Scene Coordinators in their respective COTP zones (CDFG 2008).

The California Dispersant Plan establishes the policy under which approved dispersants may be used by Federal On-Scene Coordinators in Federal waters off California (see Attachment B). The Dispersant Plan also authorizes and provides guidelines for

dispersant use in both Dispersant Pre-Approval Zones and Regional Response Team Approval Required Zones.

3.1 DISPERSANT PRE-APPROVAL ZONES

In the event of an oil spill, the Dispersant Plan is designed to assist the Federal On-Scene Coordinator in making the determination as to whether or not a dispersant will be applied. The Dispersant Plan provides a worksheet and checklist to assist and document the Federal On-Scene Coordinator's decision-making process (CDFG 2008). These documents are described below.

Dispersant Assessment Worksheet

This worksheet assists the Federal On-Scene Coordinator in gathering and organizing relevant information, such as:

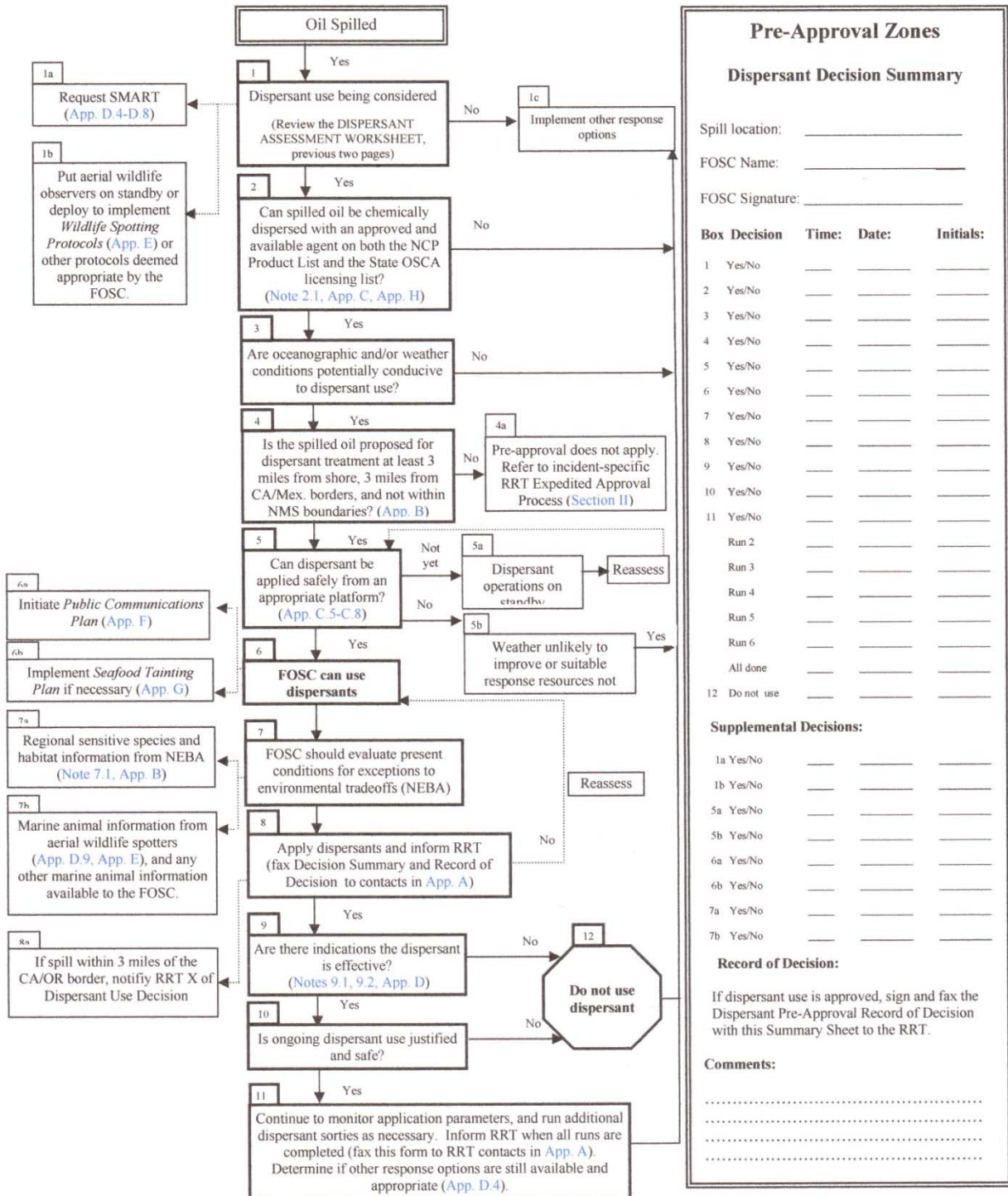
1. General Spill Information: date, location, source, cause, amount and flow rate;
2. On-scene Weather, Currents and Tides: wind direction and speed, slick speed, visibility, and tidal times;
3. Predicting Spill Movement: estimating distance and time to shore;
4. Estimating Oil Spill Volume: spill length and width, and estimated slick area;
5. Potential Resource Impacts: description of areas; and
6. Dispersant Spray Operation: contractor name, delivery platform, and implementation time.

Pre-Approval Zone Dispersant Use Checklist for Federal Waters (see Figure H-1)

This flowchart is used in conjunction with the Checklist Documentation and Support Form, Box Numbers 1 - 12 (see Attachment B), as a worksheet designed to guide the Federal On-Scene Coordinator through the decision-making process by listing the following pertinent questions/directives:

1. Is dispersant use being considered?
2. Can spilled oil be chemically dispersed with an approved and available agent on both the National Contingency Plan product list and the State oil spill cleanup agent licensing list?
3. Are oceanographic and/or weather conditions potentially conducive to dispersant use?
4. Is the spilled oil proposed for dispersant treatment at least 3 [nautical] miles from shore, not within National Marine Sanctuaries boundaries, and not within 3 [nautical] miles of the California/Mexico border?
5. Can dispersant be applied safely from an appropriate platform?
6. Federal On-Scene Coordinator can use dispersants.
7. Federal On-Scene Coordinator should evaluate present conditions for exceptions to environmental tradeoffs (Net Environmental Benefit Analysis).
8. Apply dispersants and inform Regional Response Team.
9. Are there indications the dispersant is effective?
10. Is ongoing dispersant use justified and safe?

Figure H-1 Pre-Approval Zone Dispersant Use Checklist (CDFG 2008)



Pursuant to the checklist in Figure I-1, a negative response to questions # 9 and # 10 would result in the decision not to apply dispersants. If a decision to use a dispersant is made, the Federal and State On-Scene Coordinators must sign, date and fax to the Regional Response Team the Dispersant Pre-Approval Record of Decision (see Attachment B), along with the completed dispersant use checklist. Checklist item # 11 requires the FOSC to continue to monitor dispersant applications.

3.2 REGIONAL RESPONSE TEAM APPROVAL REQUIRED ZONES

Regarding the Regional Response Team Approval Required Zones, the Dispersant Plan provides a similar worksheet and checklist as provided in the Dispersant Pre-Approval Zones. The only differences involve determining whether the spill is within three nautical miles from shore and whether the dispersant can reasonably be expected to have a net environmental benefit. Further, unlike the pre-approval process, Federal On-Scene Coordinator authorization requires the concurrence of the Regional Response Team Co-Chairs (USCG and EPA) and State representatives to the Regional Response Team, in consultation with representatives of the U.S. Departments of Interior and Commerce. The Regional Response Team provides a response to the Federal On-Scene Coordinator's approval request within two hours (CDFG 2008).

4.0 Approved Dispersants

Pursuant to the National Oil and Hazardous Substances Pollution Contingency Plan, the EPA has prepared a product schedule that lists authorized dispersants, surface washing agents, surface collecting agents, bioremediation agents, and miscellaneous control agents (see Attachment C). The product schedule lists 14 authorized dispersants:

- Corexit EC9527A
- Neos AB3000
- Mare Clean 200
- Corexit EC9500A
- Dispersit SPC 1000
- JD-109
- JD-2000
- Nokomis 3-F4
- Biodispers
- Sea Brat #4
- Finasol OSR 52
- SAF-RON Gold
- ZI-400
- Nokomis 3-AA

The EPA has also released a product schedule technical notebook that summarizes technical information on each of the authorized products (see Attachment D) (EPA 2010c, EPA 2010d).

5.0 Application, Monitoring, & Testing

In general, dispersants are most effective on lighter oils and when used within the first few hours to one day after an oil spill. If applied during this period, there is an increased chance that water-in-oil emulsions and tar balls will be prevented from forming or will be severely reduced in size and number (NOAA 2001).

Dispersants are generally delivered to the targeted oil slick by airplane, helicopter, and/or boat. When possible, infrared detectors are used by spotter planes to pinpoint the location of spilled oil. Since a certain amount of energy (wave and wind) is required to activate the chemical reaction, moderate weather is optimal. On the other hand, high waves and heavy winds make it more difficult – even dangerous – for aircraft to target the oil and deliver the appropriate amount of dispersant (NOAA 2010).

Depending on the size, location, weather conditions and type of oil spilled, differing combinations of droplet size, concentration, and rate of application are administered. Once dispersants are applied, dispersed oil laterally spreads while dropping down the water column between one and ten meters (three and 30 feet). As a result, dispersant use is limited to waters deeper than ten meters (30 feet) in order to avoid possible sea floor contamination.

The USCG, assisted by the National Oceanic and Atmospheric Administration (NOAA), monitors dispersant applications to determine their efficacy and impacts to the marine ecosystem. The Special Monitoring of Applied Response Technologies (SMART) program was developed to bring together dispersant-monitoring components for use by these agencies. SMART uses small, mobile teams to collect and transmit real-time data through the use of easy-to-use, portable and rugged instruments (NOAA 2010).

One of the instruments used is a fluorometer, which measures the fluctuation of a chemical or compound's wavelength or emitted light, i.e., fluorescence. Using this technique allows monitors to locate an oil plume and, under certain circumstances, determine the degree to which the oil has been broken down. A laser-induced particle size analyzer may also be employed to determine the size of the oil droplets and their dispersion rate (EPA 2010a).

Another aspect of dispersant use that is monitored is the potential toxicity of their use. Identifying a dispersant's toxicity effects on living organisms allows responders to calibrate the degree of dispersant application. This can be accomplished by employing a standardized rotifer test. Rotifers are sensitive, small invertebrates, which are exposed to water collected at different distances from the oil spill. Rotifer survival rate comparisons are made between those exposed to clean water versus impacted water (EPA 2010a). Depending on the results of the testing, the use of dispersants is curtailed or continued.

6.0 Potential Effects

In addition to ecological damage, spilled oil can have a devastating effect on the local and regional economy by negatively impacting tourism, recreation, commercial and sport fishing, and those businesses dependent on these industries. Oil is considered to be very toxic, can impact sensitive environments such as coastal wetlands, mangrove swamps, and coral reefs, and is dangerous to seabirds and marine wildlife, such as sea turtles, sea otters, and other fur-bearing marine mammals.

When an oil spill occurs, a decision must be made whether to do nothing—and let nature take its course—or employ one or a combination of the common immediate mitigation responses, which are skimming, dispersant use, and burning. Unfortunately, there is no definitive evidence that oil spill mitigation methods, on the whole, are more or less damaging to the environment than doing nothing. At this time, not enough field studies have been conducted that conclusively point in one direction or the other.

That said, some experts consider oil to be more toxic than dispersants, which, according to the EPA, is a strong reason for using dispersants in events such as the BP Deepwater Horizon oil spill. In lab tests conducted by the EPA, none of the dispersants tested and approved for use displayed biologically significant endocrine-disrupting activity or proved to be more toxic to aquatic life than oil. NOAA (2010) and EPA (2010a) report that the concentrations of dispersed oil gradually reduce the deeper the water mark and significantly drop after a few hours due to currents and wave energy; within approximately four weeks, depending on factors such as water temperature, oxygen content, and the presence of micro-organisms, the dispersed oil is broken down to naturally occurring substances and processed by the marine ecosystem. Note, however, that although dispersion can affect plankton and early life stages of fish during the first day of application, dispersants are intended to prevent oil from reaching the shore, thereby minimizing the long-term impacts to shoreline habitats, such as beaches, swamps and archeological sites (NOAA 2001, NOAA 2010, NOLA 2010).

7.0 History

Historically, mechanical response, extensive shoreline cleanup, and bird and wildlife rehabilitation have been the main response methods to oil spills off the coasts of Washington, Oregon, California, and Baja California. However, dispersion field trials conducted in the 1970s underscored the need for further research and testing. In the 1980s, dispersants were used in two California oil spills, but the results on efficacy were equivocal due to limited operations. Studies conducted in the last 20 years suggest that dispersants could be more suitable as a response option than previously considered (NOAA 2001). In the past 15 years, dispersants have been applied to small spills off the coasts of Louisiana and Texas.

The application of dispersants as an oil spill response method overseas has been greater than in the United States. In 1996, as part of a larger response to the release of 72,000 tons of light crude oil from the Sea Empress in South Wales, 118,000 gallons of dispersants were used to combat the spill. Edwards (1999) discussed the environmental impact and recovery of this spill and found that, in general, environmental impacts were less severe than initially anticipated. The study stated that: (1) factors including time of year, wind direction, dispersant use, and speed of response minimized the impacts; (2) use of dispersants (by air) resulted in 24 percent of the oil being dispersed; and (3) dispersants combined with natural dispersion and evaporation resulted in only five to seven percent of the oil reaching the shore (Edwards 1999).

More recently, in 2009, 50,000 gallons of dispersants were used on the West Atlas (Montara) oil spill in Australia (EPA 2010a). In June 2010, a report detailing the results of an investigation into the oil spill was provided to the Australian government, but the findings have not yet been made public.

In 2005, the NRC issued a report regarding oil spill dispersants and their efficacy and effects. A key finding in this report stated that more information is required to determine dispersant effectiveness on different oil types and environmental conditions. The report also suggests that Federal, state and industry partners need to establish an integrated research plan and increase laboratory and field research (NRC 2005).

8.0 BP Oil Spill

On April 20, 2010, the British Petroleum (BP) Deepwater Horizon platform in the Gulf of Mexico exploded, causing the largest oil spill in U.S. history. As the Federal On-Scene Coordinator, the USCG authorized the use of the dispersant Corexit 9500 on the water's surface and subsurface at the source of the leak. Table 1-1 shows the chemical components of Corexit 9500.

Table H-1 Corexit 9500 Components

CAS Registry Number	Chemical Name
57-55-6	1,2-Propanediol
111-76-2	Ethanol, 2-butoxy-
577-11-7	Butanedioic acid, 2-sulfo-, 1, 4-bis (2-ethylhexyl) ester, sodium salt (1:1)
1338-43-8	Sorbitan, mono-(9Z)-9-octadecenoate
9005-65-6	Sorbitan, mono-(9Z)-9-octadecenoate, poly(oxy-1,2-ethanediyl) derivs.
9005-70-3	Sorbitan, tri-(9Z)-9-octadecenoate, poly(oxy-1,2-ethanediyl) derivs
29911-28-2	2-Propanol, 1-(2-butoxy-1-methylethoxy)-
64742-47-8	Distillates (petroleum), hydrotreated light

Notes: i) Chemical component Ethanol, 2-butoxy- is not included in the composition of Corexit 9500; ii) These are also the components of Corexit 9527.

Source: EPA 2010a

The use of a dispersant underwater at the source of a leak is unprecedented. As of July 12, 2010, more than 1.07 million gallons of surface dispersant were used and more than 735,000 gallons of subsea dispersant were used, making it the largest application of dispersants in U.S. history. Expectantly, the short-term and long-term effects on aquatic and human life through bioaccumulation via the food chain are unknown (EPA 2010a).

On May 10, 2010, as part of a monitoring and assessment directive, the EPA identified the following criteria to determine whether the subsea dispersant should be shut down:

1. A significant reduction of dissolved oxygen;
2. The results of rotifer toxicity tests; and
3. The evaluation of the conditions above plus other factors, including shoreline, surface water, and other human health and ecological impacts (EPA 2010a).

As a cautionary measure, on May 26, 2010, the EPA directed a decrease in the overall volume of dispersant use by 75 percent and the cessation of the use of surface dispersants. This would have resulted in a maximum allowance of 15,000 gallons per day of subsea dispersant. In response, BP reduced the amount of dispersant use by 72 percent from their peak levels. Initial monitoring and analysis to that point indicated the dispersant was having a positive effect with no significant ecological impact. However, the EPA required BP to study the dispersant and determine whether there was a less toxic and equally effective alternative (EPA 2010a, EPA 2010b).

Dissatisfied with BP's testing, on June 30, 2010, the EPA released its own preliminary studies confirming that Corexit 9500 and seven alternative dispersants did not display biologically significant endocrine disrupting activity (see Attachments E & F). According to these studies, all of the dispersants fell within the range of practically non-toxic to slightly toxic, and Corexit 9500 and JD-2000 were the least toxic to small fish. Additional research found that compared to oil in its natural state, oil in the presence of the dispersant Corexit 9500 increased the rate of biodegradation by almost 50 percent. Subsequently, the EPA directed BP to continue the use of dispersants responsibly and as sparingly as possible (EPA 2010b, EPA 2010e, EPA 2010f, EPA 2010g).

As noted earlier, a spill of this magnitude had never before occurred in the United States. Mitigation procedures and cleanup efforts are fluid and ongoing, and the extent to which oil spill contingency plan protocols were followed is not known. An ongoing official inquiry into the response may shed light on this matter.

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Appendix F

BEST MANAGEMENT PRACTICES

Best Management Practices

To minimize impacts to the environment from implementation of the proposed Project, the following best management practices are hereby incorporated into the Project. These measures would be overseen by environmental quality assurance monitors who would be present during construction activities:

- The use of a water truck as needed during construction operations, but not less than once per day during dry conditions, to keep dust levels caused by movement of vehicles down on the dirt access road.
- Demarcation of the boundary of all three wetland areas along the access road with orange construction fencing, to ensure people and equipment do not enter this area.
- Protection of the riparian area associated with Bell Creek, and the oak saplings east of the creek, by placement of hay bales along the top of the creek bank, to ensure equipment and people do not enter these areas.
- Pre-project and ongoing searches by project environmental monitors for snowy plovers or grunion on the beach, with the condition that if such species are spotted, work would stop or be redirected away from such species.
- Presence of a qualified Environmental Quality Assurance Program monitor under contract of the Santa Barbara County Energy Division onsite to continually assess possible impacts to biological resources, and suggest preventative actions.
- A Fuel and Lubricant Drip Mitigation Plan and Spill Contingency Plan, which:
 - Outlines precautionary actions to avoid fuel spills on-site including the use of protective barriers to be placed under equipment during fueling, as well as banning any refueling of equipment on the beach.
 - Calls for the presence of two Oil Spill Response trailers at the EOF, containing materials and equipment to be utilized in the event of a spill or leak.
 - Allows minimal on-site refueling: Refueling of most mobile equipment offsite; refueling of large, difficult to move equipment in the lay down staging area at the EOF; refueling of non-mobile equipment on the access road, pier or caisson.
 - Prohibits refueling of any equipment or machinery on the beach or beach access ramp.
 - Includes the use of drip pans and fuel sorbant pads during refueling.
 - Calls for a Refueling Operations Log Sheet filled out each time refueling occurred.

- Requires the inspection of hoses and containers to ensure they are free of cracks or signs of deterioration.
- Requires the inspection of equipment on a daily basis for leaks, and filling out of a Daily Leak Inspection Form.
- Prohibits overnight equipment storage on the beach.
- Requires equipment to be removed from the beach and returned to the staging area at the end of each workday and during high tides;
- Requires that equipment allowed on the beach was limited to the area between the beach access ramp and the caisson repair area.
- Consultation with the County Fire Dept. prior to commencement of the project.
- Maintenance of emergency vehicle access throughout the project.
- Adherence to an Emergency Response Plan tailored specifically for the SL 421 piers that details emergency response procedures and containment strategies in the event leakage occurs.
- Prohibition of alteration of the bluff face or toe.
- Complete deconstruction of the beach access ramp upon project completion and replacement of sand to its approximate former location.
- Repair to the dirt access road following non-project-related water damage, to ensure further erosion did not occur from use of the road for the project.
- Appropriate disposal of concrete debris, rebar, shaley mud, sand, contaminated water, and sorbant pads at off-site recycling service centers and waste management centers.
- Continued visual monitoring of the entire pier structure, as weather permits, for detection of new leaks is appropriate. Particular attention should be paid to the following areas:
 - The side and bottom perimeters of the new wall
 - The face of the new wall
 - The remainder of the old wall that has not been covered by the new wall. This includes both sides of the structure (East and West), in their entirety.
- Venoco will install and maintain warning signs during project construction.
- Minimize nighttime work
- Equipment shall be returned to the staging area or the top of the pier at the end of each workday.
- The beach around the project site shall be regularly inspected for debris. If debris is found (such as concrete, rebar, etc) it will be promptly removed and disposed of.
- When necessary, store debris piles temporarily on the upper reaches of the beach, overnight, for pick-up the next day. Whenever this occurs, the debris shall be marked with caution tape to prevent injury or hazard to members of the public.
- Public access to this stretch of beach will remain open to the public. Passersby will be allowed to pass underneath the pier as they would normally. Passage will only be restricted when construction activities posed a safety risk, as determined by the construction manager and/ or environmental monitor.
- The environmental monitor will inspect the beach around the project site regularly for debris. If debris are found (such as concrete, rebar, etc), construction crews will remove and disposed of promptly.
- Fill in any trenches dug in the seaward side of piers before the end of each workday.

- Photo-document the dirt access road and the City of Goleta roads before and after the project, to document road conditions and assess impacts, if any.
- Use plastic sheeting, placed behind the bottom panels of the new wall, to form a plug to prevent the cement slurry from seeping out from the new wall face.

Appendix G

VENOCO PROJECT DESCRIPTION



VENOCO, INC.

May 6, 2013

Mr. Eric Gillies
Assistant Chief, Environmental Planning and Management
California State Lands Commission
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825

Subject: PCR 421 return to production

Dear Mr. Gillies

Enclosed please find the revised detailed project description for the PRC lease 421 return to production project. The project description reflects the discussed amendment to the project of bringing the production from the 421 lease into the Ellwood Onshore Facility for processing.

Please contact me at (805) 745-2255 should require additional information or have additional questions.

Sincerely:

Stephen A. Greig
Government Relations Manager

Cc: Anne Wells, City of Goleta

Encl: 421 project description

**VENOCO LEASE 421 RE-COMMISSIONING PLAN
PROJECT DESCRIPTION
MAY 2013**

VENOCO, INC.

STATE LEASE 421 RECOMMISSIONING PLAN

PROJECT DESCRIPTION

MAY 2013

**VENOCO LEASE 421 RE-COMMISSIONING PLAN
PROJECT DESCRIPTION
MAY 2013**

1 LOCATION AND DESCRIPTION OF EXISTING FACILITIES

Venoco, Inc., the Operator of State Tidelands Lease PRC 421.1 (Lease 421), proposes to reinstate production from this lease. The existing facilities at Lease 421 currently include two piers located on submerged lands in State coastal waters below the bluffs marking the southern limit of the Sand Piper Golf Course. Access is provided by an existing road originating at Venoco's Ellwood Onshore Facility (EOF) just to the west of the piers. Oil was exported by a 6" pipeline connecting to Line 96. Portions of the access road and the pipeline lie within easements granted to Venoco by predecessors in interest of the Sand Piper Golf Course (APN 079-210-059) and are located in the City of Goleta. The remainder of the pipeline and access road lie upon filled lands below the State ordinary high tide line. The two piers provide support for two wells located on separate concrete caissons, identified as Well 421-1 and Well 421-2. Each steel pile pier contains concrete caissons that are approximately 67 feet long, 42 feet wide and rise approximately 20 feet above mean sea level. The piers are located one half mile south of Venoco's Ellwood Onshore Facility (EOF) on APN # 379-210-061.

The proposed work includes the installation of a new Electrical Submersible Pump (ESP) in well 421-2, installation of well safety equipment, repair of existing buried produced liquid pipeline, installation of connecting piping, production metering and process monitoring equipment within EOF, and installation of direct buried power and communications cables and provisions for process monitoring and control.



Figure 1: EOF, Sandpiper Golf Course, and PRC421 wells.

VENOCO LEASE 421 RE-COMMISSIONING PLAN
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1.1 Wells 421-1 and 421-2

The Lease 421 wells were last operated by Mobil on a continuous basis in 1994. All the equipment to operate the lease was located on the piers. Oil and water was pumped from well 421-2 using a gas fired internal combustion (IC) engine on the 421-2 pier. The emulsion was piped to a second pier housing well 421-1 where the emulsion passed through a free water knock-out vessel and entered a storage tank. Oil from the tank was pumped using a gas fired IC engine through a 6" shipping line connecting to line 96. The water separated from the emulsion was disposed by re-injection into the producing formation through the disposal well 421-1.

Mobil experienced a leak on the 6" shipping line in March 1994. A 4-foot section of the line with a pinhole leak was replaced under the 12th tee of the Sandpiper Golf Course and the line was successfully hydro-tested to 190 psi. As a condition of approval of the Oil Spill Clean-up and Remediation Plan, Santa Barbara County required Mobil to submit a re-commissioning plan before placing the line back in operation. Mobil did not re-commission the pipeline and the lease was left shut-in until November 2000. Venoco submitted re-commissioning plans to the Energy Division in 1997, 1998, and 2001. The Santa Barbara County Energy Division listed Lease 421 as "Idle - application to restart pending review" in their report on the "Abandonment of Oil and Gas fields Offshore Santa Barbara County and Related Infrastructure" dated October 25, 2000.

The condition of the access road, piers, wells and production equipment had greatly deteriorated by November 2000, so the State Lands Commission required Venoco to conduct major repairs. The access road was resurfaced, rip rap and soldier piles were installed to reinforce the old seawall, the piers were completely rebuilt, the well caissons, casings and wellheads were repaired, subsurface safety valves were installed in the wells and all the production equipment was removed from the piers. During this period, a temporary flowline was run from the EOF to the well. 421-2 was produced under an Emergency permit to relieve the wellhead pressure.

Well 421-1 is located approximately 2500 feet southeast of the EOF. Well 421-1 was previously used as an injection well for water produced from Lease 421. Under this proposal, this well would be plugged and abandoned and its associated pier removed.

Well 421-2 is located approximately 325 feet east of well 421-1. Well 421-2 is an oil well that was most recently produced by natural flow during 2001. An electric submersible pump (ESP) will be installed and will be located deep inside the casing of the well below ground level. The well pump will be electrically powered from a new power cable from the EOF. The profile of the new equipment and wellhead is such that it will present minimal visual impact.

The existing access road that leads from the EOF to Lease 421 is adequate to allow for maintenance and repair purposes of the 421 well. The road is 12 feet wide and is made of float rock and base. In addition, there are several existing pipelines in the road right-of-way.

1.2 General Fluid Production Information

The Ellwood Field trends east-west along the shoreline just south of the Sandpiper Golf course (see map in Attachment 1). The field is about 4 miles long and 1/2 mile wide. The field was discovered by Barnsdall Oil Company in July 1928 when the Luton-Bell No. 1 was completed flowing 1755 Barrels of Oil per Day (BOPD) of 37.8 deg API low sulfur oil from the Lower Miocene Vaqueros formation. Development of the onshore acreage began in the late 1920's and exploitation of much of the greater tidelands section of the field started in the early 1930's using wells drilled from piers. The two remaining 421 wells were drilled from piers during 1929-1930. Peak production from the field of nearly 49 thousand barrels of oil per day occurred in 1930. Early wells commonly flowed about 2,500 barrels of clean oil daily, but water encroachment and decrease in pressure

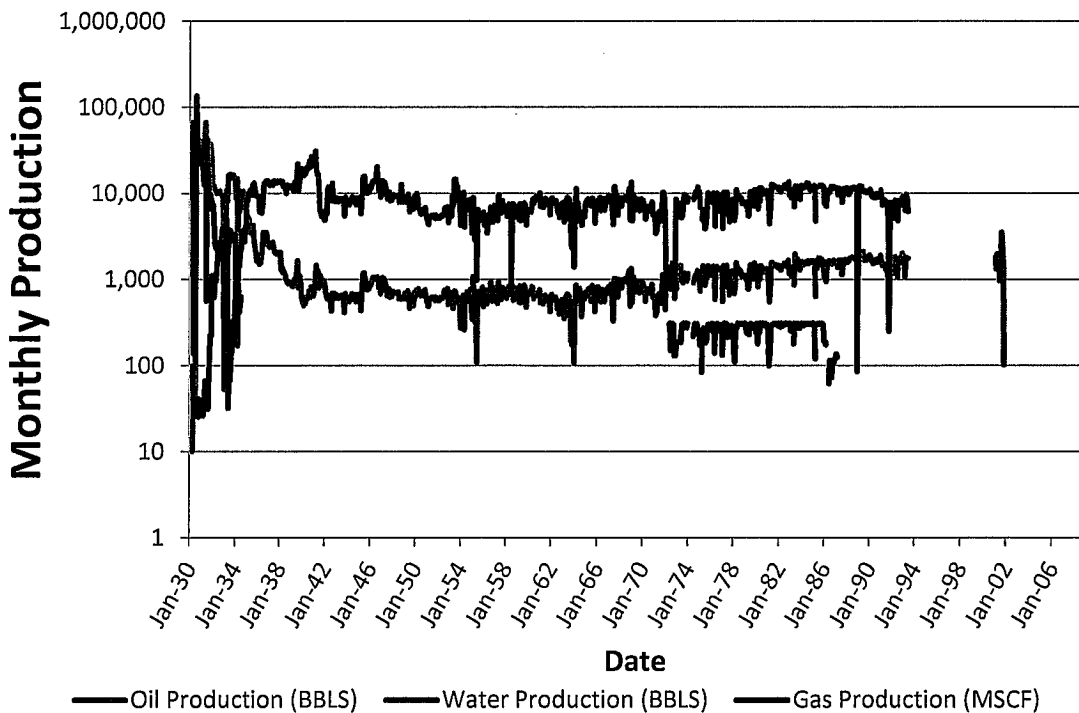
**VENOCO LEASE 421 RE-COMMISSIONING PLAN
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necessitated the use of gas lift and pumping. The existence of a second Western structural high was determined from well 428-9 in 1937. The entirely offshore Western high was developed using high angle wells drilled from shore during the 1940's from Signal's Dos Pueblos property into leases PRC 129 and 208. The last producing wells were completed in the 1960's. Most of the wells located on piers were abandoned in the 1950's. The caisson of 421-10 was removed and replaced with a bird sanctuary. Arco continued to produce the Dos Pueblos wells until 1993. There was no detectable presence of hydrogen sulfide in the Dos Pueblos produced gas despite the injection of 35 Million Barrels (MMB) of produced water into the PRC129 and 208 wells. Arco abandoned the last of the Dos Pueblos wells in 1996.

Recent fluid production information is only available for well 421-2 since it is the only existing production well. The gravity of the oil from 421-2 is 35° API. The sulfur content of the crude production is less than 0.6%. The producing gas oil ratio is very small. It was last measured at less than 100 SCF/STB in 2001. The produced gas meets current CARB specifications for pipeline quality gas. The H2S content, as for all Vaqueros production in the Channel, is less than 10 ppm. Attachment 2 provides oil specifications for the Ellwood Field (Lease 421), oil analytical results from 421-2, and a gas analysis.

Well 421-1 initially tested in 1929 at 3220 BOPD of 36.1 deg API oil and 750 MCF/d of gas from the Vaqueros. It has not produced since 1972. From 1972 until 1994, it was used as a water disposal well. It was tested briefly during December 2000 but produced only minor amounts of gas. 421-1 will be plugged and abandoned and its associated pier removed.

Historical fluid production for 421-2 is provided below:



GOODE CORE ANALYSIS SERVICE

Company: Veneco Inc.
Well: Various
Field: Offshore
Job No: 101189

Date: 3/13/00

CRUDE OIL ANALYSIS

SAMPLE I.D.	VISC. (cp) 122F	VISC. (cp) 200F	API	EXTRACTED WEIGHT(gm)
SEEP	> 150000			
421-2	< 9		35.7	
3120-14	128		16.6	

Viscosity measured by a Cone and Plate Viscometer
Gravity measured by pycnometer

GOODE CORE ANALYSIS SERVICE

File No.: 101189
 Date: 6/27/2001
 Sample Type: Various

Company: Veneco Inc.
 Well: Various
 Field: Holly
 County, St: State Offshore

PYRO-CHROMATOGRAPHY TABULAR DATA

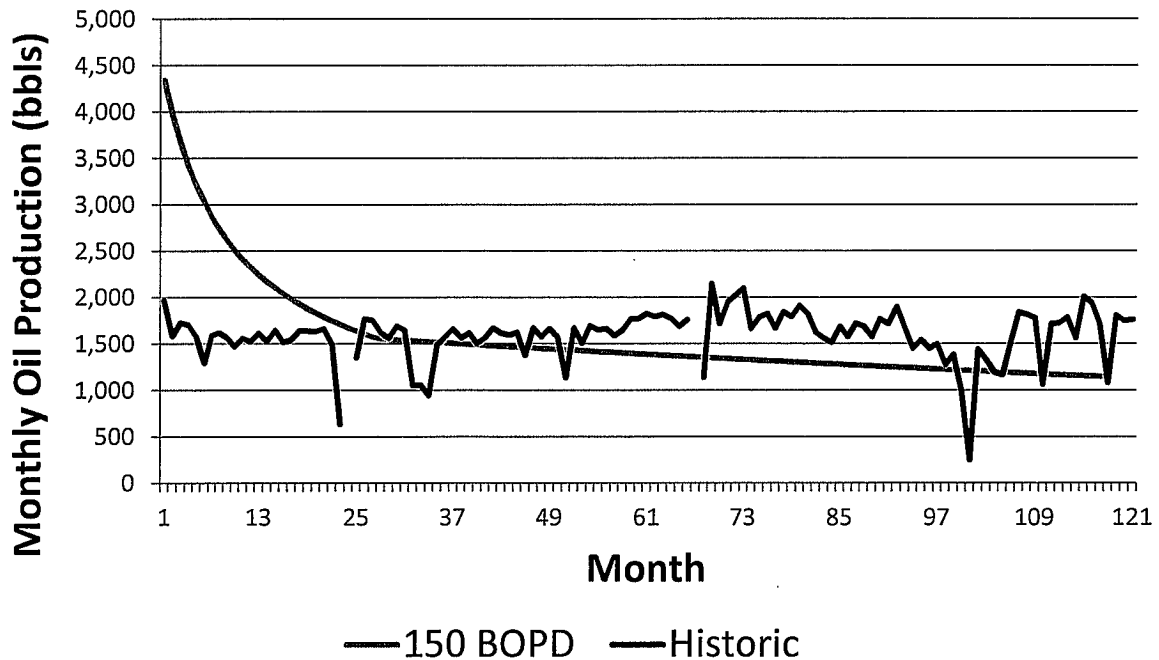
Sampl #	Sample ID	17+18/ Pr+Phy	IP15/ n-C14	Pr/Phy	CPI	% <n-C13	% >n-C18	% n-C/ Total	Total Area
1	421-2 Prod	1.29	0.50	1.63	1.45	37.5	34.7	21.8	3.4
2	3120-14 Prod	1.16	0.69	0.92	0.98	28.8	49.8	18.0	1.8
3	Seep Oil	1.05	0.75	0.81	1.13	2.3	85.1	15.4	3.3
4	421-2 Soil Sam	1.00	0.95	0.85	1.00	7.7	71.5	13.5	4.0
5	421-1 Soil Sam	1.00	0.92	0.93	0.99	8.0	70.5	11.1	3.4
6	After 2 Days	0.98	0.71	0.92	0.98	2.6	74.0	15.6	2.4
7	After 7 Days	1.10	0.78	0.84	1.09	0.2	83.9	17.7	1.2
8	After 14 Days	1.06	0.97	0.58	1.01	0.8	94.0	16.1	0.2

**VENOCO LEASE 421 RE-COMMISSIONING PLAN
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421-2 was produced intermittently during 2001 under the Emergency Permit. In December 2000, it flowed at rates in excess of 1000 BOPD and produced 18279 barrels of clean oil with no measurable water or gas production through October 2001. This oil was shipped to the Ellwood Marine Terminal and sold along with South Ellwood crude from platform Holly.

Based on the proposed ESP sizing for the 421-2 well, the monthly average oil production rate at the wellhead is expected to be no more than 150 BOPD over the life of the well. Instantaneous production should not exceed 1,000 BOPD. The gas production rate should not exceed 70 Mcf/d. The gas production rate was too small to measure during the tests done in 2001.

It is expected that water breakthrough will occur shortly after the start of continuous production. The water cut will increase over the course of the production life of the well until it would no longer be economically viable to produce. Based on current projections, the estimated productive life of the 421-2 well would be at least 20 years. Estimated flush production is 150 BOPD the first month due to the well being shut-in and converges on 50 BOPD after two years matching the last ten years of continuous historical production. The 421-2 production forecast is given below.



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1.3 Platform Holly

Platform Holly was built on PRC 3242.1 in 1966 to produce the reserves from the Rincon formation and has been in continuous operation ever since. The platform produces oil/water emulsion and natural gas that are separately transported via subsea pipelines to the EOF. A portion of the produced gas is compressed to high pressure and recycled for artificial lift (gas lift) in producing wells.

Platform Holly is a self-contained oil drilling and production platform. The platform sits in about 211 feet of water about 2.4 miles south of the 421 piers.

No process equipment related to 421 lease production is to be installed aboard platform Holly.

2 PROPOSED PROJECT

2.1 Lease 421 Wells

Currently, both PRC421 wells are shut-in and equipped with subsurface safety valves and packers. Venoco, Inc. proposes to place 421-2 back into service and have well 421-1 plugged and abandoned. Under this proposal, well 421-2 would be equipped with an Electric Submersible Pump (ESP) which would be located inside the casing of the well approximately 2000' below ground level. Electrical equipment, instrumentation and well control devices would be located near the wellhead and connected to remote alarm annunciation devices at the EOF. Produced fluids from 421-2 will be transported by pipeline directly to EOF for processing.

2.1.1 Well 421-1

With produced fluids from Well 421-2 going directly into EOF, Well 421-1 will no longer be needed. Applications to plug and abandon the well and remove its associated pier will be prepared and submitted shortly after 421-2 well is returned to production. Approval for abandonment and decommissioning will be obtained through a separate review process.

2.1.2 Well 421-2

The well 421-2 will have an ESP installed (see workover program in Attachment 3). A motor control panel (Variable Frequency Drive) and a step-up transformer located at the EOF will supply 1500V power to the pump. For security reasons, the motor control panel and transformer will be located at the EOF rather than at the 421-2 pier. The ESP transformer and control panel would connect to 421-2 via a direct buried 200 kVA power cable. A second utility electric power cable will be laid in the same excavation with an integral communication cable for data transfer for SCADA purposes. 480V utility power will be supplied to the 421-2 pier and a small step down transformer will be installed in an electrical panel to drop the voltage to 120V. A 120V power receptacle will be provided at the 421-2 well site to support future well testing, data transmission, chemical injection, or temporary lighting, should the need arise. A 120V utility power outlet will be located inside of the power panel.

The wellhead will be equipped with current safety equipment and follow safety design criteria as specified in API RP 14C, *Safety Analysis Function Evaluation (SAFE) of Offshore Petroleum Production Systems*. At a minimum, these standards will provide for the installation of a Sub-Surface Safety Valve (SSSV) and Surface Safety Valve (SSV) on the well. The oil discharge line will be equipped with High and Low pressure sensing switches. In the event that these switches report high or low pressure, or in the event that any alarm forces a shutdown of the well, then the Surface Safety Valve and Sub Surface Safety Valve will automatically close and prevent oil from being brought to the surface. To assure fail-safe operation, these valves will be designed to

**Ellwood Field
State Lease PRC
Well 421-2
Workover Program**

Casing:

20" 91# C 349' (19.166" ID)
13-3/8" 61# C 1999' (12.515" ID)
9" 45# C 3103' (8.032" ID)
8" Open Hole 3103'-3150'

Volumes:

9" x 3-1/2" = 0.0508 bpf
9" x 2-7/8" = 0.0546 bpf
9" Casing = 0.0627 bpf
3-1/2" Tubing = 0.0087 bpf
2-7/8" Tubing = 0.0058 bpf

Tubing:

3-1/2" 9.3# (2.992" ID)
2-7/8" 6.5# (2.441" ID)

Detailed Procedure:

1. **Notify Coastal Commission, Fire Dept, Clean Seas, SBC, APCD, DOG & SLC of pending well work. Move in and rig up Pool HD-35 doubles pulling unit on location. Spot rig with the assistance of a crane. Spot pump/pit on pier or road as necessary. Location and equipment will be set up for preventing discharge to the water and land. Clean Seas boat and equipment to be in place per permit conditions and all notifications should be made. Have 70 bbl vacuum truck on location per permit conditions. Spill prevention measures will be in place before well work is initiated. An approved refueling procedure will be followed for any equipment that must be refueled on location. Drip pans will be in place for all appropriate equipment. Tubing and equipment pulled from the well will be laid down with lining in place and bundled/wrapped to prevent surface contamination**
2. **Conduct lease orientation meeting and discuss rig up. Hold pre-job safety meeting. Confirm casing and tubing pressure are zero. Set back pressure valve. Remove dry hole tree. Install **9" 3M (8.5" bore) Class III BOP**. Test BOPE against 3-1/2" and 2-7/8" tubing to 1500 psi per DOG regulations. DOG to witness BOPE test.**
3. **Back out hold down pins and unset inflatable packer. Re-land hanger and secure with hold down pins. Allow element to relax overnight. Pull donut to the floor while stripping through closed annular. If packer element is swabbing, rig up slick line unit. Install TIW valve on donut and rig up lubricator with pump-in sub. Pressure test lubricator and TIW valve through pump-in sub to 1500 psi. Pressure up control line to open SCSSV at 355'. Shift sliding sleeve open at 2800'. Rig down slick line company.**

4. Pull existing 3-1/2" and 2-7/8" tubing completion and jewelry. Lay down jewelry and send in for reconditioning. Keep hole full at all times while pulling out of the hole. Monitor well for swabbing due to possible swollen packer element.
5. Make up 9" 45# casing scraper and run in the hole to +/- 2000' while picking up an additional +/- 1650' of new 3-1/2" tubing. Pull out of the hole and stand back 3-1/2" tubing out of the way of the 2-7/8" tubing.
6. Run in the hole with open ended 2-7/8" tubing (plus additional 3-1/2" tubing) to bottom of the hole at 3150' (last tagged during work over in 2001). Rig up stimulation company. Acidize Vaqueros Sand production interval (3103' to 3150') by equalizing 1200 gallons of inhibited 15% HCl (72 hours), including appropriate additives, down the tubing across the sand face.
7. Pull out of the hole and lay down all 2-7/8" tubing and send in to inventory.
8. Rig up cable spooler and stainless steel tubing line spoolers. Make up ESP equipment including pump, motor and cable. Run ESP equipment, cable and chemical lines to 2000' while banding to new tubing as per attached drawing.
9. Make up tubing hanger. Install cable feed through, control line and chemical line.
10. Land hanger in tubing spool and secure with lock down pins. Rig up slick line unit. Install TIW valve on riser and rig up lubricator with pump-in sub. Pressure test lubricator and TIW valve through pump-in sub to 1500 psi. Pressure up control line to open SCSSV at 355'. Set plug in "BX" nipple at 1912'. Pull out of the hole. Fill tubing with water (if necessary) and pressure up to 1500 psi to set hydraulic packer. Close SCSSV and bleed off pressure above to test. Pressure test annulus to 500 psi. Equalize pressure across SCSSV and pressure up on control line to open. Run in the hole and equalize fluid across plug and retrieve from 1912'. Rig down slick line company.
11. Set back pressure valve. Remove BOP. Install and test tree. Hook up cable to variable speed drive. Hook up flow line. Hook up control line and chemical line.
12. Start pump and check for proper rotation and monitor parameters using monitoring system. Rig down equipment and release crews.

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normally close in the absence of any power or energy to hold them open. The SSV will use a charge of nitrogen or hydraulic fluid to hold it open, and the SSSV will depend upon a hydraulic fluid source to hold it open. In the event of a shutdown scenario calling for closing of the SSV and SSSV valves, a solenoid will release a small amount of nitrogen pressure or hydraulic fluid to a storage tank and the valves will spring closed. A small pump will be provided to allow re-energization of the SSV and the SSSV valves when a well is restarted after a shutdown. The selection of the SSV and SSSV well actuators will be made with the intent of keeping a very low surface profile.

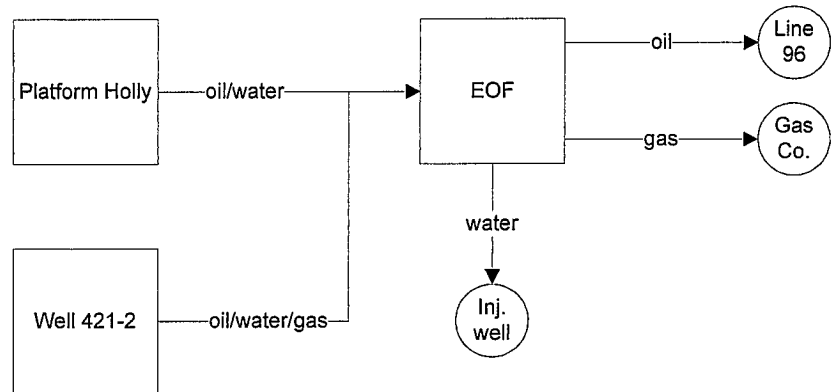
A pair of stainless steel equipment enclosures will be located at the wellhead, one used to house the wellhead safety control panel, including high/low pressure pilots, hydraulic reservoir, and other necessary actuation equipment, and the second electrical box to house the utility power transformer and receptacle and electronics associated with the metering and communication of safety signals. The wellhead safety control panel and electrical panel are each expected to be 3' x 4' x 4' in size. The electrical panel will also house the electrical service receptacle, an auxiliary stop switch to be used by well servicing personnel, and will include a tamper switch to provide annunciation at EOF of possible tampering. A surveillance camera will be mounted on the 421-2 pier to monitor the condition within the vicinity. The live video feed will be displayed in the EOF control room.

The ESP will be equipped with sensors to monitor operating conditions such as motor load, motor winding temperature, intake temperature, intake and discharge pressures, and pump vibration. This data will be transmitted over the power feed back to the motor control panel located at the EOF. The motor control panel will incorporate safety switches to automatically shut-in the pump in the event of a deviation from normal operating conditions such as might be caused by a pipeline rupture or a process interrupt.

At the EOF tie-in, a Flow Safety Valve (FSV) will be provided to prevent backflow of oil from the pipeline, thus providing protection against uncontrolled oil flow in the event of a catastrophic oil line failure.

2.2 Proposed Crude Oil Processing

Lease 421 production would be easily accommodated at EOF. The Lease 421 production would commingle with Platform Holly production. The combined Platform Holly and Lease 421 production would remain within the existing Platform Holly to EOF production limits. In the event that Platform Holly production ceases and Platform Holly is decommissioned, Lease 421 production would also cease and its facilities would be decommissioned. The Lease 421 re-commissioning project will not extend the life of the EOF.



Lease 421 production would be delivered through a replacement pipeline to EOF. Within EOF, this line would include high and low pressure safeties, and a shutdown valve. Connections would be provided to deploy a temporary pig receiver for intermittent pipeline cleaning and inspection. Downstream of the pipeline shutdown valve, the Lease 421 production would flow through a multiphase flow meter for proper allocation of the Lease 421 oil, gas and water production. This flowmeter and its related electronics would fit within a 3 ft

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square by 5 ft high area. The production line would then connect to the 8" wet oil production line from Platform Holly.

A new programmable logic controller (PLC) would be installed near the new multiphase flowmeter. This PLC would be placed in an upgraded electrical cabinet that is currently near the pig receivers to monitor and control the Lease 421 production facilities; including the electric submersible pump (ESP) at the well and leak detection and safety shutdown for the Lease 421 pipeline. The PLC would include local control functions, as well as communication to the existing EOF control room for remote monitoring and control. A variable speed drive (VSD) package consisting of a drive cabinet and a step-up transformer would be located near the pig receivers at EOF to power and control the ESP at the well. This VSD package would be approximately 3 ft by 8 feet by 6 feet high. A new power/communication cable would run underground from the VSD at EOF to connect to the ESP and pipeline at Lease 421.

2.3 Proposed Pipelines

2.3.1 Production Pipeline

An existing wrapped and coated 6" shipping line runs from the 421-1 pier along a Venoco right of way approximately 1300' along the old seawall to a point just south of the 12th tee of Sand Piper Golf Course and then turns north into the Holly pipeline right of way and runs another 500' to the edge of the EOF. It terminates at a valve box located on an easement granted to Venoco that lies just outside the limits of the EOF parcel, south of the heliport. This line was last hydrotested by Mobil in March 1994. The existing shipping line will be extended to go all the way to pier 421-2. It will then be hydrotested to 100 psi and internally coated with a new plastic coating. The 6" pipe will be protected against external corrosion by enhancing the impressed current cathodic protection system on the Holly pipelines to include the Lease 421 shipping line.

A new 3" flowline will be inserted inside the existing 6" pipeline. This flowline will be designed with a maximum operating pressure of 275 psig and a minimum hydrotest pressure of 425 psig and be rated for continuous operation at temperatures up to 130 °F. At a minimum, the pipeline will hold the indicated test pressure for a period of not less than 8 hours. Hydrotest water will be provided by the Goleta Water District connection located at the EOF and drained back to the EOF when finished. The returned hydrotest water will be introduced into the oil processing system for treatment and disposal.

A leak detection sensor will be installed on the 6" line. The sensor will detect the presence of hydrocarbon in the annular space between the 6" line and the 3" flowline. In the event of a leak, the ESP well will be automatically shut in and an alarm will sound at the EOF.

A non-metallic composite pipe will be used for the 3" flowline. This pipe is made of a type of high density polyethylene (HDPE) with a layer of metal or fiberglass mesh imbedded within. This type of pipe offer good chemical resistance and excellent flexibility. Because it is non-conductive and immune to galvanic electrochemical effects, it will not corrode like metal piping. It is also impervious to many aggressive chemicals as well as scale build-up.

2.3.2 Production Pipeline Installation

To ensure integrity of the existing 6" line between Leas 421 and EOF, a new internal pipe lining will be installed. This lining will be applied using a process known as "fold and form" sliplining. This is a process by where a thin-wall, High Density Polyethylene (HDPE) liner is temporarily deformed, into a "heart" shape cross-section, which will then allow insertion into the existing 6" oil pipeline. After insertion, the pipe is "inflated" back into its circular cross section. The inflation process is accomplished using low pressure (less than 100 psig) air or water. In some cases, a heated media, such as hot water, may be used to aid in restoring the final shape of the liner.

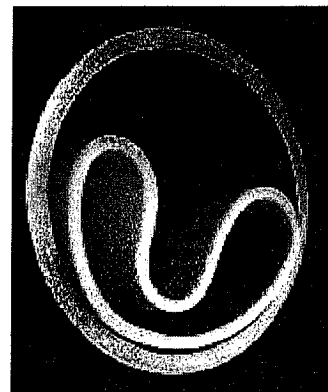


Figure 2: Fold and form liner.

Along the existing 6" oil line, at a point close to the location of the 1994 leak, there is an exposed section with two 90° bends where the protective wrapping has been lost. A section of pipe, approximately 25 feet in length, will be cut out and replaced with new wrapped 6" pipe. The section will serve as an intermediate pulling point for both the 6" slipline and the internal flow line.

A pulling winch will be located at this position and will pull the 6" "fold and form" liner to this location from two insertion points; one insertion point will be located in the pier 421 access roadway, and the other insertion point will be located adjacent to the existing valve vault located just outside the EOF fence, alongside the access roadway. After the liner has been pulled through each of the two pipeline segments, it will be inflated into final size and tested. The section of 6" line between the two pulling locations will be temporarily left open in order to effect the pull of the internal flowline.

In a manner similar to the installation of the 6" "Fold and form" liner, the 3" internal flow line will be pulled into the now-internally lined 6" oil pipeline. Following integrity testing of the newly installed liner in the existing 6" pipeline, a pulling winch will again be located at the proposed pulling location. The 3" flowline will be pulled into this line from two directions; one insertion point will be located in the pier 421 access roadway, and the other insertion point will be located adjacent to the existing valve vault located just outside the EOF fence, alongside the access roadway. After the two flowlines have been pulled through each of the two pipeline segments, they will be joined together into one continuous segment and pressure tested. Final assembly will include installation of annular casing end seals and anchors at the ends of the existing 6" out pipe.

Following successful integrity testing of the 3" flowline, the final tie-ins will take place. Piping will be installed to connect the 3" flowline from the valve vault outside of EOF, to an existing flange connection point on the 8" pipeline carrying produced oil from Platform Holly. This connection point is located at the southwest corner of the EOF inside the fence. Pressure sensors and gauges as well as a flowmeter sensor will be installed on this portion of the flowline to monitor production from Well 421-2. A connection for a temporary pig receiver will also be installed in this location to receive cleaning pigs that may be run in the flowline in the future.

At the conclusion of the flowline installation work, the discontinuous 6" containment piping at the pipe pulling location will be "clam shelled" back together again, thus providing continuous 100% containment. The re-installation will again be pressure tested to verify containment piping integrity.

2.4 Installation of Electrical Cables

The ESP at well 421-2 will receive power through using a direct burial and armored 200 KVA, 1,500 VAC power cable that will run underground within the existing access easement. The maximum electrical power requirement to operate Well 421-2 is 115 kW. In addition, a smaller 480 VAC cable will also be installed in the same excavation. This cable will provide electrical power for well instrumentation and control systems, utility power receptacle, and an integral communication cable for data transfer. The delivery voltage of the utility power will be 480V, and a small step-down transformer will be installed in the 421-2 electrical panel to drop the voltage down to 120V. The utility power outlet will be located inside of the power panel, and will be a heavy duty, 20 Amp, "Arktite" type of plug receptacle. This type of receptacle requires specially designed mating plugs which are circuit breaking and require a twist to lock action in order to engage or disengage.

The proposed new electrical cables will require a minimum burial depth of 24" beneath the existing access road and will be designated with power cable markers along the route. The cable route will be surveyed and staked within the access road right of way. A 2500' by 1' by x 30" deep trench will be excavated. 6" of sand bedding will be placed into the bottom of the ditch. The two power cables will be placed into the ditch; and backfilled with a concrete slurry mixture to a minimum depth of 6" over the cables. The remainder of the ditch will be filled using materials excavated from the site, and the surface will be restored. The estimated cut and fill volumes are as follows:

Total Cable Excavation Volume:

$$2500' \times 2.5' \times 1' = 6,250 \text{ Ft}^3 \text{ or } 231 \text{ Yd}^3$$

Sand Bedding (Imported):

This assumes bedding will be import material. Depending upon condition of excavated material, it may be possible to reuse excavated materials. This decision cannot be made until time of actual construction.

$$2500' \times .5' \times 1' = 1,250 \text{ Ft}^3 \text{ or } 46 \text{ Yd}^3$$

Slurry (Imported):

$$2500' \times .75' \times 1' = 1,875 \text{ Ft}^3 \text{ less } 125 \text{ Ft}^3 \text{ or } 65 \text{ Yd}^3$$

Backfill:

$$2500 \times 1.25' \times 1' = 3,125 \text{ Ft}^3 \text{ or } 115 \text{ Yd}^3$$

Export:

$$231 \text{ Yd}^3 - 46 \text{ Yd}^3 - 65 \text{ Yd}^3 = 120 \text{ Yd}^3$$

In addition to the above excavation volumes, additional excavation will be required to repair the existing 6" oil line at the 12th tee area of the Sandpiper Golf Course and to expose piping between Piers 1 and 2. It is assumed that the amount of excavation and backfill for this other work will be equal. The amount of material to be excavated and backfilled at these other locations is 116 Yd³.

After the cable and conduit has been installed, the trench will be back filled and compacted in conjunction with access road reconstruction. Trenching and backfill will not take more than one day. Inside the EOF, the cables will be routed to tie into the existing Ellwood systems.

**VENOCO LEASE 421 RE-COMMISSIONING PLAN
PROJECT DESCRIPTION
MAY 2013**

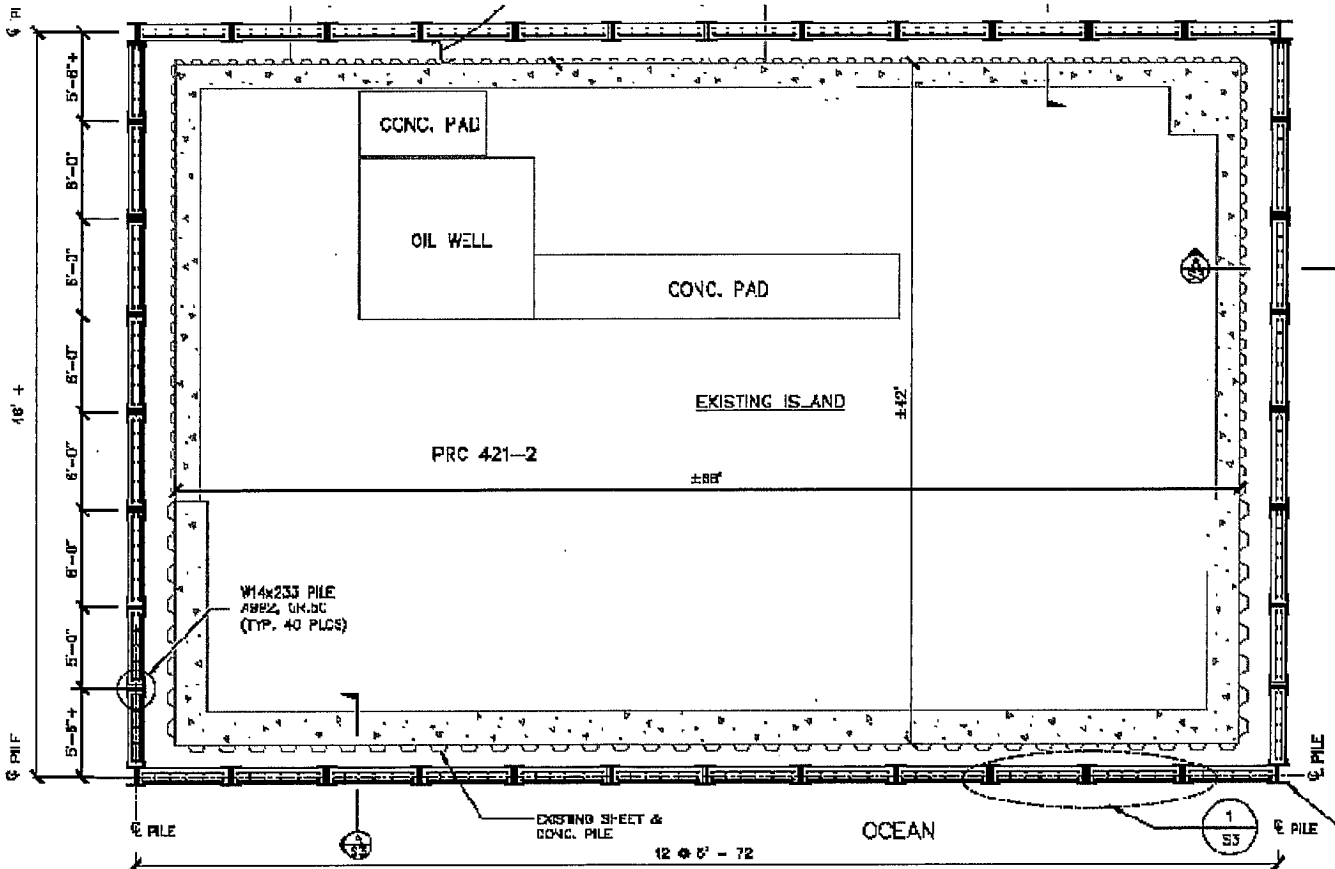
2.5 Communications

The Motor Control panel at EOF will provide a Modbus digital output. The Motor Controller will communicate with the existing EOF Remote Monitoring System (RMS), via a new, dedicated, Modbus Plus Based, cable link. A PLC installed in the Motor Controller will collect both wellhead data from the 421-2 pier and performance data from the ESP. All of the operational systems and safety systems for the 421-2 well will be provided with a real time monitoring capability at the RMS Operator Interface Terminals (OIT) located in the EOF control room. All Local Alarms and Shutdown Safeties for the well will be displayed at the RMS. The well will have the capability of being shutdown remotely from the RMS, Operator Interface Terminal, and by the EOF Emergency Shutdown.

2.6 421-2 Caisson Repairs

The south (ocean facing) side of the 421-2 caisson was previously repaired to address integrity issues caused by deteriorated caisson wall. The repair was carried out by installing a new wall face on the south side and a portion of the east and west sides of the caisson. As part of the return to production project, the north wall, as well as the remaining portions of the east and west walls will be repaired.

Steel piles will be installed in 25 foot deep holes drilled around the caisson. The piles will be spaced 6 feet apart. The new wall will consist of pre-cast concrete panels installed in between the steel piles. Concrete will then be poured in the space between the new concrete panels and the existing caisson.



**VENOCO LEASE 421 RE-COMMISSIONING PLAN
PROJECT DESCRIPTION
MAY 2013**

2.7 Construction and Impacts

2.7.1 Construction Activities

Construction for the Lease 421 Return to Production Project will involve the sequence of events listed below. Some of these tasks may occur concurrently.

- 1) 421-2 caisson repair
- 2) Installation of Electric Submersible Pump (ESP) with tubing, packer and subsurface control equipment in well 421-2,
- 3) Installation of electrical motor control panel, transformer, and power cable connections at the EOF;
- 4) Installation of surface control equipment at the 421-2 wellhead,
- 5) Pigging and clean-up of the existing 6" oil pipeline;
- 6) Cut-out and removal of two 90° bends within existing 6" oil pipeline and installation of internal liner;
- 7) Installation of 6" pipeline extension to 421-2 pier and installation of tie-in piping inside EOF
- 8) Insertion of new 3" flowline within existing 6" oil line;
- 9) "Clamshell" restoration of existing 6" pipeline at area where 90° bends removed;
- 10) Trench excavation and installation of new power cables in existing access road;
- 11) Testing of pipelines and equipment;
- 12) Work site restoration and cleanup.

The 6" shipping line was flushed with water and hydro-tested in March 1994. It has not been used since. Any field cuts will be made above a portable containment basin with a vacuum truck present to capture any fluid and prevent contamination to the surrounding environment. Insertion of the new plastic liner and the 3" flowline within the 6" shipping line will occur by placing the winches and spooling units at the intermediate block valve location or either end of the pipeline minimizing the impact on the Golf Course activities.

The construction activity will be most notable during the periods of repairing the 421-2 caisson, insertion of the plastic liner and the new flow line within the 6" pipeline, burial of the power cable and movement of workover rig to and from pier 421-2. Each one of these operations should be very brief. The equipment and personnel anticipated during the various tasks of this project are as follows:

EQUIPMENT	PERSONNEL	TOOLS
1 Trencher	1 Project Supervisor	2 Pneumatic Wrenches
1 Backhoe with loader	1 Welder	2 Pneumatic Grinders
1 Power Generator	1 Welder's Helper	2 Oxy-acetylene Cutting Rigs
1 Loader	1 Heavy Equipment Operator	1 Hydraulic Power Unit
1 Dump Truck	1 Pipefitter	1 HDPE Fusion Machine
1 Vacuum Truck	3 Pipe Installation Laborers	1 Hydrotest Pump
1 Camera Truck	2 Surveyors	
1 Flatbed Truck with service crane	1 Truck Driver	
1 Operations Van	3 Electrical installation	
1 Well Service/ Workover Rig	1 Mechanic for Pump	
1 Trailer Mounted Mud Pump	6 Workover Rig Operators	
1 Cable Spooler	5 Semi Truck Drivers	
1 Blow Out Preventer Stack		
1 Crane with Pile Driver		
5 Semi Trucks		

**VENOCO LEASE 421 RE-COMMISSIONING PLAN
PROJECT DESCRIPTION
MAY 2013**

During the construction phase of the project all construction equipment and materials will be staged in an existing easement area immediately adjacent to the EOF west fence line (refer to Drawing # 2488-G-042). A 30-foot by 30-foot helipad at the south end of the EOF may also be used as an additional staging area for vehicles and material should the need arise.

The work schedule anticipates a total of approximately 90 work days with hours of construction being between 7:00 AM and 7:00 PM. Movement of traffic along the access road through the Sand Piper Golf Course will be regulated in order to minimize impacts and disturbance to the Golf Course operation.

The down hole well work associated with the 421-2 well is expected to take a maximum of 15 days. A portable well service rig will be placed over the 421-2 well and proceed to remove the tubing, packers and flow isolation valves that were placed in the well during previous operations. The ESP and SSSV will be installed at this time. The completion work will be based upon a program approved by the California State Lands Commission and the Department of Oil, Gas and Geothermal Resources.

The emissions from the constructions spread for the project have been estimated and are presented in Attachment 4.

In order to minimize construction impacts, Best Management Practices (BMP's) will be implemented through the construction phase. Venoco will implement site-specific construction mitigation plans, including a traffic minimization plan and equipment refueling plan. Overall, no significant impacts are expected during construction and operation of the Lease 421 well and associated equipment.

2.7.2 Changes to Existing Setting/ Project Impacts

The resumption of production at Lease 421 is not expected to have any major impacts to the surrounding environment. No processing equipment will be installed on the pier since all processing will be done using existing equipment in the EOF. The use of an ESP will eliminate the surface pumping equipment and noise associated with the previous oil pumping equipment. The design of the double walled pipeline will significantly reduce chances for a spill to occur. A leak detection sensor as mentioned previously will be installed and will shut the wells down in the unlikely event of a pipeline leak.

Maintenance activities are expected to be minimal. A production operator will visit the well daily to ensure correct operation.

At intervals typically expected to be a minimum of two years, the 421-2 pump may need to be retrieved and replaced or rebuilt in order to meet varying production requirements. If this occurs, a workover rig will be necessary to perform the operation. An entire pump change-out operation is expected to take approximately three days.

The road bed will receive minimal traffic, and as such, will not need much maintenance or remedial grading. However, should the need arise, additional gravel or surface material may be added in order to protect against the formation of potholes and settlement.

TABLE 1
VENOCO BEACHFRONT 421 LEASE
CONSTRUCTION EQUIPMENT

ONSITE EQUIPMENT	NUMBER	RATING (hp)	AVERAGE LOAD (%)	EM. FAC. CODE	SCHEDULE			EMISSION FACTORS (g/hp-hr) ¹				PM ₁₀
					hrs/day	days/wk	weeks	ROG	NO _x	SO ₂	CO	
A-Frame Truck	1	170	41	8	8	5	3	0.57	11.00	0.20	2.28	0.48
Backhoe	1	115	46.5	2	8	5	3	1.95	8.80	0.19	7.34	1.21
Ditcher/Trencher	1	150	69.5	10	6	5	2	1.16	8.80	0.21	4.60	0.86
Flat Bed Truck	1	170	41	8	8	5	3	0.57	11.00	0.20	2.28	0.48
Generator	1	40	74	10	12	5	3	1.16	8.80	0.21	4.60	0.86
Loader	1	160	54	6	0	0	0	1.12	8.80	0.19	2.71	0.76
Mud Pump (trailer mounted)	1	100	74	10	6	5	1	1.16	8.80	0.21	4.60	0.86
Welding Truck	1	150	41	8	8	5	3	0.57	11.00	0.20	2.28	0.48
10 Ton Winch (Grundo)	1	35	80	10	8	2	1	1.16	8.80	0.21	4.60	0.86
Dump Truck	1	170	75	8	6	4	2	0.57	11.00	0.20	2.28	0.48
Fusion Machine	1	25	75	10	8	5	2	1.16	8.80	0.21	4.60	0.86
Hydrotest Pump	1	60	75	10	8	3	1	1.16	8.80	0.21	4.60	0.86
Vacuum Truck	1	170	75	8	8	3	1	0.57	11.00	0.20	2.28	0.48
Well Service/Workover Rig	1	400	80	10	12	2	2	1.16	8.80	0.21	4.60	0.86
X-Ray Truck	1	150	15	8	6	5	2	0.57	11.00	0.20	2.28	0.48
Jet Pump (diesel)	0	140	80	11	8	5	0	1.27	11.20	0.21	3.03	0.95
Pile Driver (diesel)	1	400	50	11	3	4	0	1.27	11.20	0.21	3.03	0.95
Drill Rig (diesel)	1	125	80	11	5	5	0	1.27	11.20	0.21	3.03	0.95
Crane - 45 ton (power) (gasolir)	1	109	80	11	8	5	0	1.27	11.20	0.21	3.03	0.95
Air Compressor (diesel)	1	40	80	11	3	4	0	1.27	11.20	0.21	3.03	0.95
Concrete Pump (diesel)	1	40	50	11	6	2	0	1.27	11.20	0.21	3.03	0.95
Welder (gasoline)	1	50	50	11	7	5	0	1.27	11.20	0.21	3.03	0.95
Fugitive Dust	0.2 acres		100	18	12	5	2					3.49 lb/acre-hr

¹ Emission factors from APCD Form-24 - Table 2, tied to Em. Fac. Code above.

OFFSITE EQUIPMENT	NUMBER	VEHICLE TYPE	DISTANCE (miles/day)	SCHEDULE			EMISSION FACTORS (g/mile) ²			
				days/wk	weeks	ROG	NO _x	SO ₂	CO	PM ₁₀
Operations Van	1	MDT	100	5	2	0.25	1.63	0.3	3.07	0.465
Pickup Truck	1	MDT	100	5	2	0.25	1.63	0.3	3.07	0.465
Camera Truck	1	MDT	100	5	1	0.25	1.63	0.3	3.07	0.465
X-Ray Truck	1	MDT	100	5	2	0.25	1.63	0.3	3.07	0.465

² ROG, NO_x, and CO factors from MVE/G, 2002 Vehicle Mix. SO₂ from SCAQMD CEQA manual, Table A9-5-L. PM₁₀ from SCAQMD CEQA manual, Table A9-5-K-6. All factors at 55 mph.

TABLE 2
VENOCO BEACHFRONT 421 LEASE
DAILY AND TOTAL CONSTRUCTION EMISSIONS

EQUIPMENT	MAXIMUM DAILY EMISSIONS (lb/day)					TOTAL EMISSIONS (pounds)				
	ROG	NO _x	SO ₂	CO	PM ₁₀	ROG	NO _x	SO ₂	CO	PM ₁₀
A-Frame Truck	0.7	13.5	0.2	2.8	0.6	10.5	202.8	3.7	42.0	8.9
Backhoe	1.8	8.3	0.2	6.9	1.1	27.6	124.5	2.7	103.8	17.1
Ditcher/Trencher	1.6	12.1	0.3	6.3	1.2	16.0	121.3	2.9	63.4	11.9
Flat Bed Truck	0.7	13.5	0.2	2.8	0.6	10.5	202.8	3.7	42.0	8.9
Generator	0.9	6.9	0.2	3.6	0.7	13.6	103.4	2.5	54.0	10.1
Loader	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mud Pump (trailer mounted)	1.1	8.6	0.2	4.5	0.8	5.7	43.1	1.0	22.5	4.2
Welding Truck	0.6	11.9	0.2	2.5	0.5	9.3	179.0	3.3	37.1	7.8
10 Ton Winch (Grundo)	0.6	4.3	0.1	2.3	0.4	1.1	8.7	0.2	4.5	0.8
Dump Truck	1.0	18.6	0.3	3.8	0.8	7.7	148.4	2.7	30.8	6.5
Fusion Machine	0.4	2.9	0.1	1.5	0.3	3.8	29.1	0.7	15.2	2.8
Hydrotest Pump	0.9	7.0	0.2	3.7	0.7	2.8	21.0	0.5	11.0	2.0
Vacuum Truck	1.3	24.7	0.4	5.1	1.1	3.8	74.2	1.3	15.4	3.2
Well Service/Workover Rig	9.8	74.5	1.8	38.9	7.3	39.3	298.0	7.1	155.8	29.1
X-Ray Truck	0.2	3.3	0.1	0.7	0.1	1.7	32.7	0.6	6.8	1.4
Jet Pump (diesel)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pile Driver (diesel)	1.7	14.8	0.3	4.0	1.3	0.0	0.0	0.0	0.0	0.0
Drill Rig (diesel)	1.4	12.3	0.2	3.3	1.0	0.0	0.0	0.0	0.0	0.0
Crane - 45 ton (power) (gasolin)	2.0	17.2	0.3	4.7	1.5	0.0	0.0	0.0	0.0	0.0
Air Compressor (diesel)	0.3	2.4	0.0	0.6	0.2	0.0	0.0	0.0	0.0	0.0
Concrete Pump (diesel)	0.3	3.0	0.1	0.8	0.3	0.0	0.0	0.0	0.0	0.0
Welder (gasoline)	0.5	4.3	0.1	1.2	0.4	0.0	0.0	0.0	0.0	0.0
Fugitive Dust					8.4					83.8
Operations Van	0.1	0.4	0.1	0.7	0.1	0.6	3.6	0.7	6.8	1.0
Pickup Truck	0.1	0.4	0.1	0.7	0.1	0.6	3.6	0.7	6.8	1.0
Camera Truck	0.1	0.4	0.1	0.7	0.1	0.3	1.8	0.3	3.4	0.5
X-Ray Truck	0.1	0.4	0.1	0.7	0.1	0.6	3.6	0.7	6.8	1.0
Total	28.0	265.7	5.8	102.8	29.6	155.4	1,601.6	35.2	628.1	202.2

ATTACHMENT 1

ADVANCE COCHRAN FAULT

PRC 129


LA VIGIA FAULT

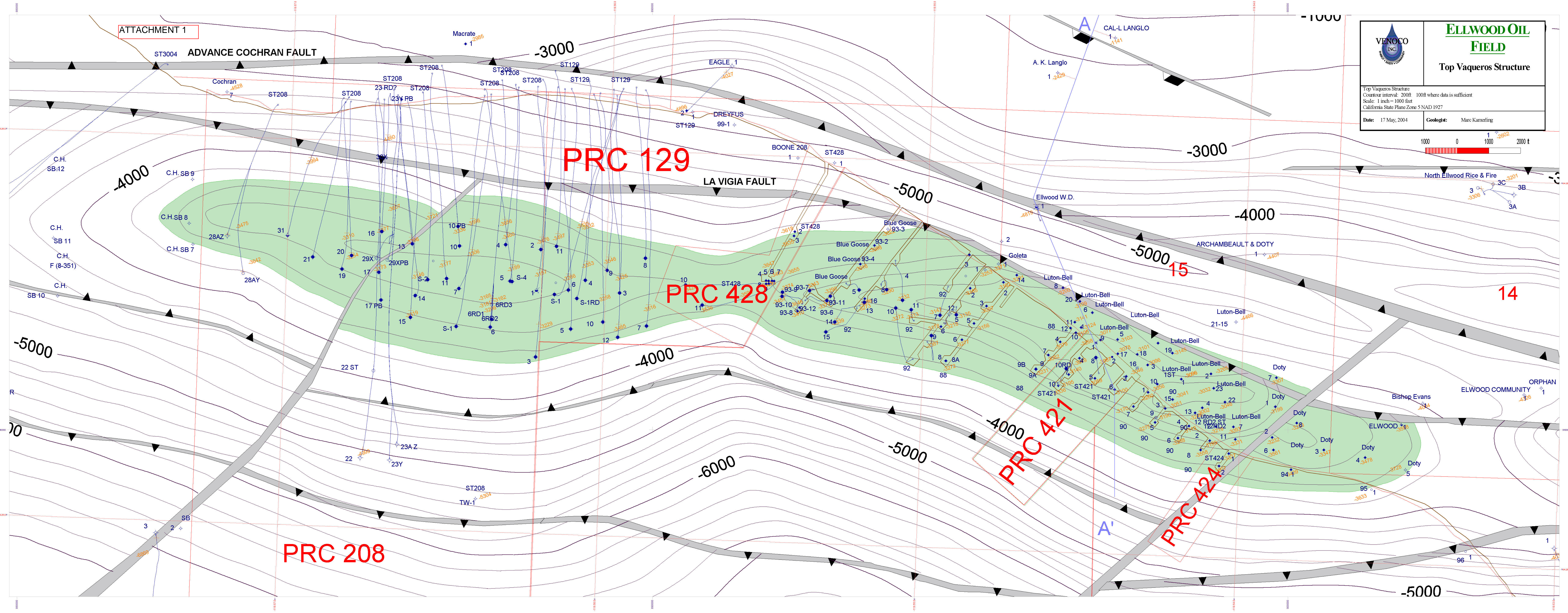
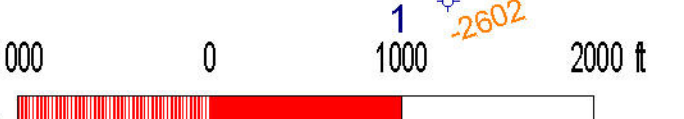
PRC 428

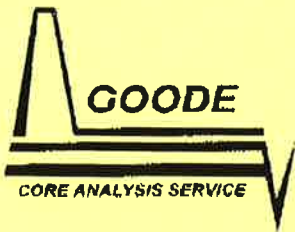
PRC 208

PRC 427

PRC 424

	ELLWOOD OIL FIELD Top Vaqueros Structure
	<small>Top Vaqueros Structure Contour interval: 200ft 100ft where data is sufficient Scale: 1 inch = 1000 feet California State Plane Zone 5 NAD 1927</small>
<small>Date: 17 May, 2004</small>	<small>Geologist: Marc Kamerling</small>





1400 Easton Drive, Suite 111 • Bakersfield, CA 93309 • (661) 322-5540 • Fax (661) 322-5576

June 28, 2001

Mr. Mike Wracher
 VENOCO, Inc.
 217 State Street
 Santa Barbara, CA 93101

Subject: Crude Analysis Data
 Well: Various
 File No. 101189

Dear Mr. Wracher:

Samples were submitted to our laboratory for viscosity, API gravity, and pyro-chromatography analysis. The results of these measurements are presented in the accompanying report along with tabular data.

Viscosity was measured on extracted oil by a cone and plate viscometer. API was determined by pycnometer. Tabular data of these viscosity measurements are included in the report.

Pyro-Chromatography samples were loaded in a low dead volume container and vaporized at 300° centigrade. The evolved gasses were passed directly onto a chromatographic column. The separated components were detected by a flame ionization detector and recorded. Indices calculated from the integrated data are presented along with copies of chromatograms from the sample.

The sample of produced oil from well 3120-14 was weathered by mixing with sea water supplied from Carpenteria sampled 6/01/01. A sample was removed after 2,7, and 14 days of mixing. They were analyzed by Pyro-Chromatography for comparison to the seep oil collected. Components from the seep appear to be similar to the sample after 14 days of mixing. Normal Alkanes heavier than n-C12 are dominant in both. The highest peak is n-C20 in both samples. Bio degradation and water washing is likely involved in the alteration process.

We are pleased to have performed this service and hope we will be called upon again in the future.

Very Truly Yours,

GOODE CORE ANALYSIS SERVICE

Bryan A. Bell

Distribution: 4 copies data: Addressee

GOODE CORE ANALYSIS SERVICE

Company: Veneco Inc.
Well: Various
Field: Offshore
Job No: 101189

Date: 3/13/00

CRUDE OIL ANALYSIS

SAMPLE I.D.	VISC.(cp) 122F	VISC.(cp) 200F	API	EXTRACTED WEIGHT(gm)
SEEP	> 150000			
421-2	<9		35.7	
3120-14	128		16.6	

Viscosity measured by a Cone and Plate Viscometer
Gravity measured by pycnometer

GOODE CORE ANALYSIS SERVICE

File No.: 101189
 Date: 6/27/2001
 Sample Type: Various

Company: Veneco Inc.
 Well: Various
 Field: Holly
 County, St: State Offshore

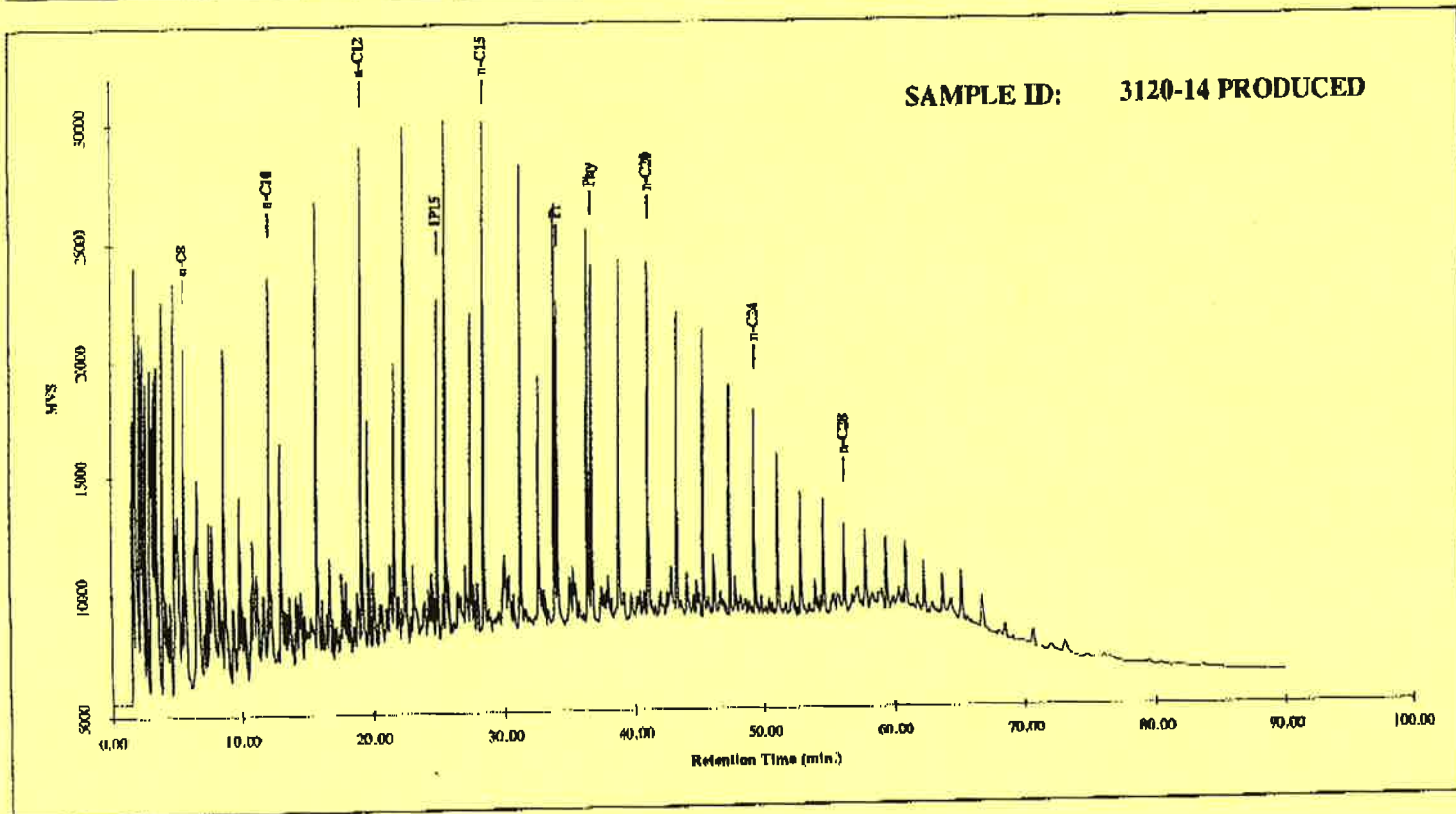
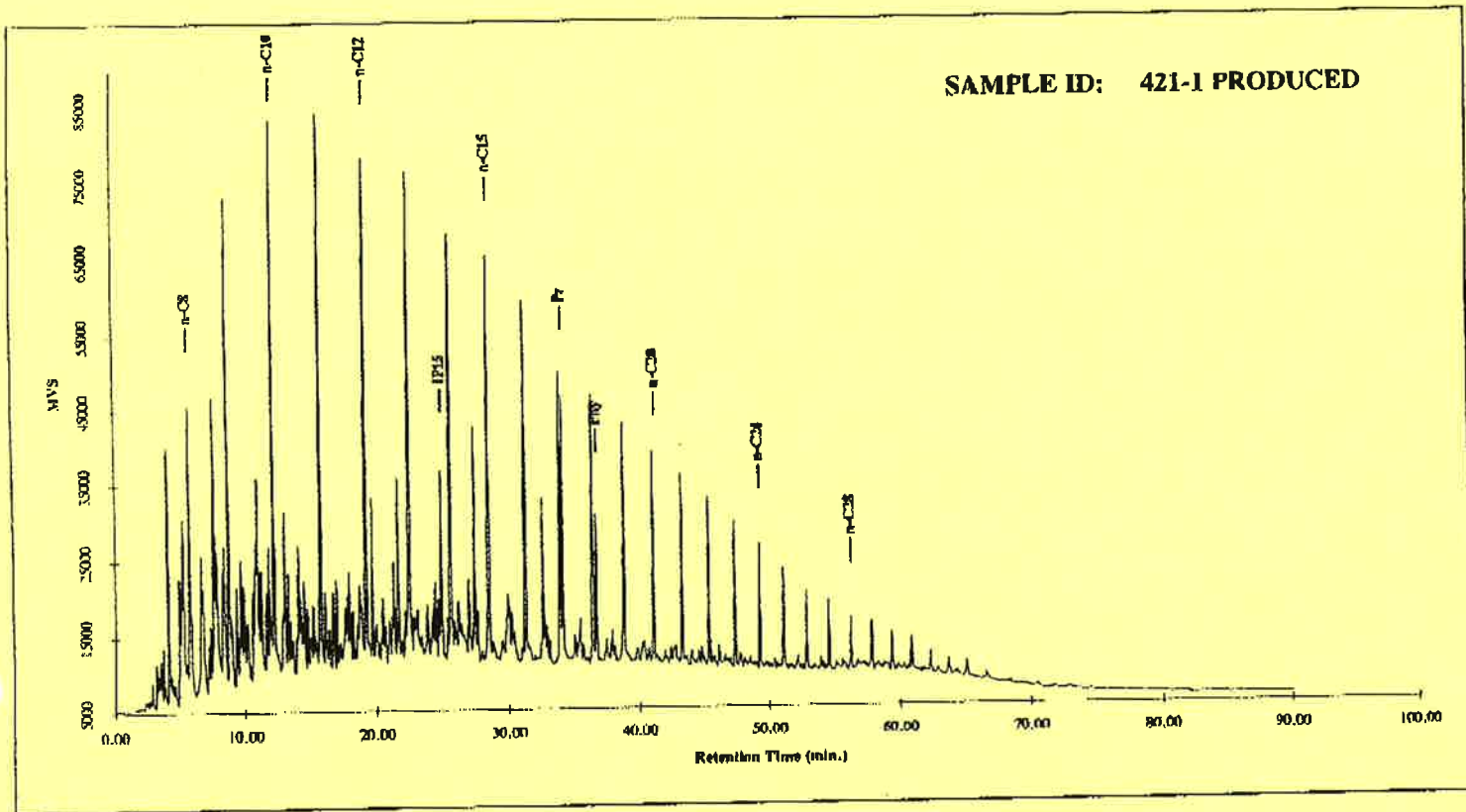
PYRO-CHROMATOGRAPHY TABULAR DATA

Smpl #	Sample ID	17+18/ Pr+Phy	IP15/ n-C14	Pr/Phy	CPI	% < n-C13	% > n-C18	% n-C/ Total	Total Area
1	421-2 Prod	1.29	0.50	1.63	1.45	37.5	34.7	21.8	3.4
2	3120-14 Prod	1.16	0.69	0.92	0.98	28.8	49.8	18.0	1.8
3	Seep Oil	1.05	0.75	0.81	1.13	2.3	85.1	15.4	3.3
4	421-2 Soil Sam	1.00	0.95	0.85	1.00	7.7	71.5	13.5	4.0
5	421-1 Soil Sam	1.00	0.92	0.93	0.99	8.0	70.5	11.1	3.4
6	After 2 Days	0.98	0.71	0.92	0.98	2.6	74.0	15.6	2.4
7	After 7 Days	1.10	0.78	0.84	1.09	0.2	83.9	17.7	1.2
8	After 14 Days	1.06	0.97	0.58	1.01	0.8	94.0	16.1	0.2

Company: Veneco Inc.
Well: Various
Field: Holly

File No.: 101189
Date: 6/27/2001
Sample Type: Various

PYRO-CHROMATOGRAPHY



**Ellwood Field
State Lease PRC
Well 421-2
Work over Program**

Casing:

20 91 C 349 (19.166 ID)
13-3 8 61 C 1999 (12.515 ID)
9 45 C 3103 (8.032 ID)
8 Open Hole 3103 -3150

Volumes:

9 x 3-1 2 0.0508 bpf
9 x 2-7 8 0.0546 bpf
9 Casing 0.0627 bpf
3-1 2 Tubing 0.0087 bpf
2-7 8 Tubing 0.0058 bpf

Tubing:

3-1 2 9.3 (2.992 ID)
2-7 8 6.5 (2.441 ID)

Detailed Procedure:

- 1. Notify Coastal Commission, Fire Dept, Clean Seas, SBC, APCD, DO & SLC of pending well work. Move in and rig up Pool HD-35 doubles pulling unit on location. Spot rig with the assistance of a crane. Spot pump pit on pier or road as necessary. Location and equipment will be set up for preventing discharge to the water and land. Clean Seas boat and equipment to be in place per permit conditions and all notifications should be made. Have 70 bbl vacuum truck on location per permit conditions. Spill prevention measures will be in place before well work is initiated. An approved refueling procedure will be followed for any equipment that must be refueled on location. Drip pans will be in place for all appropriate equipment. Tubing and equipment pulled from the well will be laid down with lining in place and bundled wrapped to prevent surface contamination**
- 2. Conduct lease orientation meeting and discuss rig up. Hold pre-job safety meeting. Confirm casing and tubing pressure are zero. Set back pressure valve. Remove dry hole tree. Install **9 3M (8.5 bore) Class III BOP**. Test BOPE against 3-1/2" and 2-7/8" tubing to 1500 psi per DOG regulations. DOG to witness BOPE test.**
- 3. Back out hold down pins and unset inflatable packer. Re-land hanger and secure with hold down pins. Allow element to relax overnight. Pull donut to the floor while stripping through closed annular. If packer element is swabbing, rig up slick line unit. Install TIW valve on donut and rig up lubricator with pump-in sub. Pressure test lubricator and TIW valve through pump-in sub to 1500 psi. Pressure up control line to open SCSSV at 355'. Shift sliding sleeve open at 2800'. Rig down slick line company.**

4. Pull existing 3-1/2" and 2-7/8" tubing completion and jewelry. Lay down jewelry and send in for reconditioning. Keep hole full at all times while pulling out of the hole. Monitor well for swabbing due to possible swollen packer element.
5. Make up 9" 45# casing scraper and run in the hole to +/- 2000' while picking up an additional +/- 1650' of new 3-1/2" tubing. Pull out of the hole and stand back 3-1/2" tubing out of the way of the 2-7/8" tubing.
6. Run in the hole with open ended 2-7/8" tubing (plus additional 3-1/2" tubing) to bottom of the hole at 3150' (last tagged during work over in 2001). Rig up stimulation company. Acidize Vaqueros Sand production interval (3103' to 3150') by equalizing 1200 gallons of inhibited 15% HCl (72 hours), including appropriate additives, down the tubing across the sand face.
7. Pull out of the hole and lay down all 2-7/8" tubing and send in to inventory.
8. Rig up cable spooler and stainless steel tubing line spoolers. Make up ESP equipment including pump, motor and cable. Run ESP equipment, cable and chemical lines to 2000' while banding to new tubing as per attached drawing.
9. Make up tubing hanger. Install cable feed through, control line and chemical line.
10. Land hanger in tubing spool and secure with lock down pins. Rig up slick line unit. Install TIW valve on riser and rig up lubricator with pump-in sub. Pressure test lubricator and TIW valve through pump-in sub to 1500 psi. Pressure up control line to open SCSSV at 355'. Set plug in "BX" nipple at 1912'. Pull out of the hole. Fill tubing with water (if necessary) and pressure up to 1500 psi to set hydraulic packer. Close SCSSV and bleed off pressure above to test. Pressure test annulus to 500 psi. Equalize pressure across SCSSV and pressure up on control line to open. Run in the hole and equalize fluid across plug and retrieve from 1912'. Rig down slick line company.
11. Set back pressure valve. Remove BOP. Install and test tree. Hook up cable to variable speed drive. Hook up flow line. Hook up control line and chemical line.
12. Start pump and check for proper rotation and monitor parameters using monitoring system. Rig down equipment and release crews.

ATTACHMENT 4

**TABLE 1
VENOCO BEACHFRONT 421 LEASE
CONSTRUCTION EQUIPMENT**

ONSITE EQUIPMENT	NUMBER	RATING (hp)	AVERAGE LOAD (%)	EM. FAC. CODE	SCHEDULE			EMISSION FACTORS (g/hp-hr) ¹				
					hrs/day	days/wk	weeks	ROG	NO _x	SO ₂	CO	PM ₁₀
A-Frame Truck	1	170	41	8	8	5	3	0.57	11.00	0.20	2.28	0.48
Backhoe	1	115	46.5	2	8	5	3	1.95	8.80	0.19	7.34	1.21
Ditcher/Trencher	1	150	69.5	10	6	5	2	1.16	8.80	0.21	4.60	0.86
Flat Bed Truck	1	170	41	8	8	5	3	0.57	11.00	0.20	2.28	0.48
Generator	1	40	74	10	12	5	3	1.16	8.80	0.21	4.60	0.86
Loader	1	160	54	6	0	0	0	1.12	8.80	0.19	2.71	0.76
Mud Pump (trailer mounted)	1	100	74	10	6	5	1	1.16	8.80	0.21	4.60	0.86
Welding Truck	1	150	41	8	8	5	3	0.57	11.00	0.20	2.28	0.48
10 Ton Winch (Grundo)	1	35	80	10	8	2	1	1.16	8.80	0.21	4.60	0.86
Dump Truck	1	170	75	8	6	4	2	0.57	11.00	0.20	2.28	0.48
Fusion Machine	1	25	75	10	8	5	2	1.16	8.80	0.21	4.60	0.86
Hydrotest Pump	1	60	75	10	8	3	1	1.16	8.80	0.21	4.60	0.86
Vacuum Truck	1	170	75	8	8	3	1	0.57	11.00	0.20	2.28	0.48
Well Service/Workover Rig	1	400	80	10	12	2	2	1.16	8.80	0.21	4.60	0.86
X-Ray Truck	1	150	15	8	6	5	2	0.57	11.00	0.20	2.28	0.48
Jet Pump (diesel)	0	140	80	11	8	5	0	1.27	11.20	0.21	3.03	0.95
Pile Driver (diesel)	1	400	50	11	3	4	0	1.27	11.20	0.21	3.03	0.95
Drill Rig (diesel)	1	125	80	11	5	5	0	1.27	11.20	0.21	3.03	0.95
Crane - 45 ton (power) (gasolin	1	109	80	11	8	5	0	1.27	11.20	0.21	3.03	0.95
Air Compressor (diesel)	1	40	80	11	3	4	0	1.27	11.20	0.21	3.03	0.95
Concrete Pump (diesel)	1	40	50	11	6	2	0	1.27	11.20	0.21	3.03	0.95
Welder (gasoline)	1	50	50	11	7	5	0	1.27	11.20	0.21	3.03	0.95
Fugitive Dust	0.2 acres		100	18	12	5	2					3.49

¹ Emission factors from APCD Form-24 - Table 2, tied to Em. Fac. Code above.

lb/acre-hr

OFFSITE EQUIPMENT	NUMBER	VEHICLE TYPE	DISTANCE (miles/day)	SCHEDULE		EMISSION FACTORS (g/mile) ²				
				days/wk	weeks	ROG	NO _x	SO ₂	CO	PM ₁₀
Operations Van	1	MDT	100	5	2	0.25	1.63	0.3	3.07	0.465
Pickup Truck	1	MDT	100	5	2	0.25	1.63	0.3	3.07	0.465
Camera Truck	1	MDT	100	5	1	0.25	1.63	0.3	3.07	0.465
X-Ray Truck	1	MDT	100	5	2	0.25	1.63	0.3	3.07	0.465

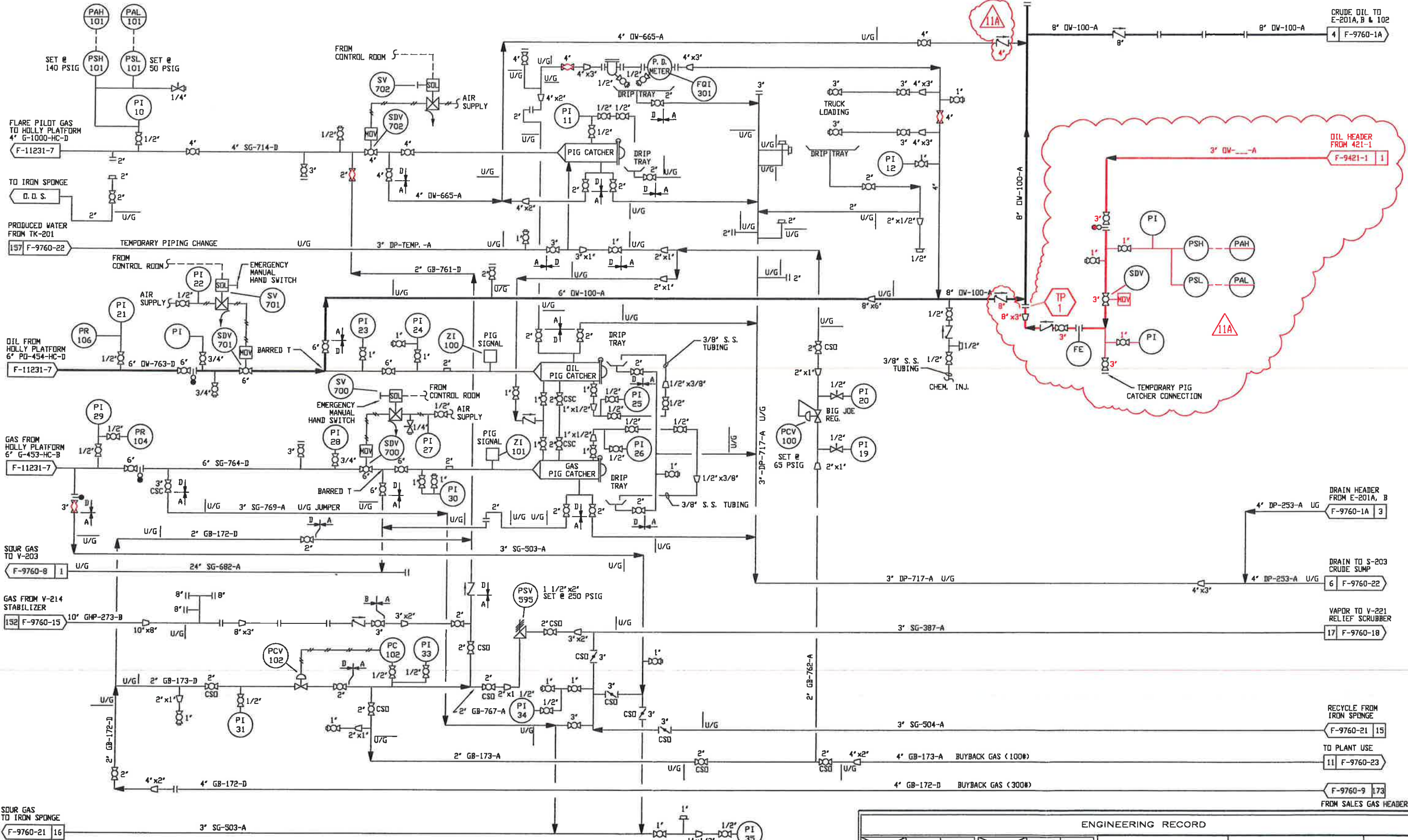
² ROG, NO_x, and CO factors from MVIE7G, 2002 Vehicle Mix. SQ from SCAQMD CEQA manual, Table A9-5-L. PM₁₀ from SCAQMD CEQA manual, Table A9-5-K-6. All factors at 55 mph.

**TABLE 2
VENOCO BEACHFRONT 421 LEASE
DAILY AND TOTAL CONSTRUCTION EMISSIONS**

EQUIPMENT	MAXIMUM DAILY EMISSIONS (lb/day)					TOTAL EMISSIONS (pounds)					
	ROG	NO _x	SO ₂	CO	PM ₁₀	ROG	NO _x	SO ₂	CO	PM ₁₀	
A-Frame Truck	0.7	13.5	0.2	2.8	0.6	10.5	202.8	3.7	42.0	8.9	
Backhoe	1.8	8.3	0.2	6.9	1.1	27.6	124.5	2.7	103.8	17.1	
Ditcher/Trencher	1.6	12.1	0.3	6.3	1.2	16.0	121.3	2.9	63.4	11.9	
Flat Bed Truck	0.7	13.5	0.2	2.8	0.6	10.5	202.8	3.7	42.0	8.9	
Generator	0.9	6.9	0.2	3.6	0.7	13.6	103.4	2.5	54.0	10.1	
Loader	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Mud Pump (trailer mounted)	1.1	8.6	0.2	4.5	0.8	5.7	43.1	1.0	22.5	4.2	
Welding Truck	0.6	11.9	0.2	2.5	0.5	9.3	179.0	3.3	37.1	7.8	
10 Ton Winch (Grundo)	0.6	4.3	0.1	2.3	0.4	1.1	8.7	0.2	4.5	0.8	
Dump Truck	1.0	18.6	0.3	3.8	0.8	7.7	148.4	2.7	30.8	6.5	
Fusion Machine	0.4	2.9	0.1	1.5	0.3	3.8	29.1	0.7	15.2	2.8	
Hydrotest Pump	0.9	7.0	0.2	3.7	0.7	2.8	21.0	0.5	11.0	2.0	
Vacuum Truck	1.3	24.7	0.4	5.1	1.1	3.8	74.2	1.3	15.4	3.2	
Well Service/Workover Rig	9.8	74.5	1.8	38.9	7.3	39.3	298.0	7.1	155.8	29.1	
X-Ray Truck	0.2	3.3	0.1	0.7	0.1	1.7	32.7	0.6	6.8	1.4	
Jet Pump (diesel)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pile Driver (diesel)	1.7	14.8	0.3	4.0	1.3	0.0	0.0	0.0	0.0	0.0	
Drill Rig (diesel)	1.4	12.3	0.2	3.3	1.0	0.0	0.0	0.0	0.0	0.0	
Crane - 45 ton (power) (gasolin	2.0	17.2	0.3	4.7	1.5	0.0	0.0	0.0	0.0	0.0	
Air Compressor (diesel)	0.3	2.4	0.0	0.6	0.2	0.0	0.0	0.0	0.0	0.0	
Concrete Pump (diesel)	0.3	3.0	0.1	0.8	0.3	0.0	0.0	0.0	0.0	0.0	
Welder (gasoline)	0.5	4.3	0.1	1.2	0.4	0.0	0.0	0.0	0.0	0.0	
Fugitive Dust					8.4					83.8	
Operations Van	0.1	0.4	0.1	0.7	0.1	0.6	3.6	0.7	6.8	1.0	
Pickup Truck	0.1	0.4	0.1	0.7	0.1	0.6	3.6	0.7	6.8	1.0	
Camera Truck	0.1	0.4	0.1	0.7	0.1	0.3	1.8	0.3	3.4	0.5	
X-Ray Truck	0.1	0.4	0.1	0.7	0.1	0.6	3.6	0.7	6.8	1.0	
Total	28.0	265.7	5.8	102.8	29.6	Total	155.4	1,601.6	35.2	628.1	202.2

ATTACHMENT 5

POSITIVE DISPLACEMENT
METER
STRAINER
MAMP: 1480 PSI MAMP: 1440 PSI



CONFIDENTIAL
This drawing is based on licensed information and is not to be used other than in the operation or maintenance of the plant for which it was prepared. This drawing is the sole property of Venoco Inc.

MECHANICAL FLOW DIAGRAM
PIG CATCHERS
ELLWOOD ONSHORE FACILITIES

6267 Carpinteria Ave Suite 100
Carpinteria CA. 93013

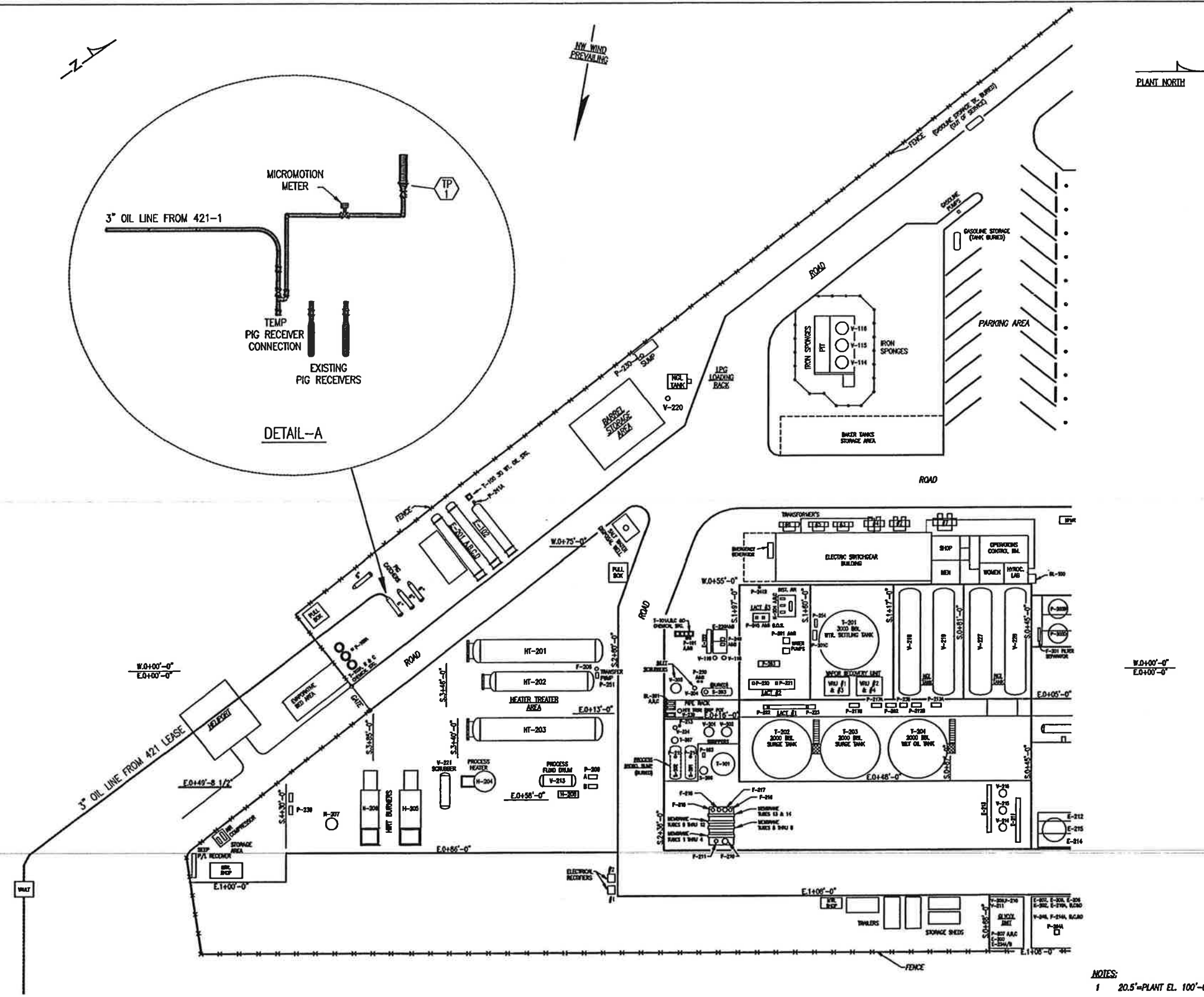
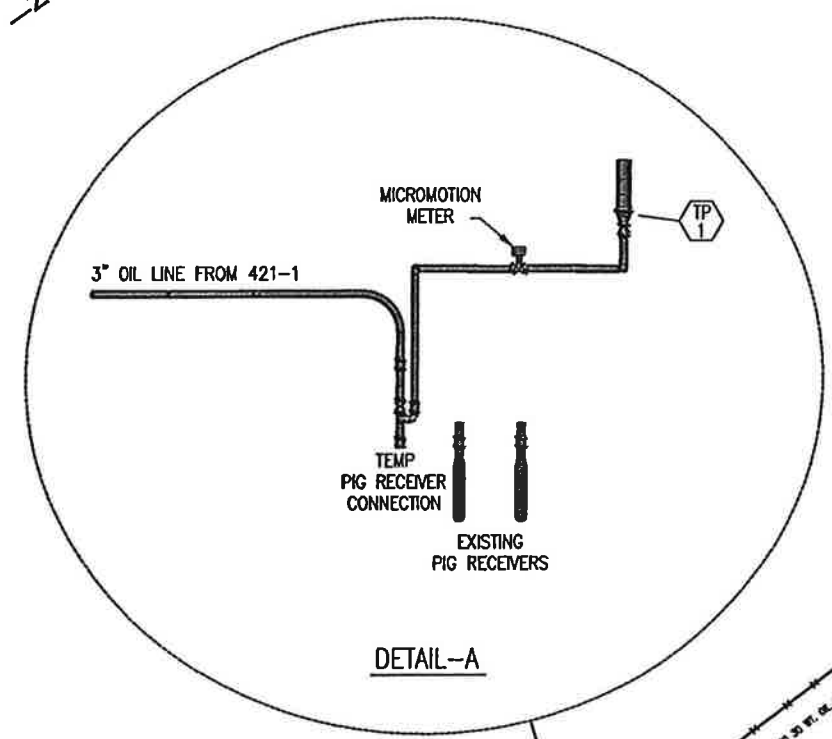
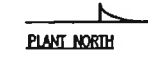


VENOCO INC.
6267 Carpinteria Ave Suite 100
Carpinteria CA. 93013

Rev	Date	Description	By	App'd
11	05/06/13	ADDED 3" OIL LINE FROM 421 LEASE	JT	
11	09/12/12	AS-BUILT SPEC. BRK.	REV	REV
10	11/05/08	ADDED CHECK VALV. @ CHEM. INJ. POINT & REVISED PIG CAT. DRAINS.	REV	REV
9	10/23/07	CHANGE LINE NO FROM 8" DV-101-A TO 8" DV-100-A	REV	REV

ENGINEERING RECORD			
INIT.	DATE	INIT.	DATE
Drawn By	MLL	Date	1-15-89
Revised	3-15-95	Scale	NONE
Project Engr.	G. Barker	Dwg. No.	F-9760-1

11A



NOTES:
1 20.5"=PLANT EL. 100'-0"

CONFIDENTIAL
This drawing is based on limited information & is not to be used other than in the operation & maintenance of the plant for which it was prepared. This drawing is the sole property of Venoco Inc.

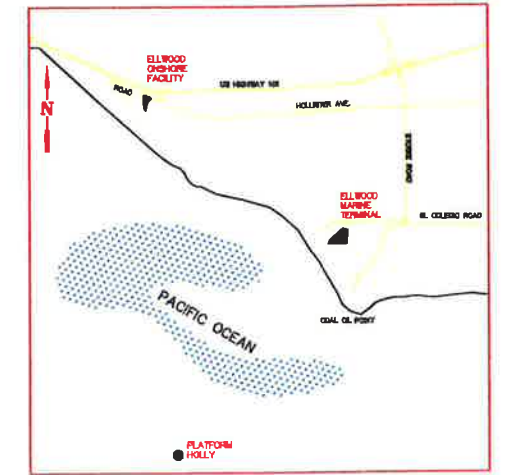
PLOT PLAN
ONSHORE FACILITIES
PLOT PLAN INDEX
SOUTH ELLWOOD FIELD
SANTA BARBARA COUNTY, CALIFORNIA

VENOCO INC.
8207 Carpinteria Ave. Ste 100, Carpinteria, CA. 93018

Mark	Date	Revision	By	App'd
6A	5/06/13	ADDED 3" PIPELINE FROM 421-LEASE	REW	JT
6	11/3/12	REMOVED V-238	REW	REV
5	7/11/06	ADDED 6 TUBES TO GRACE MEMBRANE UNIT	REW	REV
4	02/17/03	AS BUILT & REMOVED V-111, 112, 1803, 1804 & P-1803A	REW	REV

ENGINEERING RECORD					
INT.	DATE	INT.	DATE	Drawn By	Date
✓		✓		M.L. Lacky	8/91
DRAWN		ENGINEER		Revised	Scale 1"=20'-0"
ELEC.		CONST.		Project Engr.	Dwg. No. F-0700
PROJECT ENGINEER	10/17/01	OPERATIONS		Don R. Patterson	

6A



VICINITY MAP
NOT TO SCALE

BEACHFRONT 421 RETURN TO PRODUCTION
OVERALL PLOT PLAN

ISSUED FOR REVIEW
MAY 06, 2013



G-040

DATE NO.	REFERENCE DRAWINGS	REV	DATE	REASON DESCRIPTION	DR.	CHK.
		A	05/03/13	ISSUED FOR REVIEW	REW	JT

	3880 Seawall, Inc. 17120 Buena Vista Street Chatsworth, CA 91311 (714) 881-1011	DATE: 05/13/13 DRAWN BY: GJR CHECKED BY: VENOCO, INC.	VENOCO INC.	SCALE: AS SHOWN DRAWING NUMBER: 2488A-G-040 REV: A
--	--	---	-----------------------	--



NOTES:
1. EXISTING 6" OIL LINE TO BE USED FOR PROPOSED 3" FLOWLINE CONTAINMENT CASING.

ISSUED FOR REVIEW
MAY 06, 2013



G-041

SYNO. NO.	REFERENCE DRAWINGS	REV.	DATE	REASON DESCRIPTION	DR.	CHK.
		A	05/05/13	ISSUED FOR REVIEW	REW	JT

SPEC
17705 Alameda Street
Torrance, CA 90504
(714) 941-8371

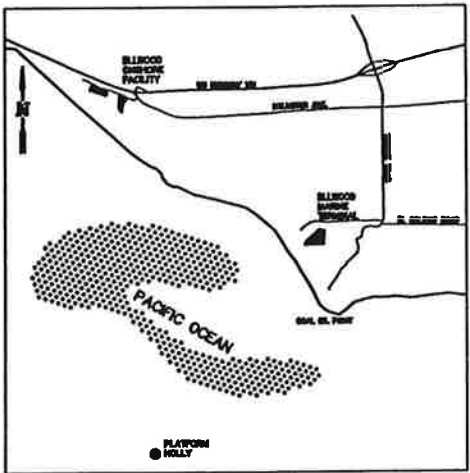
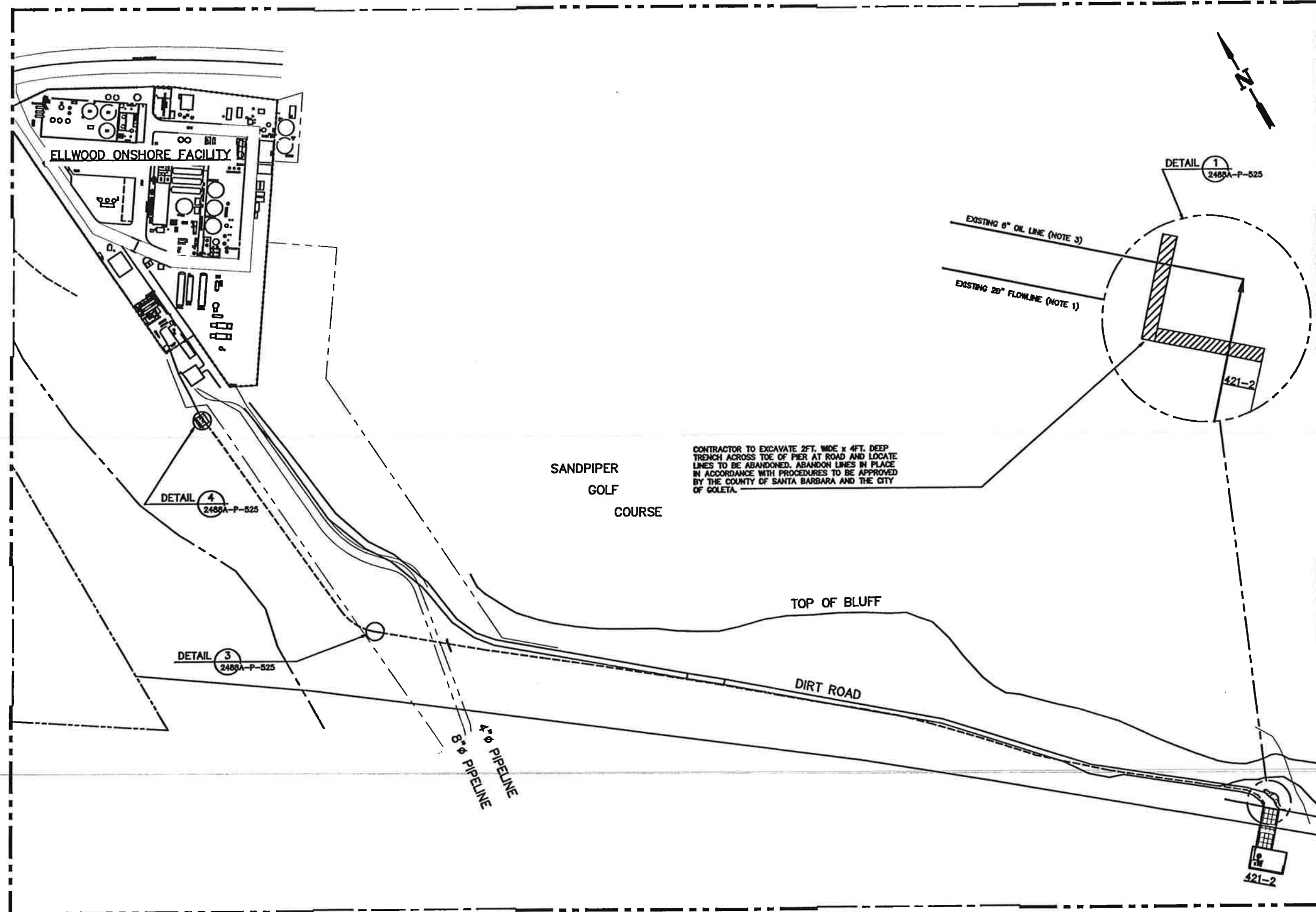
DATE	05/13/14
BY	EW
CHKD	SH
DATE	
BY	DR
CHKD	VENOCO, INC.

VENOCO
INC.

BEACHFRONT 421 RETURN TO PRODUCTION
ELLWOOD ONSHORE FACILITIES
OVERALL PLOT PLAN

SCALE	1"=100'	DRAWING NUMBER	2488A-G-041	REV.	A
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G:2488A_G041:1200



VICINITY MAP
NOT TO SCALE

LEGEND:
 - TO BE DEMOLISHED

NOTES:
 1. EXISTING 28" FLOWLINE TO BE CLEANED AND ABANDONED.
 2. EXISTING 8" OIL LINE TO BE CLEANED AND USED AS CASING FOR 3" NEW PIPELINE BETWEEN PIER 421-2 AND TIE-IN AT EOF OIL HEADER.
 3. EXACT LOCATION OR ROUTING OF LINES NOT KNOWN. CONTRACTOR TO VERIFY & DOCUMENT LOCATION OF LINES.

CONTRACTOR TO EXCAVATE 2FT. WIDE x 4FT. DEEP TRENCH ACROSS TOE OF PIER AT ROAD AND LOCATE LINES TO BE ABANDONED. ABANDON LINES IN PLACE IN ACCORDANCE WITH PROCEDURES TO BE APPROVED BY THE COUNTY OF SANTA BARBARA AND THE CITY OF GOLETA.

ISSUED FOR REVIEW
MAY 06, 2013

1"=100'

G-043

DWG. NO.	REFERENCE DRAWINGS	REV.	DATE	REVISION DESCRIPTION	DR.	CH.
		A	05/05/13	ISSUED FOR REVIEW	REW	JT



SPEC Services, Inc.
17101 Bushard Street
Fountain Valley, CA 92708
(714) 963-8077

© 2488A0043:1200

DATE	BY	CHKD
01-08-02	JJC	
	SLH	
	GKR	

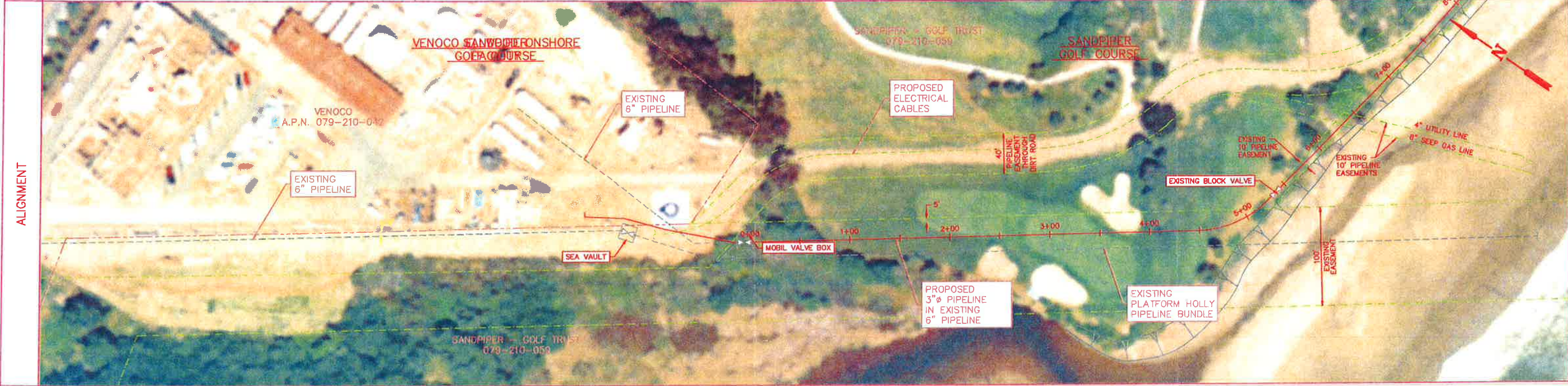


BEACHFRONT 421 RETURN TO PRODUCTION
ELLWOOD ONSHORE FACILITIES
DEMOLITION PLAN

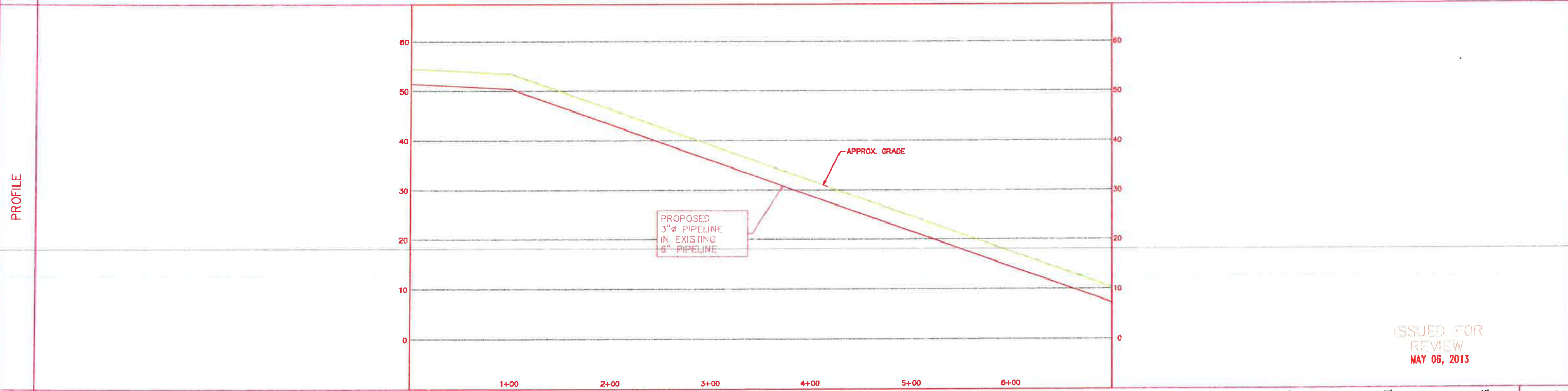
SCALE 1"=100'	DRAWING NUMBER 2488A-G-043	REV. A
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R.O.W. SANDPIPER - GOLF TRUST A.P.N. 079-210-059

ENV.



ALIGNMENT STATIONING



ISSUED FOR REVIEW
MAY 06, 2013

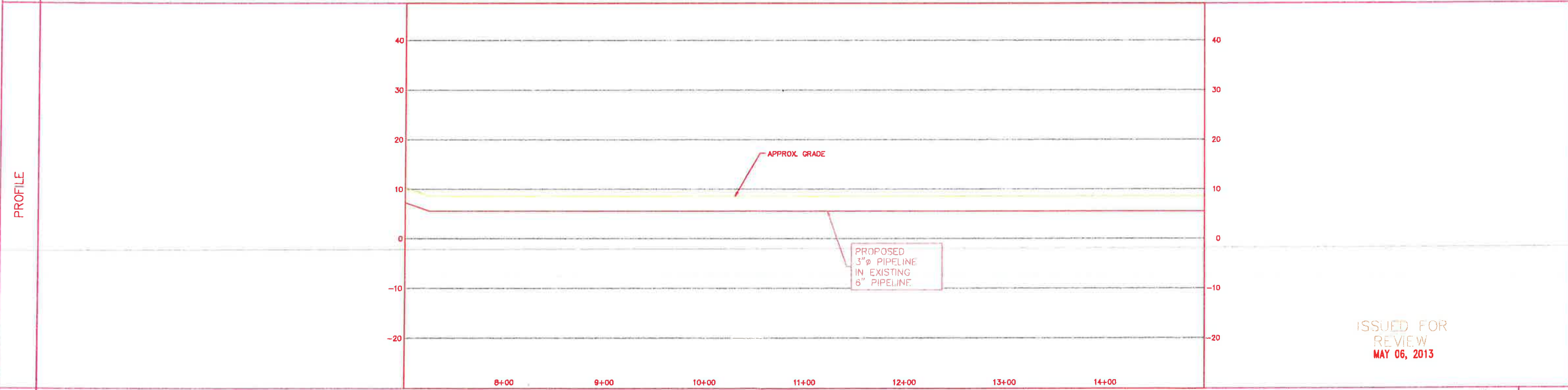
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<table border="1"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> <th>CHK</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>05/06/13</td> <td>ISSUED FOR REVIEW</td> <td>REW</td> <td>JT</td> </tr> </tbody> </table>	REV	DATE	DESCRIPTION	BY	CHK	A	05/06/13	ISSUED FOR REVIEW	REW	JT	<p>VENOCO INC.</p>	<p>BEACHFRONT 421 RETURN TO PRODUCTION ELLWOOD ONSHORE FACILITIES - VENOCO, INC. ALIGNMENT SHEET</p>	<p>SCALE: AS SHOWN</p> <p>DRAWING NUMBER: 2488A-A-101</p> <p>REV: A</p>
REV	DATE	DESCRIPTION	BY	CHK									
A	05/06/13	ISSUED FOR REVIEW	REW	JT									

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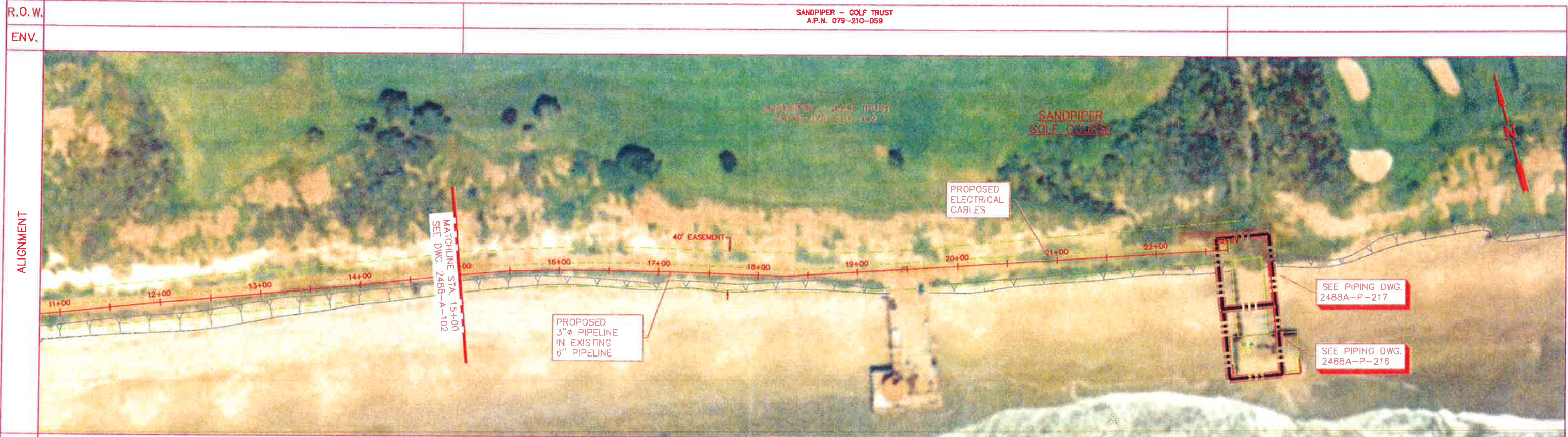
ALIGNMENT

STATIONING

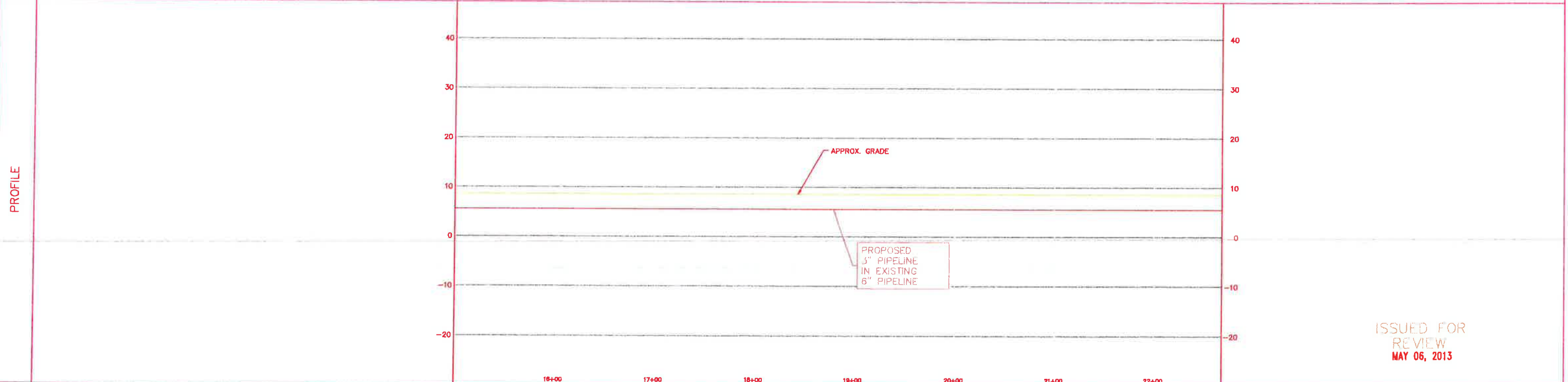


ISSUED FOR REVIEW
MAY 06, 2013

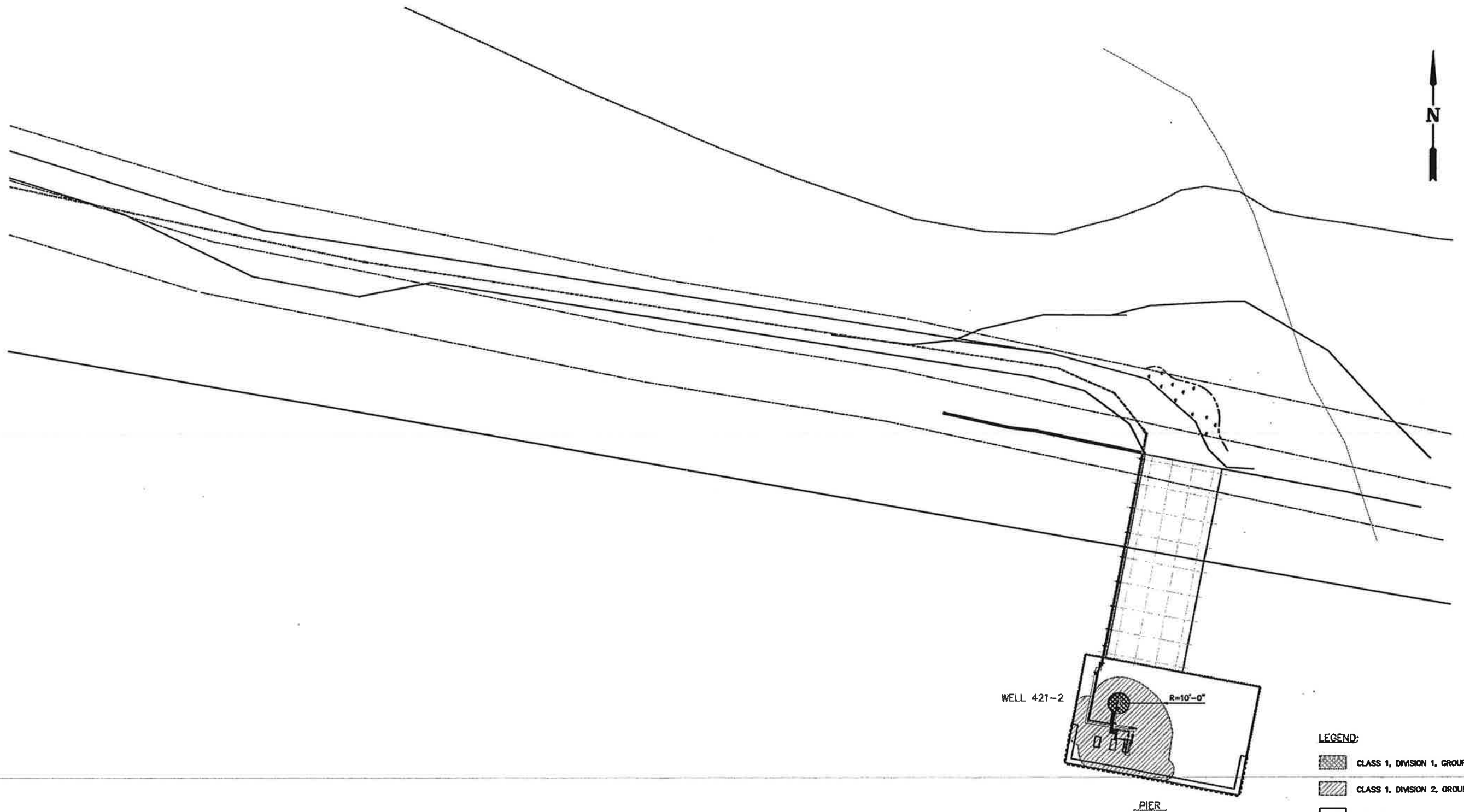
Dwg. No.		REFERENCE DRAWINGS		REV	DATE	REVISION DESCRIPTION	DR	Ch	HORIZ: 1"=100'		VERT: 1"=20'		A-102
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				SCALE AS SHOWN				DRAWING NUMBER 2488A-A-102		REV A			






STATIONING



DWG. NO.		REFERENCE DRAWINGS		REV.	DATE	REVISION DESCRIPTION	DR	CHK	HORIZ: 1"=100'		VERT: 1"=20'		A-103
				A	05/06/13	ISSUED FOR REVIEW	REW	JT	100' 0' 100' 200'		20' 0' 20' 40'		
				SPEC SERVICES, INC. 13700 Bluebonnet Valley Countryside Way, CA 94018 (714) 963-1011		VENOCO INC.		VENOCO PETROLEUM		DATE: 05/04/13		VENOCO INC.	
				K: \2488\ALIGN\2488A103.50		VENOCO INC.		VENOCO PETROLEUM		SCALE: AS SHOWN		DRAWING NUMBER: 2488A-A-103	
												BEACHFRONT 421 RETURN TO PRODUCTION ELLWOOD ONSHORE FACILITIES - VENOCO, INC. ALIGNMENT SHEET	
												REV: A	



- LEGEND:**
-  CLASS 1, DIVISION 1, GROUP D
 -  CLASS 1, DIVISION 2, GROUP D
 -  UNCLASSIFIED AREA

ISSUED FOR
REVIEW
MAY 06, 2013



E-912

DWG. NO.	REFERENCE DRAWINGS	REV.	DATE	REVISION DESCRIPTION	DR.	CH.
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SPEC Services, Inc.
17101 Bushard Street
Fountain Valley, CA 92708
(714) 963-8077

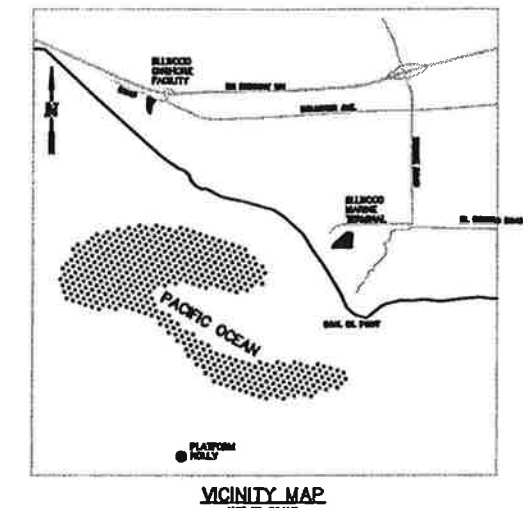
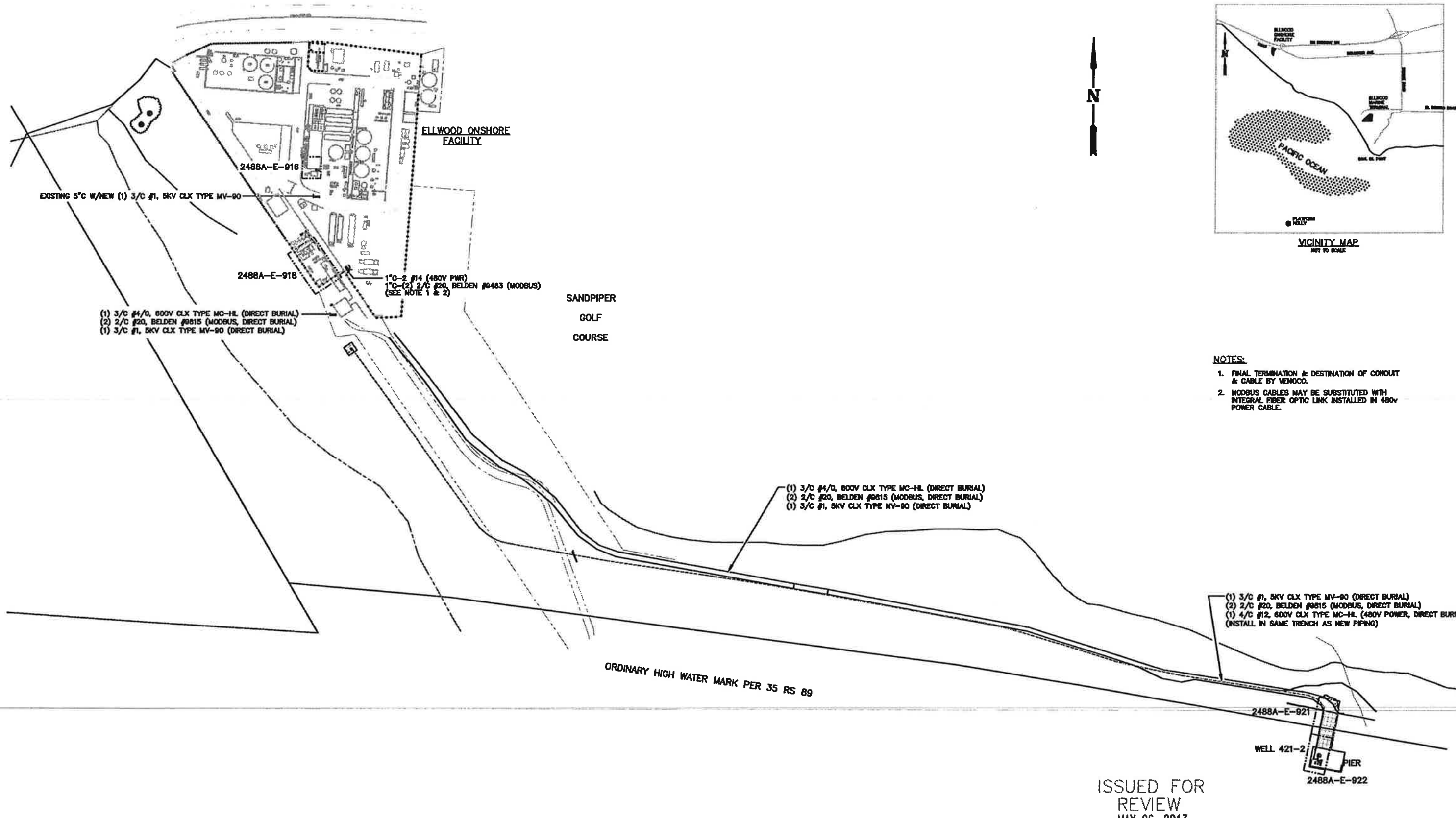
± 2488AE912:240

DESIGN	JJV	DATE	05/14/04
DESIGNED	JR		
CHECKED	SLH		
ENGINEER	-		
MANAGER	GKR		
CLIENT	VENOCO, INC.		



BEACHFRONT 421 RETURN TO PRODUCTION
ELLWOOD ONSHORE FACILITIES
ELECTRICAL AREA CLASSIFICATION PLAN

SCALE	DRAWING NUMBER	REV.
1"=20'	2488A-E-912	A



- NOTES:**
1. FINAL TERMINATION & DESTINATION OF CONDUIT & CABLE BY VENOCO.
 2. MODBUS CABLES MAY BE SUBSTITUTED WITH INTEGRAL FIBER OPTIC LINK INSTALLED IN 480V POWER CABLE.

(1) 3/C #4/0, 800V CLX TYPE MC-HL (DIRECT BURIAL)
 (2) 2/C #20, BELDEN #9815 (MODBUS, DIRECT BURIAL)
 (1) 3/C #1, 5KV CLX TYPE MV-90 (DIRECT BURIAL)

1"C-2 #14 (480V PWR)
 1"C-2 #20, BELDEN #9483 (MODBUS)
 (SEE NOTE 1 & 2)

(1) 3/C #4/0, 800V CLX TYPE MC-HL (DIRECT BURIAL)
 (2) 2/C #20, BELDEN #9815 (MODBUS, DIRECT BURIAL)
 (1) 3/C #1, 5KV CLX TYPE MV-90 (DIRECT BURIAL)

(1) 3/C #1, 5KV CLX TYPE MV-90 (DIRECT BURIAL)
 (2) 2/C #20, BELDEN #9815 (MODBUS, DIRECT BURIAL)
 (1) 4/C #12, 800V CLX TYPE MC-HL (480V POWER, DIRECT BURIAL)
 (INSTALL IN SAME TRENCH AS NEW PIPING)

ORDINARY HIGH WATER MARK PER 35 RS 89

ISSUED FOR REVIEW
 MAY 06, 2013



E-915

DWG. NO.	REFERENCE DRAWINGS	REV.	DATE	REVISION DESCRIPTION	DR.	CH.
		A	05/08/13	ISSUED FOR REVIEW	REW	JT

SPEC SERVICES
 SPEC Services, Inc.
 17101 Bushard Street
 Fountain Valley, CA 92708
 (714) 963-8077

DATE	JW	DATE	05/14/14
DESIGN	SLH		
DRAWN	GKR		
CHECK	VENOCO, INC.		



BEACHFRONT 421 RETURN TO PRODUCTION ELLWOOD ONSHORE FACILITIES ELECTRICAL PLOT PLAN & DRAWING INDEX		
SCALE	DRAWING NUMBER	REV.
1"=100'	2488A-E-915	A

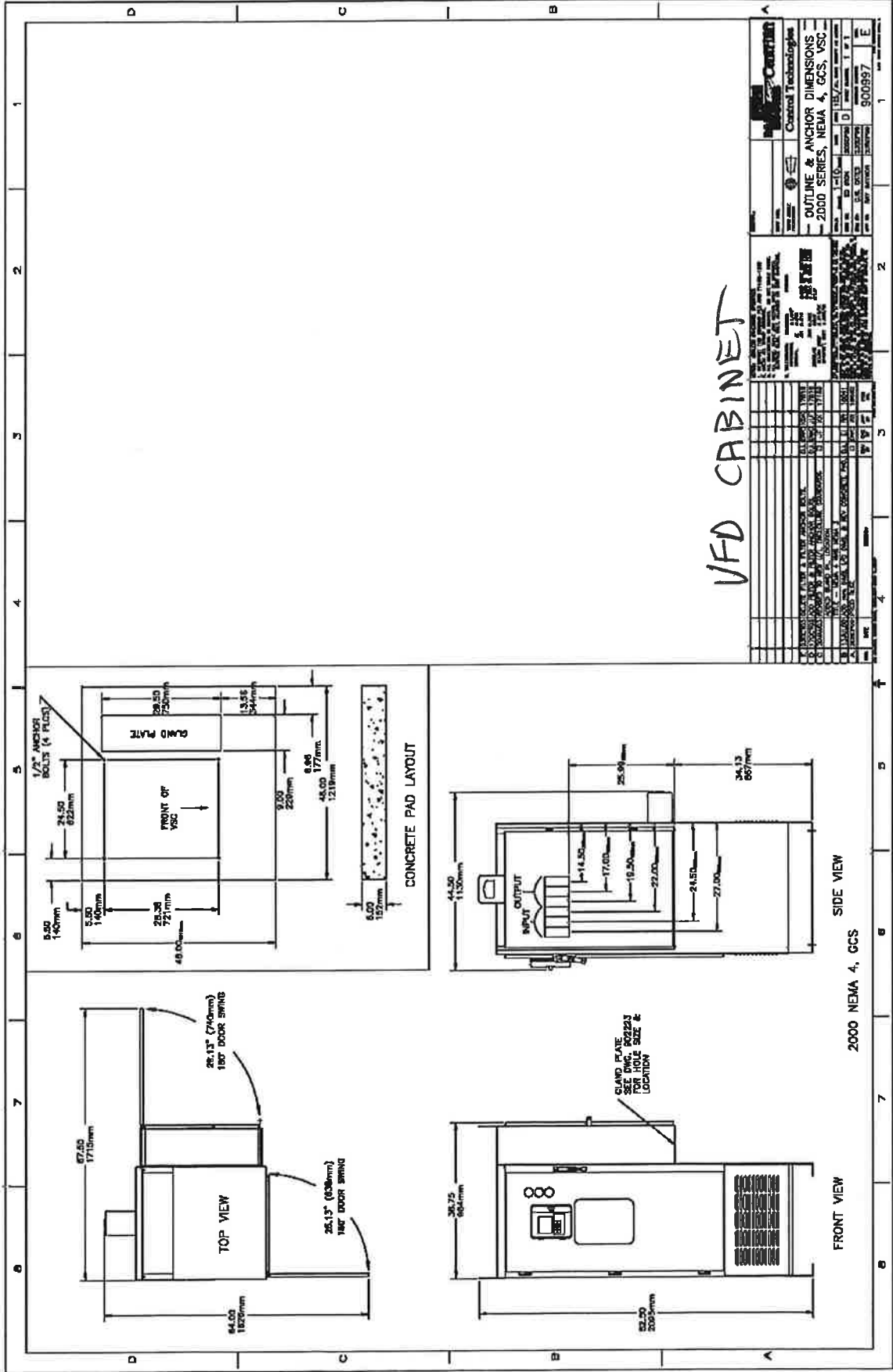
J2488AED91E1200

MODEL NUMBER: 2000 GCS (NEMA 4)

Weight: 1020 lbs Overall Height: 82.5 in.

Overall Width: 38.75 in.

Overall Depth: 44.50 in.



ITEM NO.	DESCRIPTION
1	PRIMARY BUSHINGS
2	SECONDARY BUSHINGS
3	TAP CHANGER
4	NAME PLATE
5	PRESSURE RELIEF DEVICE
6	FILL PLUG
7	DRAIN PLUG
8	GROUNDING PROVISION
9	LIFTING PROVISIONS
10	CHANNEL BASE
11	COOLING PANELS

APPROX. TOTAL WEIGHT 4160 LBS.

Rev.2: 10/18/01
Rev.1: 6/08/01

DRAWING NO: 00000401

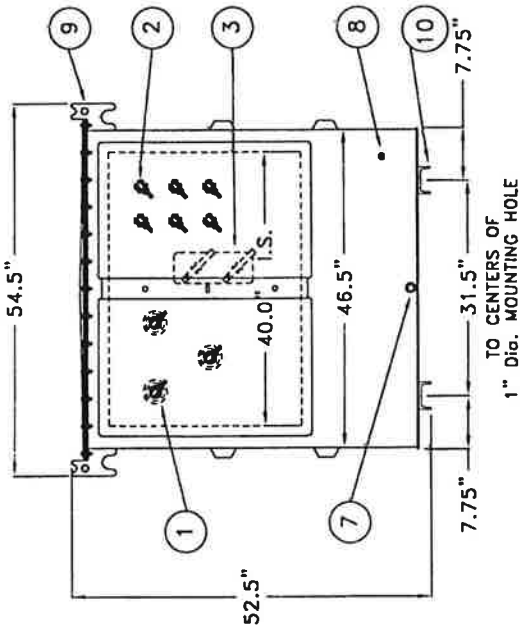
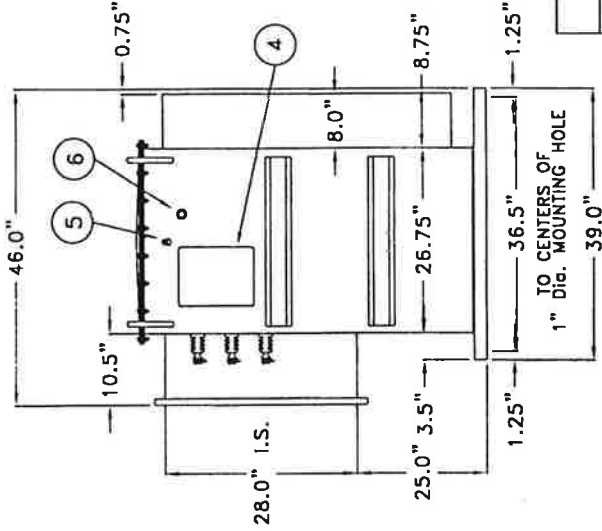
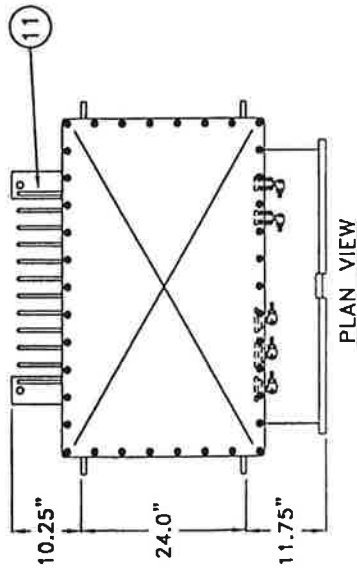
260 kVA

STEP UP TRANSFORMER

DRAWN BY: G. PHILLIPS 9/20/99

SCALE: NONE

SOUTHWEST ELECTRIC



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Appendix H

MITIGATION MEASURES FROM LINE 96 MODIFICATION PROJECT ENVIRONMENTAL IMPACT REPORT

Mitigation Measures from the Approved Line 96 Modification Project Environmental Impact Report Related to Operation of the Pipeline to Las Flores Canyon

CR-1a. Archeological Monitoring: All ground disturbances associated with construction of the proposed Project at the EOF that extend into soils shall be monitored by a qualified archaeologist and a local Native American representative as per the Goleta General Plan OS 8.6 and OS 8.7. If cultural resources of potential importance are uncovered during construction, the grading shall cease and the City shall be notified within 24 hours. A qualified archaeologist shall prepare a report assessing the significance of the find and provide recommendations regarding appropriate disposition. Disposition will be determined by the City in conjunction with the affected Native American nation.

CR-1b. Pre-construction Workshop: A pre-construction workshop shall be conducted by a qualified archaeologist and a Native American representative from the affected Native American Nation. All construction personnel who would work, during any phase of ground disturbance, shall be required to attend the workshop. To ensure participation in the workshop, attendance records will be monitored for all personnel who attend the workshop. Additionally, upon completion of the workshop, hardhat stickers will be issued to denote the completion of workshop training. The workshop shall:

1. Review the types of archaeological artifacts that may be uncovered;
2. Provide examples of common archaeological artifacts to examine;

EO-4c. Seismic Inspection. The operator shall cease pipeline operations and inspect all project related pipelines and storage tanks following any seismic event in the County that exceeds a ground acceleration of 13 percent of gravity (0.13 g). The operator shall report the findings of such inspection to the City of Goleta and the County. The operator shall not reinstate operations of the pipeline within the City of Goleta until authorized by the City of Goleta. The operator shall not reinstate operations of the pipelines and associated operations within the unincorporated areas of the County until authorized by the County.

HM-3. Automated Block Valves and an Additional Check Valve on the Proposed Pipeline. The Applicant shall ensure that all block valves on the pipeline are remotely actuated from a central location, including the block valves at the EOF and PPLP tie-in, and that remotely actuated valves and check valves are located around Tecolote Creek, Eagle Canyon, Dos Pueblos Canyon, Llagas Canyon and Corral Canyon, and that a check valve is located immediately west of Bell Creek.

BIO-4a. Update the OSCP to Protect Sensitive Resources. The OSCP shall be revised and updated for the City and a new plan prepared for the County to address protection of sensitive biological resources and revegetation of any areas disturbed during an oil spill from the proposed pipeline or cleanup activities. The revised EAP and OSCP shall, at a minimum, include:

1. Specific measures to avoid impacts on Federal and State-listed endangered and threatened species and any Federal, State, or City designated environmentally sensitive habitat areas (ESHAs) during response and cleanup operations. Where feasible, low-impact, site-specific techniques such as hand-cutting contaminated vegetation and using

low-pressure water flushing from vessels to remove spilled material from particularly sensitive wildlife habitats, such as coastal estuaries, i.e., Devereux Slough, because procedures such as shoveling, bulldozing, raking, and drag-lining can cause more damage to a sensitive habitat than the oil spill itself. The OSCP shall also evaluate the non-cleanup option for ecologically vulnerable habitats such as coastal estuaries.

2. Specific measures requiring spill response personnel to be adequately trained for response in terrestrial environments and spill containment and recovery equipment to be maintained in full readiness. Inspection of equipment and periodic drills shall be conducted at least annually and the results evaluated so that spill response personnel are familiar with the equipment and with the project area including sensitive biological resources.

3. When habitat disturbance cannot be avoided, stipulations for development and implementation of site-specific habitat restoration plans and other site-specific and species-specific measures appropriate for mitigating impacts on local populations of sensitive wildlife species and to restore native plant and animal communities to pre-spill conditions. Access and egress points, staging areas, and material stockpile areas that avoid sensitive habitat areas shall be identified. The OSCP shall include species- and site-specific procedures for collection, transportation and treatment of oiled wildlife, particularly for sensitive species.

4. Similar to MM BIO-2b, procedures for timely reestablishment of vegetation that replicates the habitats disturbed (or, in the case of disturbed habitats dominated by non-native species, replaces them with suitable native species) including: measures preventing invasion and/or spread of invasive or undesired plant species; restoration of wildlife habitat; restoration of native communities and native plant species propagated from local genetic sources including any sensitive plant species (such as the southern tarplant); and replacement of trees at the appropriate rate in accordance with any agency's with jurisdiction, applicable requirements (i.e. the City's General Plan).

5. Monitoring procedures and minimum success criteria to be satisfied for restoration areas. The success criteria shall consider the level of disturbance and condition of the adjacent habitats. Monitoring shall continue for 3 to 5 years, depending on habitat, or until success criteria are met. Appropriate remedial measures, such as replanting, erosion control or control of invasive plant species, shall be identified and implemented if it is determined that success criteria are not being met.

A -2. Restoration after a Pipeline Leak Spill. All areas contaminated as a result of an oil leak or spill shall be restored to their prior state with equivalent soils and agricultural resources.

Appendix I

IMPACTS AND MITIGATION MEASURES FROM LINE 96 MODIFICATION PROJECT FINAL ENVIRONMENTAL IMPACT REPORT

Referenced Impacts and Mitigation Measures from the Ellwood Pipeline Company Line 96 Modification Project Final Environmental Impact Report

This appendix identifies the impacts and mitigation measures from the 2011 Ellwood Pipeline Company Line 96 Modification Project Final Environmental Impact Report (Line 96 EIR) that relate to construction and operation of a new pipeline from the Ellwood Onshore Facility (EOF) to Las Flores Canyon (LFC). The following impacts and related mitigation measures (MM) are referenced in this Recirculated Draft Environmental Impact Report for the Revised PRC 421 Recommissioning Project (Project).

Under CEQA Guidelines Section 15150, an EIR may incorporate by reference other publicly available documents, including language from relevant EIRs that have previously been reviewed through the state review system, such as the Line 96 EIR under SCH#2009111034. The Line 96 EIR is available on the County of Santa Barbara's website at <http://www.sbcountyplanning.org/energy/projects/VenocoLine96.asp>. This appendix summarizes the language from the Line 96 EIR that is referenced and incorporated by Section 5.0, Alternatives Analysis, within the impact assessment for the Processing PRC 421 Oil at Las Flores Canyon alternative to the Project (Section 5.3.4).

The Line 96 EIR does not include a Safety section, but issues related to Safety are addressed under Hazards and Hazardous Materials. Impacts and mitigation measures from the Line 96 EIR are summarized for the resource areas listed below:

Geological Resources

Impact GEO-1: Slope Failures. Ground-disturbing pipeline construction, pipeline replacement activities, existing pipeline abandonment activities, and/or oil spill remediation may cause localized sloughing of unconsolidated alluvial sands and artificial fill (Less than Significant, Class III).

Impact GEO-2: Erosion of Drainages. Ground-disturbing pipeline construction, pipeline replacement activities, existing pipeline abandonment activities, and/or oil spill remediation could result in increased erosion and sedimentation of local drainages (Potentially Significant, Class II).

- **MM GEO-2: Erosion Control Measures.** Best Management Practices (BMPs) such as temporary berms and sedimentation traps, including silt fencing, straw bales, and sand bags, shall be installed prior to work involving ground

disturbance. The BMPs shall include maintenance and inspection of the berms and sedimentation traps during rainy and non-rain periods, as well as re-vegetation of impacted areas. Re-vegetation shall address plant type, as well as monitoring to ensure appropriate covering of exposed areas.

Impact GEO-3: Expansive Soils. Expansive soils along the proposed pipeline route could potentially affect the structural integrity of the pipeline (Potentially Significant, Class II).

- **MM GEO-3: Expansive Soil Control Measures.** Prior to pipeline construction, a geotechnical investigation shall be completed along the proposed pipeline alignment to determine the expansion potential of soils, to the depth of proposed excavations. The geotechnical investigation and associated recommendations shall be prepared by a licensed geotechnical engineer, subject to review and approval by the Santa Barbara County Building and Safety Department and City of Goleta for their respective jurisdictions, to verify that soil expansion remedial measures comply with the existing geologic setting and current CBC construction standards. Based on the results of the investigation, standard engineering construction-related soil expansion measures, such as pipeline trench backfilling with sandy, non-expansive soils, or a mixture of expansive material with non-expansive material, shall be implemented in the Project design as needed to minimize impacts associated with potentially expansive soils.

Impact GEO-4: Faulting and Seismicity. Seismic activity along the More Ranch Fault Zone or other regional faults could produce fault rupture, seismic ground shaking, liquefaction, or other seismically induced ground failure that would expose people and structures to greater than normal risk (Potentially Significant, Class II).

- **MM GEO-4a: Implementation of Site-Specific Geotechnical and Seismic Studies Results.** The Applicant shall complete a site-specific geotechnical and seismic-hazard studies for the proposed pipelines routes including faulting, ground shaking, liquefaction hazards, landslides and slope stability issues. The Applicant shall submit certified copies of these reports to Santa Barbara County Building and Safety Division, City of Goleta, and SSRRC for review and approval. The Applicant shall implement all recommendations from the Geotechnical and Seismic studies as directed by Santa Barbara County Building and Safety Division and SSRRC for their respective jurisdictions.

- **MM GEO-4b: Seismic Resistant Design.** The Applicant shall perform seismic evaluation and design of the proposed pipelines and employ current industry seismic design guidelines including but not limited to: (a) “Guidelines for the Design of Buried Steel Pipe,” 2001, by American Lifeline Alliance and (b) “Guidelines for the Seismic Design and “Assessment of Natural Gas and Liquid Hydrocarbon Pipelines,” 2004, by PRCI for seismic resistant design of the pipeline.
- In addition, all engineered structures, including pipeline alignment and profile drawings, buildings, other structures, other appurtenances and associated facilities, shall be designed, signed, and stamped by California registered professionals certified to perform such activities in their jurisdiction such as Civil, Structural, Geotechnical, Electrical and Mechanical Engineering.
- **MM GEO-4c: Seismic Inspection.** The operator shall cease pipeline operations and inspect all project-related pipelines and storage tanks following any seismic event in the County that exceeds a ground acceleration of 13 percent of gravity (0.13 g). The operator shall report the findings of such inspection to the City of Goleta and the County. The operator shall not reinstate operations of the pipeline within the City of Goleta until authorized by the City of Goleta. The operator shall not reinstate operations of the pipelines and associated operations within the unincorporated areas of the County until authorized by the County.

Hazards and Hazardous Materials

Impact HM-3: Spill Impacts to the Environment from Pipeline Transportation of Crude Oil to Markets/Refineries. A failure of the proposed pipeline could result in oil spills to the environment (Significant, Class I).

MM HM-3: Automated Block Valves and an Additional Check Valve on the Proposed Pipeline.¹ The Applicant shall ensure that all block valves on the pipeline are remotely actuated from a central location, including the block valves at the EOF and PPLP tie-in, and that remotely actuated block valves and check valves are located around Tecolote Creek, Eagle Canyon, Dos Pueblos Canyon,

¹ NOTE: While the application of MMs such as MM HM-3 (Automated Block Valves/ Additional Check Valves) from the Line 96 EIR would reduce the severity of such an impact, potential impacts from a spill would remain significant and unavoidable for EOF to LFC pipeline alternative.

Llagas Canyon and Corral Canyon, and that a check valve is located immediately west of Bell Creek.

Air Quality

Impact AQ-1: Emissions from Construction. Proposed Project construction and pipeline abandonment activities would result in emissions at the EOF and along the existing and new pipeline corridors (Less Than Significant, Class III).

MM AQ-1a: Measures to Reduce Dust Emissions From Construction. Best Available Control Measures (BACMs) shall be implemented to control PM₁₀ generation during construction of the Project, including the following:

- During construction, water trucks or sprinkler systems should be used to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this should include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency shall be required whenever the wind speed exceeds 15 mph. Reclaimed water shall be used;
- Minimize the amount of disturbed area and reduce onsite vehicle speeds to 15 mph or less;
- Gravel pads shall be installed at all access points to prevent tracking of mud on to public roads;
- If importation, exportation, and stockpiling of fill material are involved, soil stockpiled for more than two days shall be covered, kept moist or treated with soil binders to prevent dust generation. Trucks transporting fill material to and from the Project site shall be covered with a tarp from the point of origin;
- After clearing, grading, earthmoving, or excavation is completed, the disturbed area shall be treated by watering, re-vegetating, or spreading of soil binders, until the area is paved or otherwise developed so that dust generation will not occur;
- The contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off site. Their duties shall include holiday and

weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the SBCAPCD prior to land use clearance for any grading activities for the Project; and

- Prior to any land clearance, the Applicant shall include, as a note on a separate informational sheet to be recorded using a map, these dust control requirements. All requirements shall be shown on grading and building plans.
- **MM AQ-1b: Measures to Reduce NO_x Emissions From Construction.**
The following measures shall be implemented to reduce diesel emissions:
 - Diesel construction equipment meeting the California Air Resources Board (CAR B) Tier 1 emission standards for off-road heavy-duty diesel engines shall be used. Equipment meeting CARB Tier 2 or higher emission standards should be used to the maximum extent feasible.
 - Diesel powered equipment should be replaced by electric equipment whenever feasible.
 - If feasible, diesel construction equipment shall be equipped with selective catalytic reduction systems, diesel oxidation catalysts and diesel particulate filters as certified and/or verified by EPA or California.
 - Construction equipment shall be maintained per the manufacturers' specifications.
 - Catalytic converters shall be installed on gasoline-powered equipment, if feasible.
 - The engine size of construction equipment shall be the minimum practical size.
 - The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time.
 - Construction worker trips should be minimized by requiring carpooling and by providing for lunch onsite.

Hydrology, Water Resources, and Water Quality

Impact WQ-2: Potential Construction and Abandonment Impacts to Nearby Onshore Waterways. Pipeline construction and abandonment activities could degrade surface and groundwater quality (Potentially Significant, Class II).

MM WQ-2a: Implement a Construction-Related Storm Water Pollution Prevention Program. A Project-specific Storm Water Pollution Prevention Plan shall be prepared and submitted to the California Regional Water Quality Control Board, Central Coast Region, to prevent adverse impacts to nearby waterways associated with construction, demolition, and remediation-related erosion and sedimentation, and incidental spills not covered under the existing Oil Spill Contingency Plan or National Pollutant Discharge Elimination System permit. This plan shall include, but not be limited to, a description of Best Management Practices, including erosion and sedimentation prevention measures, spill prevention measures, spill containment equipment, and monitoring requirements to be instituted during any and all construction, demolition, and remediation operations. General permit requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litters, etc., and sanitary waste at a construction site are to be observed. The plan shall also be submitted to the City and County for review and comment. In the presence of respective city and county representatives, the applicant shall review the SWPPPs with appropriate contractor personnel.

Impact WQ-3: Horizontal Directional Drilling Impacts to Nearby Onshore Waterways. Horizontal directional drilling-related frack-outs during pipeline construction could degrade surface and groundwater quality (Potentially Significant, Class II).

MM WQ-3a: Perform Geotechnical Investigation prior to HDD drilling. A site-specific, geotechnical investigation shall be completed in areas proposed for horizontal directional drilling. Preliminary geotechnical borings shall be drilled to verify that the proposed depth of horizontal directional drilling is appropriate to avoid frack-outs (i.e., the depth of finest grained sediments and least fractures) and to determine appropriate horizontal directional drilling methods (i.e., appropriate drilling mud mixtures for specific types of sediments). The investigation shall include results from at least three borings, a geologic cross section, a discussion of drilling conditions and a history and recommendations to prevent frack-outs.

MM WQ-3b: Frack-Out Contingency Plan. A frack-out contingency plan shall be completed and include measures for training, monitoring, worst case scenario evaluation, equipment and materials, agency notification and prevention, containment, clean up, and disposal of released drilling muds. Preventative measures would include incorporation of the recommendations of the geotechnical investigation to determine the most appropriate HDD depth and drilling mud mixture. In addition, drilling pressures shall be closely monitored so that they do not exceed those needed to penetrate the formation. Monitoring by a minimum of two monitors (located both upstream and downstream) shall occur throughout drilling operations to ensure swift response in the event of a frack-out, while containment shall be accomplished through construction of temporary berms/dikes and use of silt fences, straw bales, absorbent pads, straw wattles, and plastic sheeting. Clean up shall be accomplished with plastic pails, shovels, portable pumps, and vacuum trucks. Frack-out contingency plan shall be submitted to the City and County for their respective jurisdictions.

Impact WQ-4: Potential Facilities Leaks and Impacts to Nearby Onshore and Offshore Waterways. A rupture or leak from the proposed oil pipeline could substantially degrade surface and groundwater quality (Significant, Class I).

MM WQ-4a: Implementation of an Operational Storm Water Pollution Prevention Plan. An updated, Project-specific, operations-related SWPPP shall be prepared and submitted to the Central Coast RWQCB to prevent adverse impacts to nearby waterways associated with oil spills. The plan will include the onshore portion of the existing pipelines from Platform Holly to the Ellwood Onshore Facility, the Ellwood Onshore Facility, and the proposed pipeline to Corral/LFC. The plan will include preventative and spill contingency measures not covered under the Emergency Action Plan, which only applies to “significant events” and is not discussed in detail by the Oil Spill Contingency Plan. This plan would include, but not be limited to delineation of drainage features and a description of Best Management Practices, including spill containment equipment and procedures that are tailored for the Project site.

MM WQ-4b: Non-Point Source Water Quality Testing. The SWPPP described in MM WQ-4a shall include non-point source runoff water quality goals, established in accordance with the water quality objectives contained in the Water Quality Control Plan for the Central Coast, as well as the water quality criteria in the Proposed California Toxics Rule. Sampling and analysis of non-

point source runoff shall be completed downslope of oil spills, subsequent to significant rain events, to demonstrate the completeness of spill containment and remediation. The sampling protocol and analytical results shall be reviewed and approved by the California RWQCB, Central Coast Region.

Biological Resources

Impact BIO-2: Construction Impacts on Sensitive Onshore Biological Species.

Pipeline construction and existing Line 96 abandonment activities have the potential to affect populations of threatened, endangered or candidate species or their habitat, and could result in a “take” of a special status species (Potentially Significant, Class II).

MM BIO-2a:² Prior to construction, prepare and implement separate County and City-approved Native Habitat and Special Status Species Protection Plans to avoid or reduce impacts to sensitive biological resources, including drainages and wetlands, during pipeline construction. Protection measures shall include, at a minimum:

- Pre-construction surveys shall be conducted within 30 days of the start of construction by a County- and City-biologists for their respective jurisdictions to determine the presence of any sensitive species and habitats. This mitigation measure is not a requirement for exhaustive species-specific protocol surveys, but an effort to determine presence/absence for the purpose of implementing measures to avoid and minimize impacts in accordance with Species Protection Plan and any agency take authorization requirements.
- County- and City-biologists for the respective portions of the project that will be present daily during construction (including during borings under drainages and wetlands) in locations known to support sensitive species, including California red-legged frogs and tidewater gobies, and to monitor for these species. The biologist will be authorized to stop work if threats to any sensitive species are identified during monitoring.
- Construction shall be scheduled to avoid the breeding seasons of special status species that are found to be present in the construction area. For example, schedule pipeline construction (or at a minimum, crossing of

² NOTE: Although the Line 96 EIR found that these measures would fully mitigate impacts, lessons learned (i.e., frack-outs and spills) during Line 96 construction indicates that the potential for significant impacts would remain in LFC alternative.

drainages that support special status species) to avoid the breeding seasons for California red-legged frog (November 1 through May 30).

- Work shall be scheduled to avoid the high flow seasons (typically December through March) if trenching is used to cross seasonal or intermittent drainages to avoid potential impacts to downstream resources, including breeding habitat for the tidewater goby and the California red-legged frog.
- The Project biologist and the Project engineer shall clearly designate “sensitive resource zones” on the Project maps, construction plans, and at the construction site, consistent with the results of pre-construction surveys conducted for the presence of sensitive species. Sensitive resource zones are defined as areas where construction would be limited to a 15- to 30-foot corridor, depending on the particular construction requirements, to avoid impacts to special status biological resources. Similarly, staging areas would not be placed in areas where sensitive resources are present.
- Prior to construction, County- and City-biologists for the respective portions of the project conduct California red-legged frog surveys in all suitable habitat crossed by the pipeline right-of-way to determine the potential presence of this species within the immediate construction area and construction staging areas.
- All machinery shall be stored and fueled in designated locations at least 100 feet (30.5 m) away from any sensitive habitats. Heavy equipment and construction activities shall be restricted to the defined construction right-of-way. Vehicles and personnel shall use existing access roads to the maximum degree feasible.
- Disposal or temporary placement of excess fill shall be prohibited within 50 feet (15.2 m) from the top of the banks for all drainages and other areas known to support special status species (such as the beach in the vicinity of the EMT). All equipment used in or near drainages shall be clean and free of leaks and/or grease. Emergency provisions shall be in place prior to the onset of construction to deal with accidental spills from construction activities or equipment.
- All trash receptacles on site shall be designed with secure lids (wildlife proof) to contain food, wrappers, and other miscellaneous trash.

- No pets shall be permitted on site.
- No hunting shall be authorized during construction. All excavated areas shall be secure at the end of the work day to ensure that animals do not fall into excavated areas, and/or that they can extricate themselves in the event that they do fall in. Project biologists shall inspect excavated areas daily prior to the start of work to remove any trapped animals.
- All personnel shall undergo training from the project biologist regarding onsite sensitive resources, and proper protocols and notification in the event that they encounter sensitive resources not previously documented.

MM BIO-2b:³ Prepare and implement separate County- and City-approved Native Habitat Restoration Plans that shall include, at a minimum:

- Pre-construction surveys for sensitive plant species conducted by a County and botanists. Following the CDFG's Guidelines for Assessing Impacts to Rare Plants and Rare Plant Communities, species-specific surveys shall be conducted which shall document any rare plants or rare natural communities in the area. Surveys shall document species in all areas that would require the direct removal of vegetation. The results of the surveys shall include recommended buffer areas between construction activities and sensitive plant habitat.
- Procedures for timely re-establishment of vegetation that replicates the habitats disturbed (or, in the case of disturbed habitats dominated by non-native species, replaces them with suitable native species) including: measures preventing invasion and/or spread of invasive or undesired plant species; restoration of wildlife habitat, including habitat that supports special status species; and restoration of native communities and native plant species propagated from local genetic sources.
- A plant palette consisting entirely of native species.
- Measures to salvage (plants, cuttings or seed) and replace sensitive plants, and the replanting of native vegetation with special emphasis on species

³ NOTE: Although the Line 96 EIR found that these measures would fully mitigate impacts, lessons learned (i.e., frack-outs and spills) during Line 96 construction indicates that the potential for significant impacts would remain in LFC alternative.

documented in the pre-construction surveys (such as Santa Barbara honeysuckle), shall be incorporated.

- All plantings shall have a minimum of 80 percent survival, by species, and shall attain 75 percent cover of baseline after 3 years and 90 percent cover of baseline after 5 years for the life of the project. No woody invasive species shall be present, and herbaceous invasive species shall not exceed 5 percent cover.
- Mature coast live oak trees (≥ 8 inch DBH) that require removal will be replaced at a ratio of 10:1. Oaks should be spaced a minimum of 20 feet apart.
- All planting shall be done after the first rains of the winter season (generally October 1 - February 1) to take advantage of the availability of water, dormancy of foliage, and rooting period to ensure optimum survival.
- Irrigation shall be provided when natural moisture conditions are inadequate to ensure survival of plants. Irrigation shall be provided, if needed, for a period of at least two years from planting, and shall be phased out during the fall/winter of the second year unless conditions dictate otherwise.
- Monitoring shall continue for three to five years, depending on habitat, or until success criteria are met. Plants must survive and grow without supplemental irrigation for a minimum of two years to be considered successful. Appropriate remedial measures, such as replanting, erosion control or control of invasive plant species, shall be identified and implemented if it is determined that the success criteria are not being met.
- Provisions shall be made for a Project biologist specializing in native plant restoration, who shall direct all revegetation efforts, including any salvaging of native plants and monitoring.
- Submittal of the plans to CDFG for review and comment prior to approval by the City and County.

Impact BIO-3: Construction Impacts on Onshore Biological Resources, Native Habitat, Wetlands and Drainage to the Ocean. Construction activities have the potential to result in permanent alteration or destruction of habitat that precludes re-

establishment of native biological populations and/or prolonged disturbance to functional habitat of important biological resources (Potentially Significant, Class II).

Impact BIO-4: Oil Spill Impacts on Onshore Biological Resources. An accidental oil spill and subsequent cleanup efforts would result in an increased potential for a loss or injury (“take”) of a threatened, endangered, or candidate species, a net loss or degradation of functional habitat value of sensitive biological habitat, or a substantial loss of a population or habitat of native fish, wildlife, or vegetation (Significant, Class I).

Land Use, Planning and Recreation

Impact LU-1:⁴ The Proposed Project would be consistent with the adopted goals, objectives, and/or policies of approved land use plans, including the Santa Barbara County LCP, the City of Goleta General Plan and UCSB LRDP Amendment. The proposed Project would comply with both the County and City of Goleta policy goals of transporting crude oil from the County via pipelines rather than tanker or barge. Permanent cessation of the EMT operations will lead to the site’s conversion to managed open space. The existing Line 96 pipeline would also either be abandoned in place or appropriately removed, consistent with the General Plan policies of the City of Goleta that emphasize the protection of sensitive resources when considering pipeline abandonment projects. Therefore, the physical land use impacts resulting from the proposed Project would be considered (Beneficial Class IV).

Impact LU-2:⁵ Accidental oil releases would impact surrounding recreational resources. A number of sensitive habitats and high quality recreational resources are located within the potential area that would be impacted by the spread of oil from an accidental release. Shoreline and water-related uses would be disrupted by oil on the shoreline and in the water and would result in significant impacts (Significant, Class I).

Agricultural Resources

Impact AG-1: Loss of Agricultural Resources Due to Pipeline Construction and Soil Disturbance (Potentially Significant, Class II).

AG-1: Soil Replacement and Replanting. All soils within agricultural lands disturbed by pipeline construction activities shall be replaced and if necessary

⁴ NOTE: The level of impact would be less than significant rather than beneficial for the LFC alternative.

⁵ NOTE: Impact LU-2 from the Line 96 EIR would not apply to the LFC alternative since it would be redundant.

enriched to support their former crops (or cattle grazing areas). All disturbed areas shall be replanted at a 1:1 ratio.

Impact AG-2: Potential Loss of Agricultural Resources Due to Pipeline Leak or Spill. A spill of oil could result in impacts to the surrounding areas by impacting agricultural resources and local water supplies (Potentially Significant, Class II).

AG-2: Restoration after a Pipeline Leak/Spill. All areas contaminated as a result of an oil leak or spill shall be restored to their prior state with equivalent soils and agricultural resources.

Impact AG-3: Loss of Prime Agricultural Land. Project-related activities could result in the temporary loss of prime agricultural resources and crop production (Adverse, but not Significant, Class III).

AG-3: Dust Suppression and Fungus Control. Water trucks shall be used for dust suppression along the pipeline right of way to reduce the potential impact resulting from construction related dust spreading to adjacent agriculture areas during growing season. In addition, the Applicant and its contractors shall coordinate construction activities with the Santa Barbara County Agricultural Commissioner prior to excavation in order to develop an acceptable plan to reduce the potential for spread of the fungus to avocado orchards. This plan will include careful handling of trench spoil and the use of water trucks to reduce dust generation during construction.

Impact AG-4: Loss of Organic Agricultural Land. Project-related activities could disrupt certified organic farming activities resulting in decertification (Adverse, but not Significant, Class III).

AG-4: Compliance with Organic Standards. Any pipeline construction on or near a certified organic farm will be subject to specific precautions to protect soils from the introduction of prohibited substances. This would include the training of construction foremen and supervision of all personnel to conduct activities in a manner that takes substantive precautions to avoid contamination and undue negative impacts. The training shall be performed and documented by a USDA-approved Organic Certifier.

Public Services

Impact PS-2: Impacts on Water Utility. The proposed Project could result in increased demands for water due to construction, abandonment and testing (Less than Significant, Class III).

Impact PS-3: Impacts on Sewer. The proposed Project could result in increased discharge into the public sewer (Less than Significant, Class III).

Impact PS-4: Impacts to Solid Waste Facilities. The proposed Project could result in increased demands for waste handling capacities (Less than Significant, Class III).

Transportation and Circulation

Impact T-1: Increased Traffic during Construction and Abandonment of the Existing Line 96 could Exacerbate Existing or Future Unacceptable Traffic Levels of Service. The use of certain intersections or roadways to deliver/remove materials to/from the EOF or the pipeline route could cause significant impacts to area roadways that are currently, or could in the future, have unacceptable levels of service (Potentially Significant, Class II).

- **MM T-1a: Truck and Commuter Vehicle Routing.** For pipeline construction, the Applicant shall limit truck deliveries and commuters/personnel to the west Hollister-Highway 101 on and off ramps and shall not utilize the Storke Road and Hollister Avenue intersection or the Storke Road Highway 101 on/off ramps during peak hours (peak hours are defined as 6 a.m. to 8 a.m. and 4 p.m. to 6 p.m).
- **MM T-1b: Truck and Commuter Highway non-peak Operations.** Truck trips associated with the proposed pipeline installation shall be limited to non-peak hours.
- **MM T-1c: Construction Traffic Control Plan.** The Applicant shall prepare, provide funding for, and implement separate Construction Traffic Control Plans, for approval by the County and City of Goleta for the work in their jurisdictions., The plans shall include, but not be limited to the following:
 - Provide traffic controls when lanes are closed due to pipeline construction, e.g., flaggers, detour signs, orange safety cones.

- Close the pipeline trench for the non-work hours with approved plating, and surround the trench with safety barriers if necessary.
- Provide detours for emergency vehicles.
- Provide alternative routes for bicycles and pedestrians where feasible.
- Notify the residents or owners of any properties within 1,000 feet and/or adjacent to the pipeline right-of-way of the construction schedule at least one week prior to construction in their vicinity.
- Provide access to the affected properties during the construction; if access to businesses is not possible during the work hours, provide lost-sales compensation.
- Monitor for road damage from construction-related activities and compare the affected roads at the end of the construction to the pre-construction conditions; repair any visible construction-caused damage to restore the road to its pre-construction condition or better.
- No construction parking will occur in public parking lots (i.e. Haskells Beach and Ellwood Mesa/Sperling Preserve lots).

Noise

Impact N-1: Noise from Pipeline Construction and Abandonment Activities.

Pipeline construction machinery would produce short-term noise in the vicinity of the pipeline right-of-way (Potentially Significant, Class II).

MM N-1a: Noise Reduction Plan. The Applicant shall prepare noise reduction plans which shall be approved by Santa Barbara County and the City of Goleta for their respective jurisdictions. The plan would include, but not be limited to, the following measures:

- Post notifications to the residents and landowners within 1,000 feet of the Project site about the planned pipeline construction near their residence/land at least one week before construction at that location.
- Ensure that construction activities do not occur in the City of Goleta between 4:00 pm and 7:00 am on weekdays in nonresidential areas away from sensitive receivers, and 5:00 pm and 8:00 am on weekdays

near or adjacent to residential buildings and neighborhoods or other sensitive receptors, and not at all on Saturdays, Sundays or holidays, unless specifically required by permits or at the direction of the City staff.

- Ensure that construction activities do not occur in unincorporated areas of Santa Barbara County between the earlier of sunset or 7:00 pm and 7:00 am on weekdays within 1,000 feet of an occupied residence, and 5:00 pm and 8:00 am on weekdays near or adjacent to residential buildings and neighborhoods or other sensitive receptors, and not at all on Saturdays, Sundays or holidays, unless specifically required by permits or at the direction of the County staff.
- Ensure that all internal combustion engines are properly maintained and that mufflers, silencers, or other appropriate noise-control measures function properly.

MM N-1b: Noise from Boring Reduction Measures. If boring under Highway 101 or any other noise-producing activity during the pipeline construction is required to be conducted during the evening or night hours (from 5 p.m. to 8 a.m.), the Applicant shall install appropriate mufflers and/or temporary noise barriers to minimize noise at the residences and the Bacara Resort.

Aesthetics/Visual Resources

Impact VR-4: Visual Effects from Pipeline Installation and Abandonment. Installation of the pipeline and abandonment of portions of Line 96 would result in the removal of existing vegetation along the pipeline right-of-way, altering the visual character of the area (Potentially Significant, Class II).

MM VR-4: Revegetation of Pipeline Right of Way. The Applicant shall revegetate the cleared portion of the pipeline ROW with species that are biologically and visually compatible with the surroundings and continue with the appropriate watering schedule, if necessary, for establishing the permanent vegetative cover in accordance with a restoration plans approved by the City and County for their respective jurisdictions.

Cultural, Historical, and Paleontological Resources

Impact CR-1:⁶ Disturbance and Damage to Cultural Resources During Grading.

Grading and excavation associated with construction of the proposed Project pipeline facilities at the EOF would involve ground disturbing activities that could potentially result in disturbance to unknown archaeological sites buried below the EOF (Potentially Significant Class II).

MM CR-1b: Pre-construction Workshop. A pre-construction workshop shall be conducted by a qualified archaeologist and a Native American representative from the affected Native American Nation. All construction personnel who would work, during any phase of ground disturbance, shall be required to attend the workshop. To ensure participation in the workshop, attendance records will be monitored for all personnel who attend the workshop. Additionally, upon completion of the workshop, hardhat stickers will be issued to denote the completion of workshop training. The workshop shall:

- Review the types of archaeological artifacts that may be uncovered.
- Provide examples of common archaeological artifacts to examine.
- Review what makes an archaeological resource significant to archaeologists and local Native Americans.
- Review procedures that shall be used to record, evaluate, and mitigate new discoveries.
- Describe reporting requirements and responsibilities of construction personnel.

Impact CR-2: Construction Grading and Excavation at CA-SBA-139. Grading and excavation associated with construction of the proposed Project would potentially result in disturbance to unknown CA-SBA-139 deposits (Potentially Significant, Class II).

MM CR-2a: Avoid Disturbances to CA-SBA-139. The new onshore pipeline shall be redesigned or relocated, to the extent feasible, in order to avoid

⁶ Impact CR-1 does not apply to the LFC alternative because there would be no grading at the EOF; however, the mitigation measures contained in this impact would apply to the project to reduce impacts associated with other construction activities for this alternative.

disturbances to CA-SBA-139. Directional drilling shall be considered as a method to avoid the site.

MM CR-2b: Phase 2 Study. A Phase 2 significance assessment investigation shall be conducted if avoidance of CA-SBA-139 is not feasible. If found to be significant, a Phase 3 data recovery mitigation program shall be conducted.

MM CR-2c: Archeological Monitoring. All ground disturbances associated with construction of the new onshore pipeline within the documented CA-SBA-139 site boundary shall be monitored by a qualified archaeologist and a Native American representative from the affected Native American Nation.

MM CR-2d: Avoidance and Unanticipated Discoveries Plan. Prepare an Avoidance and Unanticipated Discoveries Plan, including provisions for an archeological monitor, data recovery program, Native American monitor, and guidelines addressing immediate actions to be taken should a discovery be made.

Impact CR-3: Grading and Excavation Access to CA-SBA-139. Grading and excavation associated with construction of the proposed Project would result in a short-term increase in access to archaeological artifacts associated with CA-SBA-139 and the potential for unauthorized collection (Potentially Significant, Class II).

Impact CR-4: Grading and excavation access to CA-SBA-83, CA-SBA-1676, and CA-SBA-1733. Grading and excavation associated with construction of the proposed Project would potentially result in a short-term increase in access to archaeological artifacts associated with CA-SBA-83, CA-SBA-1676, and CA-SBA-1733, and the potential for unauthorized collection (Potentially Significant, Class II).

MM CR-4: Archeologist Monitoring. All ground disturbances associated with construction of the new onshore pipeline within the documented CA-SBA-83, CA-SBA-1676, and CA-SBA-1733 site boundaries shall be monitored by a qualified archaeologist and a local Native American representative.



Appendix J

**ENVIRONMENTAL RELEASES DURING LINE 96
CONSTRUCTION**



Environmental Releases during Line 96 Construction



During construction of Line 96 in October 2011, several spills and environmental releases of fluids related to construction occurred. These incidents were observed and recorded by environmental monitors over the course of construction. Under the *Processing PRC 421 Oil at Las Flores Canyon* alternative of the proposed Revised PRC 421 Recommissioning Project (Project), construction of a new pipeline from the EOF to the Receiving Station at LFC would involve many of the same construction activities as construction of Line 96. In particular, horizontal directional drilling at several sites in order to run the pipeline underground would create potential for spills and “frack-outs”, which could release and expose people and the environment to hazardous materials.¹ Construction of the new pipeline, especially in regard to horizontal directional drilling at the same locations, may result in similar incidents. Therefore, this EIR analysis accounts for lessons learned from the environmental monitoring activities that took place during drilling operations performed for the construction of Line 96, as documented below in Table 1.



Table 1 Spills and Environmental Releases during Line 96 Construction


Date	Location	Size/ Material	Description from Daily Monitoring Report	Photo Documentation of Incident Setting from Monitoring Report
Oct 4, 2011	Dos Pueblos Horizontal Directional Drill site	<1 pint, hydraulic fluid	A small volume of hydraulic fluid (<1 pint) spilled from a piece of rental equipment at the Dos Pueblos HDD site. The incident was immediately brought to the attention of the EQAP Environmental Monitor. Affected soil was shoveled into a labeled container for appropriate handling and disposal.	
Oct 10, 2011	Underground	700-800 gallons, drilling fluids	The Mud Engineer noted a reduction in circulation from 40 to 30 gallons/minute, resulting in approximately 7-800 gallons of lost returns....No surface release of drilling fluids was detected.	


¹ During normal drilling operations, drilling fluid travels up the borehole into a pit. When the borehole becomes obstructed or the pressure becomes too great inside the borehole, the ground fractures and fluid escapes to the surface. This is referred to as a “frack-out” or “frac-out.”

Date	Location	Size/ Material	Description from Daily Monitoring Report	Photo Documentation of Incident Setting from Monitoring Report
Oct 11, 2011	Road shoulder, east side of Dos Pueblos Canyon	2 X 10 gallons, drilling fluids	<p>There were two small (approx. 10 gallons each) releases of drilling fluids (“frac-outs”) on the east side of Dos Pueblos Canyon. Both events occurred along the road shoulder of the Dos Pueblos Canyon highway off-ramp, within 150 feet of the exit pit and well away from Dos Pueblos Creek. Both releases were quickly detected, contained, and cleaned up.... No evidence of drilling fluids was observed within the creek. (Note: location was over 100 yards from the creek)</p>	
Oct 14, 2011	Road shoulder, east side of Dos Pueblos Canyon and Storm drain outlet	(2 events) Unknown amount, drilling fluids	<p>At approximately 2:45 PM, drilling fluids began surfacing on the road shoulder.... A pit was excavated at this location and mud was recovered with a vacuum truck as it filled the excavation.</p> <p>At approximately 6:00 PM, monitors observed drilling fluids at a storm drain outlet down-gradient from the exit pit. The contractor had proactively installed a temporary barrier here prior to initiating the pilot bore and this was effective in containing the drilling fluids. A storm drain inlet, also equipped with temporary containment barrier, is located a few feet down-gradient from this outlet. This second drain discharges directly into Dos Pueblos Creek, approximately 150 feet to the west.</p> <p>Reaming was immediately stopped when the fluids were detected in the storm drain....It was decided that operations would be suspended at</p>	

Date	Location	Size/ Material	Description from Daily Monitoring Report	Photo Documentation of Incident Setting from Monitoring Report
			<p>that point, in view of the uncontrolled fluid release and difficulties imposed by darkness. Operations were suspended at 7:00 PM and the site was secured (clean-up, plating or otherwise covering open excavations)....Monitors were stationed at the creek throughout the reaming process and no evidence of drilling fluids within the riparian zone was observed.</p>	
Oct 15, 2011	"point of previous release" from October 14, 2011	Unknown, drilling fluids	<p>Drill mud surfaced at the point of previous releases and was effectively contained and cleaned up. There was no evidence of drilling fluids entering the storm drain system.</p>	

Date	Location	Size/ Material	Description from Daily Monitoring Report	Photo Documentation of Incident Setting from Monitoring Report
Oct 17, 2011	West of Dos Pueblos Canyon	< 0.5 cup, hydraulic fluid	A very small leak of hydraulic fluid (<1/2 cup) occurred shortly after trenching began. The leak was immediately contained. The Site Safety Officer documented the incident with a CARE Form and supervised cleanup.	
Oct 24, 2011	Ellwood Offshore Facility	4-6 ounces, hydraulic fluid	A small leak of hydraulic fluid (4-6 ounces) occurred beneath the clamp used to secure the casing as it was fitted. The leak was detected almost immediately. Containment and cleanup were efficient and effective.	

Date	Location	Size/ Material	Description from Daily Monitoring Report	Photo Documentation of Incident Setting from Monitoring Report
Oct 26, 2011	Culvert passing beneath the highway and UP Railroad	Unknown, potentially up to 117 gallons (6-inch diameter hole for 80 feet), drilling fluid	<p>A sudden loss of circulation of drilling fluids was noticed by the operator of the bore machine at about 12:30 PM. The Drilling Foreman directed that the machine be immediately shut off....Upon inspection of the culvert passing beneath the highway and UP Railroad, a slight increase in turbidity of water at the mouth of the culvert was observed. Closer inspection revealed a slow, low-volume release of fine sediments from a crack in the floor of the culvert, approximately 150 feet from its north (upstream) end. Water downstream was also slightly cloudy as noted above. Several small fish, tentatively identified as Tidewater Goby were observed in shallow pools within the culvert, downstream from where the sediments were originating.</p> <p>Upon further examination it was determined with some certainty that the sediments were originating from the bore hole. At this point (approximately 1:00 PM) the volume of affected water was estimated at about one gallon. Initial attempts at containment included a barrier of sand bags to isolate stream flow from the frac-out. A second barrier of sand bags had been proactively installed downstream, at the mouth of the culvert. A monitor was stationed the downstream end of the culvert ensure that no one entered the "wet" portion the channel. This was done to prevent inadvertent injury to gobies as a result of foot traffic associated with frac-out response. Entering from the north end of the culvert posed no such risk – there were no fish</p>	

Date	Location	Size/ Material	Description from Daily Monitoring Report	Photo Documentation of Incident Setting from Monitoring Report
			<p>in this portion of the channel.</p> <p>An aquatic biologist holding a Federal Recovery Permit for tidewater goby was called out to make a positive identification and to assess overall health of the fish. She identified the fish as Tidewater Goby. She reported seeing 12-15 fish in the culvert; all of these appeared unaffected by the increase in turbidity.</p> <p>The drilling crew and Environmental Monitors worked throughout the afternoon to improve containment at the point of the frac-out. Stream flow was diverted away from the point where sediment was being released by means of rows of sand bags covered in plastic (the plastic formed a better seal against the concrete floor of the culvert). The frac-out point was then enclosed with a ring of plastic-covered sand bags encircled with a straw wattle and two rows of synthetic boom for filtration. At 6:00 PM it was determined that no further measures could or should be implemented without agency consultation. The crew and monitors left the site at about 6:00 PM.</p> <p>The volume of the drilling mud released cannot be accurately determined. When first noticed, it amounted to a small "trickle" (see estimate of 1 gallon of affected water), but the release was steady for at least 5-6 hours. After 6:00 PM when sediment controls were completed, the mud was effectively contained, but water was still seeping from the crack in the floor of the culvert. When inspected the following morning, water flowing through the containment/filtration</p>	

Date	Location	Size/ Material	Description from Daily Monitoring Report	Photo Documentation of Incident Setting from Monitoring Report
			<p>device was clear. The volume of drilling fluids potentially released would have amounted to what was injected into the 6-inch diameter pilot hole for a distance of about 80 feet (distance that the drill bit had been advanced before circulation was lost). Much of the bentonite likely remained in the annulus once down-hole pressure was relieved.</p> <p>It appears that the drill head penetrated an aquifer, or perhaps intercepted base flow beneath the culvert. There is a natural "spring" that issues from a crack in the floor of the culvert from which the drilling mud was released. The groundwater likely mixed with drill mud from the annulus due to pressure and gradient and the water at the surface remained cloudy until that pressure equalized.</p>	

Appendix K

ELLWOOD ONSHORE FACILITY PERMIT HISTORY AND SAFETY AUDITS

FINAL

District REEVALUATION PERMIT to OPERATE No. 7904-R9
and
PART 70 *Renewal* OPERATING PERMIT No. 7904-R9

VENOCO - ELLWOOD
ELLWOOD ONSHORE FACILITY

7979 HOLLISTER AVENUE
GOLETA, CA 93117

OPERATOR

Venoco, Inc.

OWNERSHIP

Venoco, Inc.

Santa Barbara County
Air Pollution Control District

December, 2011

1.2 Facility Overview

1.2.1 General: Venoco, Inc. (Venoco) is the sole owner and operator of the EOF. The EOF is located approximately 14 miles west of downtown Santa Barbara and south of US Highway 101. For District regulatory purposes, the facility is located in the Southern Zone 2 of Santa Barbara County. Figure 1.1 shows the relative location of the facility within the county.

The EOF was constructed by the Atlantic Richfield Oil Company (ARCO) in the early 1970s, was sold to the Mobil Oil Corporation in the early 1990s, and was then sold to Venoco Inc. in 1997.

The Ellwood Onshore Facility consists of the following primary emission systems and processes:

- Crude oil receiving system
- Crude oil processing system
- Crude oil and other HC liquid storage and transfer system
- Gas receiving system
- Gas processing/delivery system, sulfur removal including dehydration, sweetening and *COI* removal
- Gas compression/low temperature system including LPG/NGL recovery
- Loading rack for LPG and NGL and other HC liquid trucks
- Vapor/flare gas collection and incineration system
- Produced and waste water system
- Pipeline and equipment components with fugitive emissions
- Support system including process heater

The *Venoco- Ellwood* stationary source (SSID = 1063) consists of the following four facilities:

- Platform Holly (FIO= 3105)
- Ellwood Onshore Facility (FID= 0028)
- Beachfront Lease (FID= 3035)
- Seep Containment Device (FID= 1065)

1.2.2 Facility Operations Overview: The EOF is designed to receive oil, water and gas from Platform Holly and the Seep Containment Devices located on State Coastal Lease 3242. Crude oil emulsion and sour gas containing hydrogen sulfide (H₂S) from Platform Holly and gas from the Seep Containment Devices are separately transported via sub-sea pipelines to the EOF. At the EOF, gas and water are separated from the crude oil and the sour gas is processed to sales gas quality.

Oil: Crude oil emulsion is heated in heat exchanger banks and heater treaters. The heating plus chemical and electrical treatment of the emulsion results in separation of entrained water. Dry crude from the heater treaters is stripped to reduce its hydrogen sulfide content and then piped to one of two stock tanks for storage. From the stock tanks, the crude is sent to a Lease Automated Custody Transfer (LACT) unit to be metered and sent to the Ellwood Marine Terminal, where it is shipped by ocean-going barge to refining facilities.

VENOCO has recently received an Authority to Construct a pipeline to a connection with the Plains Pipeline, L.P., pipeline near Corral Canyon. When this construction is completed, oil from the EOF will be shipped via this pipeline, rather than the Ellwood Marine Terminal. This will result in the shutdown of the marine terminal.

The water and residual oil separated from the crude emulsion in the heater treaters are piped to a wash tank to separate the water and the oil. In the tank, oil is skimmed from the top and recycled back into the oil processing system. Bottom water is pumped off and injected into an on-site disposal well.

Gas: Sour field gas from Platform Holly is combined with gas from the Seep devices. The combined stream is then chilled to separate entrained liquids, and scrubbed to reduce its hydrogen sulfide content to Public Utility Commission (PUC) natural gas standards. The resultant gas stream is compressed to about 1,000 psig and sent through a membrane separator to reduce the carbon dioxide content. The PUC quality natural gas is then metered into the sales gas pipeline via a sales gas handling system.

When the plant is not processing gas from Holly, the seep gas is rerouted to iron sponge vessels, which contain either iron sponge material or Sulfa-Treat to remove sulfur compounds. The sweetened seep gas is then incinerated.

The EOF also produces liquefied petroleum gas (LPG), natural gas liquids (NGLs) and elemental sulfur. The LPG and NGL are trucked out of the EOF via onsite loading racks. Elemental sulfur is removed from the site by trucks.

The EOF was permitted in 1982 (PTO 4970) to operate a Stretford unit to lower the high hydrogen sulfide levels in the field gas and to operate an odor abatement system (OAS). Installations at the EOF included a thermal oxidizer unit in 1982; also a Grace unit was installed in 1992 (ATC 8262) for COI removal that replaced the existing Fluor unit. In 1995, the heater treaters at the EOF were de-rated (ATC 9218) and the process heater modified (ATC9217); and, in 1997 (ATC 9473) the EOF was re-configured to remove the OAS and route organic sulfide gases to an existing thermal oxidizer (11-205) for incineration.

The design processing capacity of the EOF is 20,000 barrels/day (bpd) of crude oil-emulsion and 20 million standard cubic feet/day (MMSCFD) of incoming gas that includes up to 20% of COI. It is currently District-permitted to produce 13,000 bpd of dry oil, 13 MMSCFD of gas, 10 million gallons/yr of LPG and 5 million gallons/yr of NGL. Sulfur production is limited to 9.8 long tons/day (21,952 lbs/day). Current oil true vapor pressure (TVP) is 2.8 psia and API gravity is approximately 21.

1.2.3 Facility Permits Overview: The EOF operates under a combined Federal Part 70 Operating Permit No. 7904 and District Permit to Operate (PTO) 7904, both issued by the District.

1.2.3.1 *Prc-1979, Pre-District-NSR-Delegation Period* - ARCO Ellwood Onshore Facility submitted a number of permit (AIC and PTO) applications for equipment to the newly formed District during 1971 and 1972. These included ATCIPTO application #5 21122 (12128171), 171, 172, 173, 174, 175 and 176 (5/30172): all applications except # 171 were denied because of the listed high sulfur content in the in-plant fuel gas. As to ATCIPTO# 171, which listed a heater treater (10' dia. x 50' high), two 2,000-bbl crude oil storage tanks, a LACT unit and a sales and lift gas conditioning/compressing facility (these devices were in use at the EOF site), no action was taken on the application. Following this, ARCO obtained a long-term variance from the District Hearing Board to operate all

equipment listed in ATC/PTO's 1711172/174!175 until March 1977. ARCO submitted ATC/PTO applications 340/383 in mid-1973. The equipment items in #340 were subsequently de-activated; and, the other application was cancelled to facilitate a modified application for the same unit (Stretford unit). Application #982 to install an iron sponge unit (for removing H₂S) and a GAC carbon canister (for removing ROCs) was submitted in 11176; PTO 2164 for the two equipment were issued in 11176. ARCO submitted applications J 194, 1195 and 1196 on July 11, 1977 addressing permits for increased production at the crude oil sweetening unit, the Stretford unit and the Fluor CO₂ removal unit respectively. An NSR Application 1196 was also submitted to the USEPA by AReO (Reference: Atlantic Richfield - NSR 01196] on 12/12/77 for increased sour crude processing (heater treater dehydration, sweetening and transport to marine terminal) from 4,000 to 20,000 barrels/day and increased gas stream processing (sweetening, compression, LPG recovery and CO₂ removal) from 4 to 20 MMSCFD. The District denied ATC 1195 application; but, issued ATC 1196 covering all the equipment and process rates listed above, on 1/23/78. Finally, ARCO submitted an ATCIPTO application 1198 for a flare gas incinerator (8' high x 20'dia.) in 8/77 and obtained District PTO #2166 for the device (H-205) in 8/77.

1.2.3.2 Post 1979, Post District-NSR-Delegation Period - ARCO submitted ATC/PTO applications 4342 and 4450 for a vacuum truck exhaust scrubber and a vapor recovery unit (VRU) cooler in 8/81. The District issued an ATC for the VRU cooler in 8/81 and a PTO 4342 for the scrubber in 8/82. Later, in 11181, the District and ARCO reached a settlement on the Stretford unit, and a revised PTO 5076 was issued in 1982 addressing modified operations of this unit. Application 4578 for an incinerator (14.5' diameter x 30' high) was submitted on 1/82 and an ATCIPTO was issued for it (H-206) in 1/82. Other pre-construction permits issued are, as follows:

ATC 7234 (9/1988) - implemented a fugitive hydrocarbon inspection & maintenance (I&M) program; ATC 8262 (12/1991) - installed the Grace CO₂ removal unit to replace the existing 'Fluor' unit; ATC 9217 (9/1994) - modified the existing process heater (H-204) to reduce its NO emissions to District Rule 342 compliance limits; ATC 9218 (2/1996) - de-rated the three heater treaters (1-1-201, H-202 & H-203) by burner modifications and limiting fuel type and hourly fuel use; ATC 9473 (11/1997)- modified the existing odor abatement system (OAS) by modifying the existing thermal oxidizer H-205 and associated OAS process flow lines and odor abatement equipment. ATC 9218-01 (5/1996) modified all burners and further de-rated R-202.

The EOF operator proposed in October 1988, the modification of the 'Stretford' solution operation to a 'LO-Cat' solution operation for the sulfur recovery unit. In March 1989, the Stretford unit was modified to a 'LO-Cat' unit. This modification was considered 'de minimis' under the District rules. However, the OAS modification in 1997 described earlier (ATC 9473). required piping additions and increased fugitive gas emissions. The District concludes that the 1988 modification triggered the federal NSPS, 40 CFR Part 60, Subpart LLL. (Onshore Natural Gas Processing: SO₂ Emissions) promulgated in 1985. The facility also obtained an ATCIPTO 1537 to operate a gasoline-fueling pump in 1991. *Note: All conditions in (a) the NSR-OII96 and (6) all post-1979 ATCs are federally enforceable.*

1.2.3.3 *Post Sept 1998 Part 70 Permit Issuance-* Since the issuance of the initial Part70 Operating Permit on September 25, 1998, there have been the following permit actions:

ATC Mod 9473-06: Minor modification to the permit conditions for H-205 to relax residence time and increase combustion temperature to reflect applicable BACT ROC control standards. This permit was issued on 5/24/1999.

A TC/PTO 10022: For conversion of an exempt Therminol storage tank into a ROC containing emulsion breaker storage tank. This permit was issued on 12/31/1998.

PTO Mod 7904-01: District and Minor Part 70 modification to incorporate ATC 9473-6 and *ATC/PTO 10022* requirements. This permit was issued on 12/16/1999.

A TC/P TO Mod 7904-02: Combined ATC/PTO to document Abatement Order 99-6(A) required installation of GSF Odor Station and Met, DAS, and H,S Fence line monitors at the EOF. Also includes Handheld H,S meter for District. This permit was issued on 4/21/2000.

ATC 10749. For addition of fugitive emissions components (valves and connections) in conjunction with upgrading the York Compressor. ATC 10749 was incorporated into PT70-District PTO 7904-R 7.

ATC/PTO 10941: ATC 10941 was issued on 27 January 2003 addressing the Grace Unit modification required to meet newer PUC specifications for CO1 content in the sales gas. The PTO was issued on 24 August 2004.

ATC/PTO 11106: The combined ATC/PTO 11106 was issued on 7 September 2004 to address the frequency changes in pigging events between EOr and Platform Holly.

ATC/PTO I J 169: ATC III 69 was issued on 2 September 2004 to address an annual increase of heat input to H-205 unit along with establishing a revised planned flaring volume limit excluding CO2 from gas streams flared in H-20S, H-206 and H-207. PTO 11169 was issued on 25 February 2005.

Since PT 70-District PTO 7904-R7 was issued in December 2005 the following permits have been issued:

ATC/PTO 11579: ATC 11579 was issued on September 15, 2005 the addition of four permeate tubes to the "firststage" of the grace CO, removal unit and the installation of a two tube second stage. PTO 11579 was issued on May 27, 2008.

PTO Mod 7904 02: PTO Mod 7904 02 was issued June 26, 2008 to increase the permitted CO fraction of the gas entering the EOF and decrease the permitted flaring volume to ensure compliance with Rule 359.

ATC/PTO 12839: ATC/PTO 12839 was issued August II, 2008 to decrease the permitted NO, emission factor for H-205. The permitted emissions were reduced concurrently with the issuance of ATC 12804 [or a new crane engine on Platform Holly] in order to keep the stationary source NEI below the offset thresholds.

ATCIPTO 12886: ATC/PTO 12886, was issued December 28, 2008 to add fugitive components from various small projects to the permit. This ATC/PTO was applied for in response to NOV 8814 for exceeding the de minimis limit of 24.00 lb/day. The addition of the fugitive components contributes to the NEI of the station's source.

PTO Mod 7904-03: PTO Mod 7904-03 was issued October 22, 2009 to increase the CO₂ content of the inlet gas to the Ellwood Onshore Facility and decrease volumetric flaring.

ATC Mod 13420-01: ATC Mod 13420-01 was issued November 4, 2010 to replace the existing burner and blower on H-205 with new units. This permit increased the permitted hourly and daily flaring rates of H-205 and decreased the NO_x and CO emission factors. The permit decreased the allowed hourly, daily, and annual flaring rates for H-206. The permit also corrected the burner capacity listed for H-207 and authorized an increase in the hourly, daily, and annual flaring rates for H-207. The permit generated a "P2" term for the modifications to H-205 and H-206 and an "I" term for the modifications to H-207.

ATC 13689: ATC 13689 authorizes the construction of a pipeline from EOF to a connection with the Plains Pipeline, L.P. pipeline near Corral Canyon. When this construction is completed, oil from the EOF will be shipped via this pipeline, rather than the Ellwood Marine Terminal. This will result in the shutdown of the marine terminal.

1.3 Emission Sources

The emissions from the Ellwood Onshore Facility come from combustion sources (process heater, heater treaters, and thermal oxidizers), oil storage tanks, a reject oil tank, LPGINGI- and emulsion breaker loading racks, vacuum truck exhaust, oil/gas separators and process sumps, pig receivers and a launcher, gas sweetening unit, Glycol dehydration unit, diesel fuel pump and fugitive emission components such as valves and flanges. Section 4 of the permit provides the District's engineering analysis of these emission sources. Section 5 of the permit describes the allowable emissions from each permitted emissions unit and also lists the potential emissions from non-permitted emission units.

Specifically, the emission sources include:

- One (1) diesel-fired IC engine used to drive an emergency firewater pump.
- One (1) diesel-fired IC engine emergency backup electrical generator to power the VRU compressors, and other essential equipment (e.g., general lighting, computers, alarms, and shutdown systems, etc.).
- Three (3) in-plant fuel gas-fired heater treaters;
- One (1) gas-fired process heater unit, using in-plant fuel gas plus permeate gas;
- Two (2) older thermal oxidizers, one (1) modified thermal oxidizer;
- Three (3) crude oil storage tanks (two stock tanks and one LACT tank), one (1) emulsion breaker liquid tank;
- One (1) oil pipeline pig receiver, one (1) gas pipeline pig receiver, one (1) gas pipeline launcher, one (1) utility gas pipeline pig receiver;

2013 VENOCO EOF SIMQAP AUDIT MATRIX

Audit Dates: 11-12 & 12-3, 2013			Revision Date: May 23, 2014					
Item #	Audit Findings	Dept.	Priority #	Recommendations	Due	Done	Status	Accepted by SSRRC
1	NDT inspections reports have number of outstanding items still not addressed. Last year's Audit Item #54	B&S	3	Address and close out the outstanding items in a timely manner.	12/12/13		A Major milestone is achieved. Venoco is now current with its NDT inspection program @ EOF.	5/21/14
2	Tool storage container does not open/close properly. (located near gate entrance.)	APCD	4	Repair or replace lid on tool storage container.	1/31/14	12/5/13	Tool Box replaced.	12/16/13
3	Surface coating failure and corrosion on two overhead sour gas lines (approximately 1/2-inch) going to a total flow meter (pre-LoCat).	APCD	3	Replace both sour gas lines with stainless steel lines.	1/31/14	3/15/14	The lines are replaced with Stainless steel tubing.	4/9/14
4	Corrosion on top-deck support brackets (LoCat area).	APCD	3	Assess integrity of support brackets. If deemed necessary, take appropriate measures to either repair or replace brackets. Actions to be taken also to include surface coating to prevent future corrosion.	1/31/14	4/27/14	Installed shims and cleaned up the supports.	5/1/14
5	Air cooler (bypassed off the Hoffman Blowers) is not labeled "Out Of Service".	APCD/B&S	4	Label the Air Cooler Out of Service.	1/31/14	11/13/13	The Air Cooler is labeled OOS.	12/16/13

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Audit Dates: 11-12 & 12-3, 2013			Revision Date: May 23, 2014					
Item #	Audit Findings	Dept.	Priority #	Recommendations	Due	Done	Status	Accepted by SSRRC
6	By the Firewater Tanks, jockey pump is missing a car seal on the discharge side.	APCD	4	Install car seal (or equivalent).	1/31/14	11/13/13	Car seals are installed.	12/16/13
7	Equipment and tool storage shelves inside the Operations Storage Container ("C-Train") are not earthquake strapped.	APCD	4	Earthquake strap the storage shelves.	1/31/14	12/13/13	All shelves in the "C Train" are now bolted to the wall.	1/22/14
8	Electrical outlet inside the Operations Storage Container ("C-Train"), near the door, does not have GFI protection.	APCD	3	Replace with GFI outlet.	1/31/14	3/15/14	GFI outlet is installed.	4/9/14
9	V-224 (Hybon Scrubber): Horizontal piping on level controller cracked (approximately 3/4 to 1-inch wide) and leaking sweet gas.	APCD	2	Isolate and block in the field.	ASAP	11/12/13	Isolated and blocked in the field.	11/12/13
10	V-224 (Hybon Scrubber): Horizontal piping on level controller cracked (approximately 3/4 to 1-inch wide) and leaking sweet gas.	APCD	3	Repair the cracked pipe.	1/31/14	11/15/13	The controller is removed and the set of blind flanges installed. The controller is no longer needed.	12/16/13

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Item #	Audit Findings	Dept.	Priority #	Recommendations	Due	Done	Status	Accepted by SSRRC
11	Fluor cellar (S/E corner): Wind sock is not on the metal sleeve.	APCD/B&S	4	Re-attach and secure the wind sock.	1/31/14	11/12/13	The windsock is re-attached and secured.	12/16/13
12	1-1/2 inch discharge line from pump (P-201-C) near T-201 going into the ground was improperly wrapped for corrosion control. (Documented corroded metal flaking off.)	APCD	3	Assess integrity of the pipe. If deemed necessary, replace the pipe. Take measures to prevent future corrosion of the discharge line going underground.	1/31/14	11/12/13	Cleaned and re-wrapped the piping.	11/16/13
13	TK-204: Surface coating failure and corrosion on VRU line overhead (header running North and South).	APCD	3	Assess integrity of the pipe. Take appropriate actions, including surface coating to prevent corrosion.	1/31/14		The overhead VRU line has been cleaned and recoated.	5/1/14
14	Tote Storage Area: 5-gallon plastic container of "UCAR HTF-Inhibitor-268" was cracked-open along the side of the container. Five gallon white containers are not labeled.	APCD/B&S	3	A. Properly dispose or store material. B. Label the white containers.	1/31/14	12/9/13	The cracked container is removed and all containers are labeled.	12/16/13
15	Fire Extinguishers are missing annual inspection-#11 and the one located near V-1203.	Fire		Conduct the annual Fire Extinguishers inspection.		11/14/13	Annual inspection completed.	1/10/14
16	SCBA containers (#3 and #8) are difficult to open.	OEM	3	Repair the mechanism to open the containers.	1/31/14	12/30/13	SCBA containers were repaired.	1/10/14

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Audit Dates: 11-12 & 12-3, 2013			Revision Date: May 23, 2014					
Item #	Audit Findings	Dept.	Priority #	Recommendations	Due	Done	Status	Accepted by SSRRC
17	Sump near TK-1905 is clogged up and overflowing.	OEM	3	Unclog, clean and drain the sump.	1/31/14	11/12/13	The sump was drained and cleaned on the audit day.	1/10/14
18	SCBA are due for hydrotest or replacement: DG978091, DG126125, T65026, T64761 and T64698. Verify DG41976.	OEM	3	Hydrotest or replace the SCBAs.	1/31/14	11/21/13	SCBA hydrotests are now current and the paperwork now matches the bottles.	1/10/14
19	At F-2203, at ground level, 1" piping is installed horizontally without adequate support.	B&S	3	Provide support every 8 feet as per 2010 CPC Section 314.1, Section 314.5 and Table 3-2.	1/31/14	11/20/13	1" piping is now supported.	1/22/14
20	At LoCat Unit, between V-1201 and V-1202, Second level, plastic tie wrap is supporting stainless steel tubing.	B&S	3	Replace the plastic tie wrap with a durable means of support as per 2010 CPC Table 3-2.	1/31/14	12/17/13	The tubing is now properly supported.	1/22/14
21	At LoCat Unit, Second level, southeast of V-1201, overhead, vertical pipe clamp is loose.	B&S	3	Secure the pipe as per 2010 CPC Section 314.1, Section 314.1 and table 3-2.	1/31/14	11/20/13	The clamp is tightened.	12/16/13
22	At LoCat Unit, second level, south east of V-1201, overhead, flange bolt is not tight and appears to have a 1/4" gap between the flange and the nut.	B&S	3	Re-torque the fasteners at this flange.	1/31/14	11/16/13	The bolt is tightened.	12/16/13

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23	At the north side of west entrance to LoCat Unit, a damaged stainless steel tubing appears to have been previously been installed to a tee at a PI gage.	B&S	3	Reconnect the tubing or remove if not needed.	1/31/14	1/22/14	The damaged tubing is now removed.	1/22/14
24	Below "PLC-1808" control panel, the western most conduit installed in the bottom of the CP is not bonded and two conduits are missing supports (strut straps).	B&S	3	Bond and provide supports for the conduits as per 2010 CEC 34.30(A).	1/31/14	11/20/13	The supports are installed and the conduit is bonded.	1/22/14
25	At the second level platform, above the blower, located below E-1302, the northwest light fixture's guard is damaged with only half of the guard remains.	B&S	3	Replace the guard as per 2010 CEC 110.3(7).	1/31/14	1/29/14	The guard is replaced.	4/22/14
26	At the Eyewash Station #6, the tie wraps are supporting 3/4" steel conduit.	B&S	3	Replace the tie wraps with a durable means of support as per 2010 CPC Table 3-2.	1/31/14	11/20/13	The brackets are installed for the support.	1/22/14
27	Above Eyewash Station #6, Zone 8, the electrical enclosure is corroded at the bottom back side of the enclosure. A flat washer is installed to	B&S	3	Replace or repair the enclosure as per 2010 CEC 110.3(2) & 110.11.	1/31/14		Cleaned And recoated the enclosure.	4/22/14

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	replace the OEM arched retainer clip.							
28	In the area east of V-229, at the bottom of the vertical 8" pipe, a valve wheel is half buried in the ground.	B&S	3	Due to location at the level of the ground, the valve may need to be relocated or maintained or excavate around the wheel to provide clearance for operation as per 2010 CMC 309.0, 310.1 and 310.4.	1/31/14	11/13/13	The soil underneath the valve handle is excavated for the clearance to open/close the valve.	12/11/13
29	At V-229 overhead piping on a horizontal pipe, a valve handle is not properly installed with the handle obstructing operation of the valve. The valve will not fully open due to a vertical pipe at this location.	B&S	3	Install the valve handle properly as per 2010 CMC 309.0, 310.1 and 310.4.	1/31/14	11/13/13	The valve is car sealed open	12/16/13

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30	Grounding installed at various locations (Fire Water Tanks, Motors, etc.) appear to have utilized ground lugs that are not listed for exterior use. Also, at the Fire Water Tank, the grounding lug was removed for painting and the lug then reinstalled over the paint obstructing the positive connection by the paint coating. The Aluminum lugs and the set screws are corroded.	B&S	3	A. Verify that the lugs are code compliant or replace the lugs with listed for exterior use as per 2010 CEC 110.3(B). B. Normally, the lugs listed for exterior use have stainless steel set screws.	1/31/14		The Firewater tanks grounding areas were cleaned up with new grounding wires installed. Need to locate the motors that have the grounding lugs not listed for exterior use. Curtis Jensen to follow up.	
31	Broken glass on PI gage at K-202 Compressor.	B&S	3	Replace the PI gage.	1/31/14	12/30/13	PI gage is replaced.	1/22/14
32	At "Seep Gas" and "Crude Oil" pit, south wall, a damaged light fixture with a outlet box installed to cover the opening where part of the light fixture has been removed. The "GRS" box outlet box is not listed for the use.	B&S	3	Remove the fixture arm from the existing fixture box and install weather proof cover on the fixture box complying with 2010 CEC 110.3(B).	1/31/14	11/20/13	The fixture arm removed and a weather proof cover on the fixture box is installed.	1/22/14

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33	Below "6780 Analyzer" enclosure, there is an open conduit and a fitting with a lo-volt cable.	B&S	3	Install a grommet fitting on lo-volt cable to prevent gas migration into the conduit.	1/31/14		Disconnected to run through GCB seal.	4/22/14
34	South of "6780 analyzer", on a railing, a pressurized five gallon tank is installed. The mounting brackets on this tank are loose.	B&S	3	Tighten the mounting brackets.	1/31/14	3/15/14	The tank is properly secured.	4/9/14
35	The Air Compressors, K-204A/B/C do not have a service disconnect located within the sight of the compressors.	B&S	3	Locate the disconnect within the sight of these compressors as per 2010 CEC 430.75, 430.101, 430.102(A)&(B) and 430.103.	1/31/14		Existing service disconnects are located on the right side of the compressors. K-204 is currently out of service.	5/8/14
36	At 1012-SS, stainless steel tubing installed in gravel is bumped out of the location. This tubing is attached to the equipment structural support (vertical) via tie wraps.	B&S	3	Secure the tubing by permanent means to prevent dislocation in the future.	1/31/14		Unable to locate unsecured tubing. Curtis to follow up	
37	At the loading rack area, signage for the fire extinguisher is faded and illegible.	B&S	3	Remove and replace the faded sign.	1/31/14	12/30/13	A new sign is installed.	1/22/14
38	Sign on the safety locker in the LoCat Unit is faded.	B&S	3	Replace the faded sign.	1/31/14	12/5/13	The safety locker is removed.	12/16/13

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Item #	Audit Findings	Dept.	Priority #	Recommendations	Due	Done	Status	Accepted by SSRRC
39	Broken PI gage @ Sales Gas control valve.	B&S	3	Replace the broken gage.	1/31/14	12/28/13	PI gage is replaced.	1/22/14
40	The Eductor inlet lines are corroded at V-1201 and V-1202.	B&S	3	Evaluate and coat the corroded lines.	1/31/14	1/22/14	These lines are included in the plant wide coating program.	1/22/14
41	Surface corrosion @ the pipe support between V-1201 and V-1202.	B&S	3	Evaluate and coat the corroded area.	1/31/14	1/22/14	These lines are included in the plant wide coating program.	1/22/14
42	Unsupported electrical conduit near the pipe support between V-1201 and V-1202.	B&S	3	Provide support for the electrical conduit.	1/31/14		Supports are installed now.	4/22/14
43	"Caution" sign is faded on a line across from TK-1901.	B&S	3	Replace the faded sign.	1/31/14	12/30/13	The sign has been upgraded.	1/22/14
44	Leak (liquid puddle) @ Wildon Pump near TK-1903.	B&S	3	Repair the leak.	1/31/14	12/28/13	The leak is repaired.	1/22/14
45	"Caustic" leak on top of the Caustic Tank. Also, the "Danger" sign is faded.	B&S	3	A. Evaluate the cause and clean top of the tank. B. Replace the faded sign.	1/31/14	12/30/13	The Danger sign is upgraded. The lid is cleaned and re-painted. There was no leak, the condensed caustic vapor turned the lid white. Initiated a PM to keep the lid clean.	1/22/14
46	Drain sump is full underneath the Sulfur Tower.	B&S	3	Drain the sump and keep the sump empty.	1/31/14	11/12/13	The sump was drained on the audit day.	12/16/13
47	Car seals are missing on PSV-345 and PSV-516 block valves.	B&S	3	Install the car seals.	1/31/14	11/12/13	Car seals installed on the audit day.	11/12/13

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Item #	Audit Findings	Dept.	Priority #	Recommendations	Due	Done	Status	Accepted by SSRRC
48	A bottle full of liquid is not labeled in the Methanol Drum containment area.	B&S	3	Label the bottle or discard if not needed.	1/31/14	11/13/13	The bottle is removed from the Methanol Drum Containment Area.	12/16/13
49	TK-205 is not grounded and the grounding base is corroded.	B&S	3	Clean the grounding base and ground the tank.	1/31/14	11/13/13	The ground base cleaned and the grounding wire attached to the tank.	12/16/13
50	Pi gage at Glycol Pump (east) is "fogged" up and is not legible.	B&S	3	Replace the PI gage.	1/31/14	12/16/13	The PI gage is removed and plugged, not deemed necessary by the operations.	12/16/13
51	The Shipping Pump, P-203 and Pumps, P-201A/B/C are not grounded.	B&S	3	Ground the P-203 and P-201A/B/C pumps and ensure that all other pumps in the facility are grounded.	1/31/14		Pump P-203 is grounded. P-201 A/B/C are not grounded. Venoco is asking for these pumps they are in Produce Water Service. These pumps are located in the Class Division 2 Area. Curtis Jensen to follow up.	
52	Pump P-201C is not anchored.	B&S	3	Anchor the pump.	1/31/14		Motor shim is bolted now and the pump is bolted to the skid.	4/22/14
53	"H ₂ S" type odor on a walkway near the Tank T-204.	B&S	3	Investigate the source of the odor and remediate.	1/31/14	12/30/13	Checked the area for a week. Could not pick-up any H ₂ S smell.	1/22/14

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54	Broken PI gage @ H-207 on a pilot gas line.	B&S	3	Replace the broken PI.	1/31/14	12/16/13	The PI gage is replaced.	12/16/13
55	"No Smoking" sign at the Loading Rack is faded.	B&S	3	Replace the faded sign.	1/31/14	12/30/13	Removed the "No Smoking" sign since EOF is a "No Smoking" Facility.	1/22/14
56	Faded "Danger" signs on all 12.4 kV Transformers.	B&S	3	Replace the faded signs.	1/31/14		The "Danger" signs are replaced.	4/22/14
57	Two Incident Reports are still open.	B&S	3	Close out all Incident Reports in a timely manner.	1/31/14	1/22/14	Both incidents have been closed.	1/22/14
58	Annual Farwest Inspection & Testing Cathodic Protection Report, dated June 2013 has recommendations that are not addressed.	B&S	3	Address the Farwest recommendations for the Cathodic Protection System.	1/31/14		All EOF recommendations have been addressed.	4/22/14
59	Safety devices inspection and testing records review comments were provided and discussed with J. Dimizio.	B&S	3	Address the comments provided during the audit.	1/31/14	5/1/14	The comments provided during the audit have been addressed.	5/1/14
60	QA/QC documents were reviewed with Bob Van Nostrand. Comments were provided and discussed with Bob Van Nostrand. Number of MTRs for the sour service have higher Sulfur Content than the	B&S	3	Ensure that the sour service equipment (Vessels, piping, etc.) comply with the current (latest edition) NACE MR-01-75 requirements including the Hardness and the Sulfur Content. The NACE MR-01-75, Section 8 requires less than	1/31/14	1/22/14	The QA/QC program is in place to ensure that all future sour service equipment will be in compliance with the current NACE-MR-02-75 requirements.	1/22/14

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	allowed by the NACE MR-01-75.			0.003% Sulfur for Flat Rolled Products; 0.01% Sulfur for Seamless Products and 0.025% Sulfur for the Forged Products.				
61	DOT Manuals are not re-validated for the Hazardous Liquid and Gas Pipelines.	B&S	3	Re-validate the manuals and provide copies of the manuals for review.	1/31/14	4/25/14	The manuals have been submitted for review. Review comments will be followed up with C.Fox	5/23/14
62	John Dimizio is deficient in the Refresher Training for the DOT Procedures.	B&S	3	Provide Refresher Training to John Dimizio to comply with the DOT requirements.	1/31/14	4/16/14	John Dimizio's Refresher Training is current now.	4/22/14
63	Provided and discussed the updates for the Driver/Operator Checklist with Walt McCarty for the LPG/NGL Truck loading, reflecting the current requirements.	B&S	3	Update the Venoco's Driver/Operator Checklist reflecting the current codes.	1/31/14	2/11/14	The Checklist has been updated	4/9/14
64	Monthly Inspection Reports were reviewed and discussed with Walt McCarty. There are number of action Items still	B&S	3	Address the open Action Items and close them in a timely manner.	1/31/14			

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	open.							

*** Priority Legend:**

- 1- Significant potential for serious: personal injury, negative environmental impact, property damage or hazardous material release.
- 2- Moderate potential for serious: personal injury, negative environmental impact, property damage or hazardous material release.
- 3- Low potential for serious: personal injury, negative environmental impact, property damage or hazardous material release.
- 4- Housekeeping and other maintenance items.

2012 VENOCO EOF SIMQAP SAFETY AUDIT MATRIX

#	Audit Finding	Depart .	Priority *	Recommendation s	Venoco Status	Due	Done	Accept SSRRC
1	Four unlabeled compressed air canisters (white color) located next to a sign that read "Breathing Air".	APCD B&S	4	Label compressed air canisters.	Done	2/14/13	12/10/12	1/9/13
2	No emergency or spill response instructions posted next to the diesel fuel pump.	APCD	4	Post instructions in the event of a diesel spill.	Instructions in Oil spill / EAP; complete per 1/17/13 site inspection	2/14/13	11/27/12	1/17/13
3	Spill kit materials are stored in a white trailer (#2) that does not have any signage identifying its contents or purpose.	APCD	4	Post signage on the outside of the trailer to identify that it contains spill kit materials.	Done	2/14/13	12/9/12	1/9/13
4	A 5/8" (or 3/4"?) stainless steel water line located next to V-1201 in the LoCat Area was vibrating against the support structure.	APCD	4	Fasten the water line with a plastic tie-down.	Done	2/14/13	12/7/12	1/9/13
5	A loose bolt (or stud) was observed next to the LoCat Eductor.	APCD	3	Actions taken in the field (nuts tightened to secure the bolt).	Done	1/10/13	11/27/12	1/9/13
6	In the LoCat Area, a number of bolts (studs) were not secured past the nut. This is also the case, throughout in the facility.	APCD OEM B&S	3	Properly secure the bolts at least two threads past the nut.	Procedure written. Will address as flanges are worked on during shutdown and maintenance.	1/10/13	12/14/12	1/9/13
7	Metal piping located next to E-210B requires coating.	APCD	4	Apply surface coating to prevent corrosion.	Done	2/14/13	12/7/12	1/9/13
8	Car seal came off the PSV block valve near V-210A.	APCD	3	Properly fasten car seal to the valve.	Done	1/10/13	12/11/12	1/9/13
9	Metal piping located next to Suction scrubber V-235 requires coating.	APCD	4	Apply surface coating to prevent corrosion.	Done	2/14/13	12/7/12	1/9/13

2012 VENOCO EOF SIMQAP SAFETY AUDIT MATRIX

#	Audit Finding	Depart .	Priority *	Recommendation s	Venoco Status	Due	Done	Accept SSRRC
10	Improperly labeled red container in the hazardous waste area. (Read: Gasoline) (Contained: Lube Oil)	APCD B&S	4	Labels the containers with proper commodity in the Hazmat storage area.	Container removed.	2/14/13	Done	1/9/13
11	Unsecured flammable storage cabinets near H-207.	APCD	4	Recommend securing the cabinets to the fence to prevent them from falling over in the event of seismic event.	The cabinets are now secured.	2/14/13	12/11/12	1/9/13
12	Hearing Protection Sign missing by TK-3103.	OEM	4	Install a sign.	Done	2/14/13	12/5/12	1/9/13
13	5 minutes SCBA bottle by parking area in front of LoCat was last hydro tested 08/01.	OEM	3	Conduct Hydro Test.	Seacorp has removed the bottle for Hydro. Bottle is not in plant.	1/10/13	Done	1/9/13
14	First Aid Kit contained expired ointment.	OEM	3	Ensure that all ointments, eye wash and other liquids are current to prevent possible injury and place inspection of kits on maintenance schedule.	The First Aid Kit contents are all current. Need maintenance schedule; all 1st aid items with expiration dates removed from satellite first aid kits.	3/14/13	3/1/13	3/28/13
15	Anchor bolt missing by filter/separator in LoCat area.	OEM	3	Replace Anchor Bolt.	The anchor bolt is replaced.	3/14/13	3/12/13	3/28/13
16	Vessel V-210 is missing label.	OEM	4	Label with commodity and NFPA.	Done	2/14/13	12/7/12	1/9/13
17	Second Stage Grace unit is Out of Service.	OEM	4	Label OOS so that it can be seen from the road.	Done	2/14/13	12/7/12	1/9/13
18	HazMat waste overflowing and cover is not secure.	OEM COG	4	Dispose and properly store oil filters.	The waste can cover is secured and labeled.	3/14/13	3/1/13	3/28/13

2012 VENOCO EOF SIMQAP SAFETY AUDIT MATRIX

#	Audit Finding	Depart .	Priority *	Recommendation s	Venoco Status	Due	Done	Accept SSRRC
19	Protective chain around Iron Sponge pit was on the ground and not secured.	OEM	3	Repair posts and secure chain to prevent entry into pit.	The chain is secured around the pit.	3/14/13	3/7/13	3/28/13
20	One gallon buckets in LoCat area on concrete is not properly labeled and stored	COG	4	Label and store gallon buckets in a storage locker.	They belonged to contractor from the Shut Down, all removed.	2/14/13	12/17/12	1/9/13
21	Inadequate spill containment at the "Proving Trough". Oil spilling onto ground during sampling.	COG	3	Provide secondary containment or liner on the grounds at the "Proving Trough".	Done. Containment is adequate, again just came off Shut Down. Area is cleaned up	1/10/13	12/14/12	1/9/13
22	Improper storage of florescent tubes on gravel.	COG	4	Properly store and dispose of florescent tubes.	Removed	2/14/13		1/9/13
23	Vessel V-214 has conflicting NFPA identification placards	FIRE B&S	3	Remove placard that does not apply to vessel.	Done; complete per Fire inspection on 12/19/12	1/10/13	12/6/12	12/19/12
24	Conduit not properly supported/secured: A) Vertical riser at P-1512 (> 10') (Lo-Cat) B) Overhead beside stairway near TK-1905 (east of Lo-Cat) C) 3/4" vertical at York skid (near controller) D) 3/4" vertical to fire eye/flame sensor of H-205 incinerator E) Horizontal PVC (water piping) by 1901 (Lo-Cat north wall).	B&S	3	Repair/reinstall clamp/etc.; support/secure conduit per CEC 344.30 (Item E, PVC pipe securing is required at 4' maximum spacing, CPC Table 3-2).	Done	1/10/13	C 3/1/13	A 1/9/13 B 1/9/13 C 3/28/13 D 1/9/13
25	At Inlet Sour Gas Vessel, K-TEK flex conduit fittings are "finger-loose".	B&S	3	Make fittings securely tight, CEC 110.3, 110.12, 300.11.	The fittings are tightly secured.	3/14/13	3/1/13	3/28/13

2012 VENOCO EOF SIMQAP SAFETY AUDIT MATRIX

#	Audit Finding	Depart .	Priority *	Recommendation s	Venoco Status	Due	Done	Accept SSRRC
26	Unused opening at "peckerhead"/J-box of removed P-1512, Sump Pump (Lo-Cat).	B&S	3	Cap/plug all unused electrical equipment openings, remove j-box/cap conduit, CEC 110.12, 501.15.	Done	1/10/13	12/10/12	1/9/13
27	Stop/slow/start switch sign at E-225 is removed from switch cover.	B&S	4	Reinstall switch identifier, CEC 110.22.	Done	2/14/13	12/8/12	1/9/13
28	12"x12" J-box is supported only by raceways at York Skid (by controller).	B&S	3	Install independent J-box support, CEC 314.23.	Done	1/10/13	12/8/12	1/9/13
29	Exterior receptacle cover stays open (broken) at C-train storage container (north side near V-209).	B&S	4	Repair or replace with weatherproof "bubble cover", CEC 406.8(B), 110.3.	Done	2/14/13	12/11/12	1/9/13
30	Fire Eye devices are installed without conduit seal fitting.	B&S	3	Verify devices are arcing style & verify location is "unclassified" or install conduit seal, CEC 501.15.	The Fire Eye is installed with conduit sealing.	1/10/13	12/11/12	3/28/13
31	Rear Gate ESD installed with "site fabricated" cover/guard.	B&S	3	Verify plunger style ESD switch is rated for exterior wet location, replace or provide weatherproof enclosure if necessary, CEC 110.3, 404.4.	The exterior cover is weatherproof.	1/10/13	12/12/12	3/28/13

2012 VENOCO EOF SIMQAP SAFETY AUDIT MATRIX

#	Audit Finding	Depart .	Priority *	Recommendations	Venoco Status	Due	Done	Accept SSRRC
32	Lab has a mixture of explosion-proof wiring methods/devices and standard electrical wiring/devices/equipment.	B&S	3	Verify lab electrical classification and that operations are consistent with CEC Article 500; modify use, conditions, electrical equipment as necessary. Provide Lab Area Classification for review.	Venoco is currently addressing this new issue, and needs additional time to design and implement any required modifications. We suggest a new due date.	6/13/13		
33	Coat the Solution Overflow Line (4") with a corroded Tee and severe surface corrosion. If it is Out of Service, it is not marked OOS.	B&S	4	Coat the line and if it is Out Of Service with the associated equipment, mark them OOS.	Line marked OOS.	2/14/13	Done	1/9/13
34	Car seals are not installed on number of PSV block valves on the K-201 Compressor System (V-205, v-206, V-207, etc.)	B&S	3	Install missing car seals on all PSV block valves in the K-201 system.		1/10/13	12/12/12	1/9/13
35	NFPA label on V-241 is faded.	B&S	4	Replace the faded label.	Done	2/14/13	12/6/12	1/9/13
36	Standing liquids present underneath E-208 and H-202 blower (York Skid).	B&S	4	Remove the standing liquids.		2/14/13	12/12/12	1/9/13
37	Failed coating on V-214.	B&S	4	Coat V-214.	Done	2/14/13	12/6/12	1/9/13
38	The line labeled "Liquids Off NGL-178" from V-214 is missing insulation at two locations. The open spots show chipped insulation.	B&S	4	Repair and replace the insulation on the line.		2/14/13	12/13/12	1/9/13
39	Sump S-201 is Out of Service.	B&S	4	Label the sump OOS.	The Sump is labeled OOS	3/14/13	3/1/13	3/28/13
40	A blue colored drum is not labeled and a rust colored drum has a faded label in the Hazmat storage area.	B&S	4	Label the drum and replace the faded label.	Done	3/14/13	5/13/13	

2012 VENOCO EOF SIMQAP SAFETY AUDIT MATRIX

#	Audit Finding	Depart .	Priority *	Recommendation s	Venoco Status	Due	Done	Accept SSRRC
4 1	The solvent cans (3 gals) are not labeled in the lab.	B&S	4	Label the chemical solvent cans in the lab.	Done	2/14/13	12/6/12	1/9/13
4 2	The incident reports are not closed out and complete.	B&S	3	Close out complete the Incident Reports.	Done	1/10/13	12/10/12	
4 3	The checklists provided under General Work Permit and Hot Work Permit are generic in nature and not project specific.	B&S	3	A project specific Job Safety Analysis (JSA) should be conducted that may include the generic checklist. OSHA 3071 2002 (Revised) provides details and guidelines for the JSA (or JHA- Job Hazard Analysis).	Our existing permit system is sufficient per applicable codes. City letter dated 3/11/13 recommends Venoco institute a JSA program.	1/10/13	12/18/12	3/14/13
4 4	The five operators are due for the Operator Refresher Training	B&S	3	Provide Operator Refresher Training to the operators.	The training records are up to date for the Operators Refresher Training.	1/10/13	12/17/12	3/28/13
4 5	3" isolation block valve on PSV-150 is inoperable.	B&S	3	Replace or repair the block valve.	Need to wait till next S/D for 2013. Include it in the Shut Down list.	1/10/13	11/27/12	1/9/13
4 6	PSV-325 has a leaky isolation block valve.	B&S	3	Repair or replace the leaky block valve.	Venoco will have the block valve changed out when they will put K-201 back in service. K-201 is currently not being used.	1/10/13	11/27/12	1/9/13

2012 VENOCO EOF SIMQAP SAFETY AUDIT MATRIX

#	Audit Finding	Depart .	Priority *	Recommendation s	Venoco Status	Due	Done	Accept SSRRC
47	The current checklist (revised in 2011) is not used for the Tank Truck Loading of NGL & LPG.	B&S	3	Replace the check list with the revised (current) checklist and train the operators. Also, update the SIMQAP binder.	Done	1/10/13	12/18/12	1/9/13
48	EOF Refresher Operator Training Record Form does not include the Line 96 operation.	B&S	3	Update the Operator Refresher Training Record Form to include the Line 96 operation. Update the SIMQAP binder.	Completed	2/14/13	1/10/13	1/10/13
49	The safety devices testing records were reviewed and the comments were provided and discussed with J. Dimizio.	B&S	3	Address the safety devices records review comments.	Completed	2/14/13	1/10/13	1/10/13
50	Semiannual Cathodic protection Survey has not been conducted.	B&S	3	Conduct the survey which is due now and provide copy for review.	Cathodic protection survey is due to be done annually. The 2012 annual survey was conducted in May 2012, and is still current. This finding should be removed.	3/14/13	11/27/12	3/14/13
51	DOT Oil & Gas Pipelines Manuals including the PSOM have not been updated and revalidated.	B&S	3	Update and revalidate the manuals and provide copies for review.	In progress, with new pipeline coordinator.	6/13/13		

2012 VENOCO EOF SIMQAP SAFETY AUDIT MATRIX

#	Audit Finding	Depart .	Priority *	Recommendation s	Venoco Status	Due	Done	Accept SSRRC
5 2	<p>QA/QC review of the projects identified the following deficiencies:</p> <p>A. Sulfur contents of the materials do not comply with the NACE-MR-0175 requirements for the sour service</p> <p>B. Welder Qualification Records do not show current validity as required by the code</p> <p>C. Missing charts for the hydrostatic tests.</p>	B&S	3	<p>A. Comply with the NACE-MR-0175 requirements for the Sulfur Content for Flat Rolled 0.003% max, for Seamless 0.01% max and for Forging & Casting 0.025% max.</p> <p>B. Require contractors to provide the proper welding documents complying to the requirements.</p> <p>C. Require contractors to use and provide the charts for the hydrostatic tests.</p>	<p>A. Venoco has sent letters to the contractors to comply to this requirement.</p> <p>B. Only one contractor is deficient . Venoco is working with this contract or to correct errors. In the meantime, this contract or is barred from working at EOF.</p> <p>C. One QA/QC was missing hydrostatic test charts. Contract or has been advised and agreed to provide charts in future work.</p>	1/10/13	<p>A. 12/11/12</p> <p>B. 1/9/13</p> <p>C. 1/9/13</p> <p>A. 12/12/12</p> <p>B. 1/9/13</p> <p>C. 12/14/12</p>	<p>A. 12/11/12</p> <p>B. 1/9/13</p> <p>C. 1/9/13</p>

2012 VENOCO EOF SIMQAP SAFETY AUDIT MATRIX

#	Audit Finding	Depart .	Priority *	Recommendation s	Venoco Status	Due	Done	Accept SSRRC
53	Monthly facility inspections have outstanding open items since January 2012.	B&S	3	Follow up and close out the open items in a timely manner.	Old open items closed out.	3/14/13	3/12/13	3/28/13
54	NDT inspections reports have number of outstanding items still not addressed.	B&S	3	Address and close out the outstanding items in a timely manner.	Venoco has made a significant progress in addressing the action items.	6/13/13		

2011 VENOCO EOF SIMQAP Audit Matrix

#	Audit Finding	Dept.	Priority*	Recommendations	Status	Due	Done	Accepted SSRRC
Ellwood Onshore Facility (EOF)								
1	Diesel Fire Pump not operating to standard per "Annual Fire Pump Acceptance Test"	FIRE	2	Repair or replace engine or entire pump & engine unit as noted on Joy Equipment Protection Inc. Invoice	Completed	11/1/11	11/1/11	11/3/11
2	Signage for entering a hazardous area not visible	OEM	3	Move so that sign is visible before entering area	Completed	1/12/12	3/8/12	3/8/12
3	V-1203 Missing Name Plates	OEM	3	Replace Name Plates	Deleted	1/12/12	Deleted	Deleted
4	NFPA label faded or missing in the following areas: OOS in LoCat area, E225, E210B, TK 207, TK8265	OEM	3	Replace labels	Completed	1/12/12	12/7/11	12/7/11
5	HazWaste container on Chemical Storage dock has label which is not completed	OEM	3	Fill out label	Completed	1/12/12	12/7/11	12/7/11
6	Chemical Storage dock contains flammable wood railroad tie	OEM	3	Replace wood railroad tie in Chemical Storage dock with non-flammable material		1/12/12		2/9/12
7	SCBA #6 missing current inspection information	OEM	3	Include current inspection information		1/12/12		2/9/12
8	Cable Gland doesn't seal to cable at Total Flow Meter by V-1203.	B&S	3	Replace with proper cable gland, CEC 110.3, 314.17(A).	Completed	1/12/12	11/29/11	11/29/11
9	Opening to conduit body due to broken gasket at Pump M-2402.	B&S	3	Replace gasket to seal fitting, CEC 110.3,	Completed	1/12/12	5/10/12	5/10/12
10	Lo-cat corrosion: raceways, supports, bonding conductors & lugs.	B&S	3	Visual survey to identify potential maintenance needs, CEC 500.8, 300.6. Repair/replace as necessary.	Completed	1/12/12	11/29/11	11/29/11
11	PVC conduit jacket deteriorated, ½" FMLC for 5 HP oil pump at K-206 gas compressor.	B&S	3	Replace, CEC 501.10, 350.10, 110.12.	Completed	1/12/12	11/29/11	11/29/11

2011 VENOCO EOF SIMQAP Audit Matrix

#	Audit Finding	Dept.	Priority*	Recommendations	Status	Due	Done	Accepted SSRRC
12	Conduit seal fitting at K-206 Cooling Fan Switch is not identified as being poured/sealed.	B&S	3	Confirm requirement for conduit seal, CEC 501.15	Completed	1/12/12	11/29/11	11/29/11
13	Conduit seal fitting is missing at V-231 Temperature instrument.	B&S	3	Install required seal as specified on the instrument, CEC 501.15.	Completed	1/12/12	11/29/11	11/29/11
14	Open/exposed wiring connections are in the classified hazardous area at V-209, Amtek temp. gauge	B&S	3	Correct with a hazardous location approved wiring method, CEC 501.10.	Completed	1/12/12	11/29/11	11/29/11
15	Open 2" conduit, at overhead above TK-3101	B&S	3	Cap/plug opening, CEC 501.10, 500.7.	Completed	1/12/12	11/29/11	11/29/11
16	PSV-365 block valve is not Car Sealed Open (CSO).	B&S	3	CSO the block valve.	Completed	1/12/12	12/7/11	12/7/11
17	Tank, T-206 is not grounded.	B&S	3	Ground T-206.	Completed	1/12/12	7/10/12	7/10/12
18	York skid has standing liquids.	B&S	3	Remove the standing liquids.	Completed	1/12/12	12/7/11	12/7/11
19	Sump(S-201) near the loading rack is full with liquids and is on the verge of overflowing.	B&S	3	Remove liquids from the sump.	Completed	1/12/12	12/7/11	12/7/11
20	Conduct biennial motor carrier survey.	B&S	3	Ellwood Flammable Liquids Transportation Safety Program (EFLTSP) Risk Prevention Plan requires biennial survey. The past surveys have not been submitted to the county for review.	Under Review	1/12/12	12/3/12	12/3/12
21	The fence H2S detector calibration gas expiration date could not be verified.	B&S	3	Confirm the validity of the calibration gas.	Completed	1/12/12	3/8/12	3/8/12
22	PSV-150 isolation valve does not close.	B&S	3	Replace/repair the isolation valve.	Deleted	1/12/12	Deleted	Deleted
23	PSV-325 is leaking.	B&S	3	Repair the PSV.	Completed	1/12/12	3/8/12	3/8/12

2011 VENOCO EOF SIMQAP Audit Matrix

#	Audit Finding	Dept.	Priority*	Recommendations	Status	Due	Done	Accepted SSRRC
24	The MOC document does not include detail description including the reason(s) why the change is warranted.	B&S	3	Provide detail description for the MOCs.	Deleted	1/12/12	Deleted	Deleted
25	All QA/QC Packages – The Welding Procedure Specifications, (WPSs), Procedure Qualification Records (PQRs) and Welder Qualification Records do not show current code compliance. Number of MTRs do not meet the Sulfur requirements for flat rolled, seamless and forged materials.	B&S	3	Some of the specifications show compliance with 1995 ASME Section IX. Verify and update all specifications and records confirming that they comply with the current codes. Ensure that the MTRs meet the NACE requirements of 0.003% Sulfur for Flat Rolled, 0.01% Sulfur for Seamless and 0.025% Sulfur for Forged materials.	Completed	1/12/12	5/10/12	5/10/12
26	QA/QC: V-1201 Repair-Overlay weld metal build up The welding overlay maps are not legible. WQR for Efrain Carbajal is not signed. Also, It references 1995 ASME Section IX and not the current code. .	B&S	3	Include legible overlay maps (from IESCO) in the QA/QC package. Update WQR.	Completed	1/12/12	5/10/12	5/10/12
27	QA/QC: V-1203 Repair-Overlay weld metal build up The welding overlay maps are not legible. WQR for Napoleon Barber references 1995 ASME Section IX and not the current code.	B&S	3	Include legible overlay maps (from IESCO) in the QA/QC package. Update WQR.	Completed	1/12/12	5/10/12	5/10/12

2011 VENOCO EOF SIMQAP Audit Matrix

#	Audit Finding	Dept.	Priority*	Recommendations	Status	Due	Done	Accepted SSRRC
28	The DOT and PSOM Oil & Gas Pipeline manuals are not revalidated for 2011.	B&S	3	Revalidate the DOT and PSOM manuals and submit the revisions for review.	Completed	1/12/12	5/10/12	5/10/12
29	The NDT inspections recommendations need to be prioritize and implemented.	B&S	3	Provide prioritization and implementation schedule matrix for review.	Completed	1/12/12	5/10/12	5/10/12

Ellwood Marine Terminal Facility (EMT)

No audit items were noted for the EMT

Appendix L

HISTORY OF WETLAND MITIGATION PERFORMED FOR IMPACTS CAUSED BY THE PRC 421 ACCESS ROAD

Final January 2003

State Lease 421 Wetland Mitigation Plan

**Pursuant to SBCO Development Permits
01DVP-0000-00040 and 01CDP-00000-00149**



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**State Lease 421 Wetland Mitigation Plan
 SBCO EMERGENCY PERMIT (00-EMP-006 [RV01])
 CALIFORNIA COASTAL COMMISSION EMERGENCY PERMIT (E-01-027-G)**

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Appendices

- Appendix 1. California Coastal Commission 12/4/02 Draft Wetland Mitigation Plan Review Letter**
- Appendix 2. County of Santa Barbara 12/11/02 Draft Wetland Mitigation Plan Review Letter**
- Appendix 3. Enlarged Map of Wetland Mitigation Area Showing Locations Where Rodeo® Must Be Used**

1.0 INTRODUCTION

This final plan was prepared by Watershed Environmental under contract to Venoco, Inc., and incorporates comments received from the County of Santa Barbara Energy Division and California Coastal Commission (Appendices 1 and 2) on the October 2002 Draft Wetland Mitigation Plan. The plan describes wetland mitigation measures that will be implemented along the lower portion of Bell Creek (Figure 1) by Venoco as compensation for wetland impacts incurred during performance of emergency repairs to the 421 Lease oil wells, piers, and access road.

1.1 Background Information

In January and April of 2001, 0.04 acres (1,566 sq. ft.) of coastal salt marsh wetlands were destroyed during emergency repairs to the access road serving the 421 Lease. There were three isolated wetlands affected: 1) 335 sq. ft. on the access road west of SL 421-1; 2) 140 sq. ft. on the access road west of SL 421-1; and 3) 1,107 sq. ft. at the eastern end of the access road immediately north of SL 421-2.

Compensatory mitigation to offset the permanent loss of these wetlands was required by the permitting agencies (County of Santa Barbara, California Coastal Commission, and U.S. Army Corps of Engineers) responsible for implementing the provisions of the California Environmental Quality Act, California Coastal Act, and U.S. Clean Water Act. The County of Santa Barbara was the lead agency until February 1, 2002 when the City of Goleta became incorporated and assumed the lead agency role. Currently, the Energy Division, under contract to the City of Goleta, is providing local agency oversight. The permitting agencies imposed the following wetland mitigation ratios for the different impacted wetlands: 3:1 for the two wetlands on the access road west of SL 421-1 and 5:1 for the wetland at the eastern end of the access road immediately north of SL 421-2. Table 1 contains a summary of impacted wetlands and required mitigation.

Table 1. Summary of Impacted Wetlands and Required Mitigation

Affected Wetland	Mitigation Ratio	Mitigation Area
335 sq. ft. on the access road west of SL 421-1	3:1	1,005 sq. ft.
140 sq. ft. on the access road west of SL 421-1	3:1	420 sq. ft.
1,107 sq. ft. immediately north of SL 421-2	5:1	5,535 sq. ft.
Total Mitigation Area		6,960 sq. ft.

A vegetation and wetland survey was performed prior to performance of the emergency repairs (URS Corporation 2001). Plants present in the impacted wetlands were: rabbitsfoot grass (*Polypogon monspeliensis*), saltmarsh sand spurrey (*Spergularia marina*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), Bermuda grass (*Cynodon dactylon*), cattail (*Typha latifolia*), African brass-buttons (*Cotula coronopifolia*), and saltgrass (*Distichlis spicata*).

Upland vegetation adjacent to the wetlands included: saltbush (*Atriplex lentiformis*), coyote brush (*Baccharis pilularis*), California bush sunflower (*Encelia californica*), cliff aster (*Malacothrix saxitalis*), sawtooth goldenbush (*Hazardia squarrosa*), and a variety of ruderal vegetation. Ruderal species included black mustard (*Brassica nigra*), castor bean (*Ricinus communis*), fennel (*Foeniculum vulgare*), and iceplant (*Mesembryanthemum nodiflorum*).

Reserve Page

Figure 1. Location Map

The impacted wetlands appeared to receive water from groundwater seepage, presumably enhanced by irrigation of the Sandpiper Golf Course on top of the bluffs. The largest impacted wetland was on a small platform below a break in the bluffs, where water became impounded behind a low berm at the edge of the road. These wetlands were probably created by human modification of the bluff area, including alteration of hydrology through golf course irrigation runoff and the placement of an impervious surface (i.e., the road bed) along the base of the slope. The primary functions of the impacted wetlands were: 1) limited retention of surface runoff, 2) reduction of nutrient levels in run-off, and 3) habitat for a few native plants, including cattails, saltgrass, cliff aster, and saltmarsh sand spurrey. With the exception of these three species, the other plants occurring in these wetlands were non-native. These disturbed and isolated wetlands were unlikely to provide quality habitat for animal species of conservation concern.

1.2 Site Selection

A concerted effort from May to August 2001 was made by Venoco, Inc. and Watershed Environmental to find an in-kind coastal salt marsh restoration site. We contacted the County Public Works Department, the County Water Agency, County Flood Control, the Southern California Wetland Recovery Project, the California Department of Fish and Game, the University of California, the Land Trust of Santa Barbara County, the Goleta Slough Ecosystem Management Committee, La Cumbre Mutual Water Company, and the owner of the Ocean Meadows Golf Course. None of these was able to help locate a site with the hydrogeomorphic characteristics necessary to establish salt marsh vegetation or an existing restoration project that Venoco could expand upon to fulfill their wetland mitigation requirement.

As a result of this failure to locate an in-kind mitigation site, and following conversations with the County Energy Division and Coastal Commission, Venoco and Watershed Environmental selected a riparian habitat mitigation site along the lower portion of Bell Creek, adjacent to the Venoco Ellwood Gas Processing Plant (Figure 2). This site includes a riparian revegetation area and a weed abatement area. Site selection was based on five factors:

1. Close proximity to impacted wetlands
2. Co-occurrence of some plant species from impacted wetlands
3. Access and availability
4. Adjacency to another mitigation site
5. Opportunity to improve wetland functions

The Bell Creek restoration site has significantly higher ecological value than the original impacted wetlands, but it is currently highly degraded and infested with a dense cover of non-native weeds, including fennel, castor bean, and German ivy (*Senecio milanioides*, now *Delairea odorata*). A few native plants persist embedded in the matrix of weedy exotics, including blackberry (*Rubus ursinus*) and clematis (*Clematis lasiantha*).

Restoration and revegetation at the Bell Creek site will provide quality habitat for species of conservation concern and will enhance biogeochemical functioning with deeper soils to help retain nutrients and allow infiltration of floodwater. Two species listed under the Endangered Species Act are known in the Bell Creek watershed: tidewater gobi and red-legged frog. Both will benefit from improvements to the riparian zone. Neither uses the type of wetland originally impacted.

Figure 2. Wetland Mitigation Site

This restoration will also complement ongoing restoration by the Bacara Resort just north of the Venoco restoration site. Together, these projects will restore a continuous riparian zone between the frontage road and the Bell Creek estuary. Reserve Page

1.3 Mitigation Goal and Objectives

The wetland mitigation goal is:

To ensure that no net loss of wetlands occurs as a result of the Venoco 421 Lease emergency repairs.

This will be accomplished by restoration of 7,000 sq. ft. of riparian habitat and performance of habitat enhancement measures in an adjacent 34,800-sq.-ft. area along the lower portion of Bell Creek. Existing non-native vegetation will be removed and replaced with native (i.e., naturally occurring) riparian vegetation in the riparian restoration area. Weed abatement measures will be performed in the habitat enhancement area.

The mitigation objectives are:

- ***Remove non-native vegetation***
- ***Improve soil conditions and prevent the reestablishment of weeds with the addition of organic mulch***
- ***Permanently establish self-sustaining native riparian vegetation***
- ***Improve the hydrologic, biogeochemical, plant habitat, and animal habitat functions***

2.0 EXISTING CONDITIONS AT MITIGATION SITE

2.1 Topography

The riparian revegetation mitigation area is approximately 350 ft. long by 20 ft. wide (7,000 sq. ft.). The site is bordered to the east by a gravel access road serving Venoco's 421 Lease and dense arroyo willow riparian forest vegetation along the western boundary (refer to Figure 2). The topography gently slopes to the west toward Bell Creek. The elevation within the mitigation area is approximately 20 ft. above mean sea level and has very little topographic relief other than a berm created by the gravel access road.

The weed abatement area is approximately 34,800 sq. ft. in size and is located to the north of the riparian revegetation area between the gravel access road, the frontage road bridge, and arroyo willow riparian forest vegetation on the eastern bank of Bell Creek (refer to Figure 2). The area surrounds the 10,200-sq.-ft. Bacara Resort mitigation/revegetation area, but does not include it. Topographically, the area is similar to the riparian revegetation mitigation area.

2.2 Vegetation

Existing vegetation within the riparian revegetation area is predominantly fennel, castor bean, and German ivy. The castor bean plants are tree like and are draped with German ivy vines. Fennel is growing along the edge of the gravel access road and in portions of the revegetation area not shaded by castor bean. There are a few isolated native shrubs growing in the revegetation area, including saltbush, blackberry, and clematis.

The vegetation in the weed abatement area is primarily non-native grassland, with a few large coast live oak trees and western sycamore trees. Weeds in the area include periwinkle (*Vinca major*) and garden nasturtium (*Tropaeolum majus*).

2.3 Hydrology

The riparian revegetation and weed abatement areas are located within the 100-year flood plain of Bell Creek. However, the area is expected to flood only during extreme storm events. The site also receives surface water runoff (sheet flow) from upland areas to the east, including the gravel access road. The site does not receive any surface water runoff from the gas processing plant or Sandpiper Golf Course. Given its proximity to Bell Creek, the site is expected to have relatively shallow groundwater (within 6-10 ft of the surface).

2.4 Soils

The US Department of Agriculture Soil Conservation Service mapped the soils in the project area as part of the Milpitas-Positas-Concepcion association (USDA 1977). This soil is usually associated with coastal marine terraces in Santa Barbara County. However, the soils in the riparian revegetation area are substantially degraded and mixed with a large fraction of coarse gravel washed in from the adjacent gravel road and previous disturbances. The soils in the weed abatement area were not sampled, but presumably were disturbed when the frontage road, train tracks, and 101 Freeway were constructed.

2.5 Land Use & Ownership

The Bacara Resort currently owns the mitigation site and is zoned for recreational use by the City of Goleta (SBCO 1993). Venoco has entered into a long-term agreement with Bacara to utilize the site for wetland mitigation. This use is compatible with City zoning and Bacara's wish to beautify the property. The Bacara Resort will be notified prior to initiating this project so that they are aware that work will be taking place in their easement and so they will understand the objectives of this project.

2.6 Hydrogeomorphic Functional Assessment

The US Army Corps of Engineers has developed a methodology to assess the hydrogeomorphic functions of riverine wetlands (Brinson et al. 1995). This methodology places riverine wetland functions into four major categories: 1) hydrologic, 2) biogeochemical, 3) plant habitat, and 4) animal habitat. This section provides a qualitative comparison of the existing functions in the riparian mitigation area to the anticipated functions following completion of the wetland mitigation measures by Venoco.

The existing hydrologic functions are severely degraded due to the lack of ground cover vegetation, low organic content of the soil, and presence of road gravel, which reduces the area's ability to provide dynamic and long-term surface water storage, energy dissipation, and moderation of groundwater flow or discharge. Implementation of the riparian revegetation measures includes the addition of organic matter (mulch) to the soil surface and installation of ground cover vegetation. Together these two measures will greatly improve the hydrologic functions of the area.

Biogeochemical functions include nutrient cycling, removal of imported elements and compounds, retention of particulates, and organic carbon export. Existing site conditions are only providing a low level of nutrient cycling and export of organic carbon. This is due to the poor vegetation cover (particularly ground cover) and lack of dense woody vegetation. Riparian revegetation will include the removal of the weeds currently on the site, mulching with organic matter, and planting of native riparian tree and ground cover species. The vegetation plantings and mulch will improve the overall biogeochemical functions of the site.

Plant habitat functions include maintenance of characteristic plant communities and detrital biomass. The existing non-native vegetation in the riparian mitigation site is not providing any of these plant habitat functions, but installation of native plants will remedy the situation.

Animal habitat functions include maintaining spatial structure of habitat, interspersed and connectivity, and the distribution and abundance of invertebrates and vertebrates. The existing habitat in the riparian mitigation area is not providing any of these animal habitat functions due to the dominance of non-native vegetation. Removal of non-native vegetation and revegetation with native species will provide the animal habitat functions that are currently missing from this site.

3.0 PROPOSED MITIGATION

3.1 Riparian Habitat Restoration & Enhancement

The proposed mitigation involves a combination of habitat restoration and enhancement measures. Habitat restoration to reestablish wetlands will be performed in the 7,000-sq.-ft. riparian revegetation area. Habitat enhancement to improve habitat conditions will be performed in the 34,800-sq.-ft. weed abatement area.

The habitat restoration area is adjacent to existing arroyo willow riparian habitat and is believed to have been riparian habitat historically. The area has a long history of human disturbance beginning with the construction of the railroad, Highway 101, oil and gas exploration in the 1920s and 1930s, construction of the gas processing plant in 1964, and construction of Sandpiper Golf Course in 1972. The suitability of this site for habitat restoration is evinced by its degraded conditions and high potential for improvement and connection to another mitigation/revegetation area.

3.2 Site Preparation and Weed Abatement

Riparian Revegetation Area

The riparian restoration site will be cleared of non-native weed species using a combination of: (1) hand removal, (2) cutting and mowing, and (3) application of chemical herbicides (RoundUp[®]/Rodeo[®]) at recommended concentrations. Rodeo[®] shall be used in areas within 50 ft. of the creek edge and RoundUp[®] in areas further than 50 ft. from the creek. Appendix 3 contains an enlarged map of the mitigation area depicting locations where Rodeo[®] must be used. Desirable native species (e.g., blackberry, clematis, and willow) will be marked by a biologist and avoided during the initial weed removal process.

All herbicide application will be by a licensed applicator who is knowledgeable of and

experienced in the proper use of herbicides near aquatic environments. No herbicides are to be used if there is a reasonable probability of rain in a 24-hour period following the desired application of herbicides. A "reasonable probability" of rain would be defined as a 20% or more chance of rain or showers for the Goleta area, according to the National Weather Service's local office forecast.

Castor bean, fennel, and German ivy are abundant on the site. These are well documented as aggressive weeds and classified as invasive exotics by the California Exotic Pest Council (1999). Special steps should be taken to ensure their removal and prevent their reoccurrence.

Caster bean plants on the site are mature, reaching over 9 ft. in height with thick stems. These plants will be removed manually by cutting them to the ground (using hand- and chainsaws) and treating stumps with 2% RoundUp® (glyphosate) to prevent resprouting. The soils in the restoration site are covered and presumably permeated with caster bean seeds. The best available strategy to prevent their reestablishment involves a combination of a pre-emergent herbicide treatment (diphenamid [Enide®] or benfen [Balan®]) to prevent seeds from germinating and a thick cover of mulch. The mulch layer will enhance the degraded soils on the site, and work in tandem with the pre-emergent treatment to inhibit weed establishment. This treatment requires that all restoration planting be shrubs and other mature vegetation.

Fennel (*Foeniculum vulgare*) is a difficult weed to remove. Plants within the restoration area will be treated with a foliar application of Garlon 4® (triclopyr). New fennel growth will be spot-treated with a concentration of 6 lbs. Garlon 4® mixed with 100 gallons of water. Depending on the timing of the restoration, this might involve either application during the primary spring growth or to regrowth following initial clearing. Garlon 4® is an oil-soluble herbicide and will be mixed with a colored dye that allows applicators to determine which plants have been treated.

German ivy is a perennial climbing vine that infests native vegetation by crowding, shading, and ultimately smothering desirable plants. Bell Canyon provides German ivy's preferred habitat: shady, disturbed sites with year-round moisture (e.g., stream banks). German ivy spreads easily, since fragments as short as one inch can be carried by runoff or landscaping machinery, take root, and infest new areas. The presence of ivy in riparian areas can lower plant diversity, change vegetation structure, and reduce rates of nutrient cycling (Alvarez 1997). Ivy will be removed following guidelines in *Invasive Plants of California's Wildlands* (Bossard et al. 2000): (1) manual removal of vegetation to access areas where ivy is emerging from the ground, (2) carefully removing roots and stems using a pointed or three-pronged rake to loosen soil, (3) ivy waste will be put into plastic bags with a small amount of soda lime to accelerate decomposition, (4) any resprouts will be treated with a foliar spray of 0.5% RoundUp® plus 0.5% Garlon 4® plus 0.1% Silwit® (silicone surfactant) at a rate of approximately 6.4 l/hectare. The chemical treatment is more effective when applied in the late spring after the plant has already flowered but is still growing actively. Care should be taken in the application of these chemicals to follow label instructions and avoid contamination of surface water.

Weed Abatement Area

Additional weed abatement will be conducted between the restoration site and the Bell Creek Bridge except in the 10,200-sq.-ft. Bacara mitigation area. A County-approved biologist will flag native plants for avoidance in this area, particularly oak seedlings and blackberry. The preliminary field assessment indicates that the most common non-native weeds are German ivy, periwinkle, and nasturtium.

Periwinkle and nasturtium will be removed by first cutting the vegetation with a weed-whip and then spraying a 5% solution of RoundUp® or Rodeo® on the fresh-cut plants. Rodeo® shall be used in areas within 50 ft. of the creek edge and RoundUp® in areas further than 50 ft from the creek. Appendix 3 contains an enlarged map of the mitigation area depicting locations where Rodeo® must be used.

In the following late spring or early fall the landscape contractor will collect goldenbush, saltbush, and cliff aster seeds from within the 421 Lease area. The landscape contractor will then hand broadcast the seeds in the weed abatement area.

3.3 Planting Pallet & Seed Source

All new vegetation will be planted as shrubs to allow for deep mulching and the application of the pre-emergent herbicide. Planting sites will be field-sited by the biologist using color-coded flags. Plantings will be designed to incorporate suitable species found in the impacted wetlands and characteristic riparian vegetation. Impacted species such as saltbush (*Atriplex lentiformis*), and cliff aster (*Malacothrix saxatilis*) will be planted on the relatively dry, well-drained upland edge of the restoration site. Further downslope, plantings will include arroyo willow (*Salix lasiolepis*), and sycamore (*Platanus racemosa*), with a groundcover of blackberry (*Rubus ursinus*), mugwort (*Artemesia douglasiana*), and wild rose (*Rosa californica*). Table 2 contains a summary of quantities to be planted. The plant materials will be provided by Growing Solutions, a local supplier specializing in providing native plants for restoration projects. All plant materials (cuttings and seeds) are from the Santa Barbara South Coast area.

Table 2. Plant List-Riparian Revegetation Site

Common Name	Scientific Name	Size (gal)	Quantity
Trees (quantity base on 15-20-ft. spacing)			
arroyo willow	<i>Salix lasiolepis</i>	1	35
arroyo willow	<i>Salix lasiolepis</i>	2	10
western sycamore	<i>Platanus racemosa</i>	3	8
western sycamore	<i>Platanus racemosa</i>	15	2
Subtotal Trees			55
Shrubs (quantity based on 20% shrub cover assuming a 3 ft. diameter)			
blackberry	<i>Rubus ursinus</i>	1	40
blackberry	<i>Rubus ursinus</i>	2	10
wild rose	<i>Rosa californica</i>	2	50
mugwort	<i>Artemesia douglasiana</i>	1	60
saltbush	<i>Atriplex lentiformisbreweri</i>	5	10
saltbush	<i>Atriplex lentiformisbreweri</i>	1	10
cliff aster	<i>Malacothrix saxatilis</i>	2	20
Subtotal Shrubs			200

Cages will be constructed of hardware cloth (1 ft. x 2 ft.) for all herbs and shrubs to protect them from rabbits and ground squirrels (Figure 3). Approximately 255 plants will require anti-herbivore cages. These cages will be held in place with two staples each. Trees and large woody shrubs will have two slow-release fertilizer tabs placed in the bottom of each planting hole. Upon completion of installation, all plants will be deep watered.

3.4 Planting Specifications

The following planting specifications will be followed:

- 1) Dig holes with posthole digger or auger—field test. Dig at least 1 ft. deeper than the plant container.
- 2) Place two Gro-tabs® in bottom of hole.
- 3) Add mulch to soil in bottom of planting hole.
- 4) Install root cage and backfill to depth of pot.
- 5) Pre-soak planting hole.
- 6) Install plant, filling hole with pulverized native soil.
- 7) Water plant.
- 8) Install anti-herbivore cage using 2 staples to tack down.
- 9) Place mulch (minimum thickness 6 inches) over entire riparian reveg. area.
- 10) Replace pin flag next to plant.

3.5 Planting Locations

Planting sites will be field-sited by a botanist/plant ecologist using color-coded flags. Tree planting (arroyo willow, western sycamore) will be spaced 15-20 ft. apart to allow for future growth. Understory shrubs (wild rose, mugwort, and blackberry) will be planted in groupings of the same species and will be spaced 3-5 ft. apart. A few upland species (saltbush and cliff aster) will be planted along the edge of the gravel road to provide transitional habitat.

3.6 Maintenance

Planting will occur in January/February 2003 to take advantage of winter rainfall. The watering schedule will be adjusted to consideration of climatic conditions. We recommend that supplemental watering be performed once a week until plants are established, or for 3-4 months. To facilitate this, a temporary drip irrigation system will be installed on the site, drawing water either from the Venoco facility or an extension of existing irrigation infrastructure from the adjacent restoration area. After establishment, the frequency of watering should be decreased to biweekly until the beginning of the rainy season (November) or when natural rainfall becomes adequate. The heavy mulch may allow for less-frequent watering of the plants, to be determined by the landscape contractor. Second-season watering may or may not be required depending on the amount of rainfall received that winter.

We anticipate that some minor weed removal will be required in the riparian revegetation area to aid establishment of the newly installed plants during the maintenance period and that this work will be performed once a month for the first 3-4 months and every other month thereafter until the end to the first year. After the first year, weed eradication will be performed twice a year in the spring and fall. Weed eradication in the weed abatement area will be performed quarterly for the first year after initial planting and twice a year in the spring and fall of the second year. No follow-up weeding or maintenance will be performed in this area.

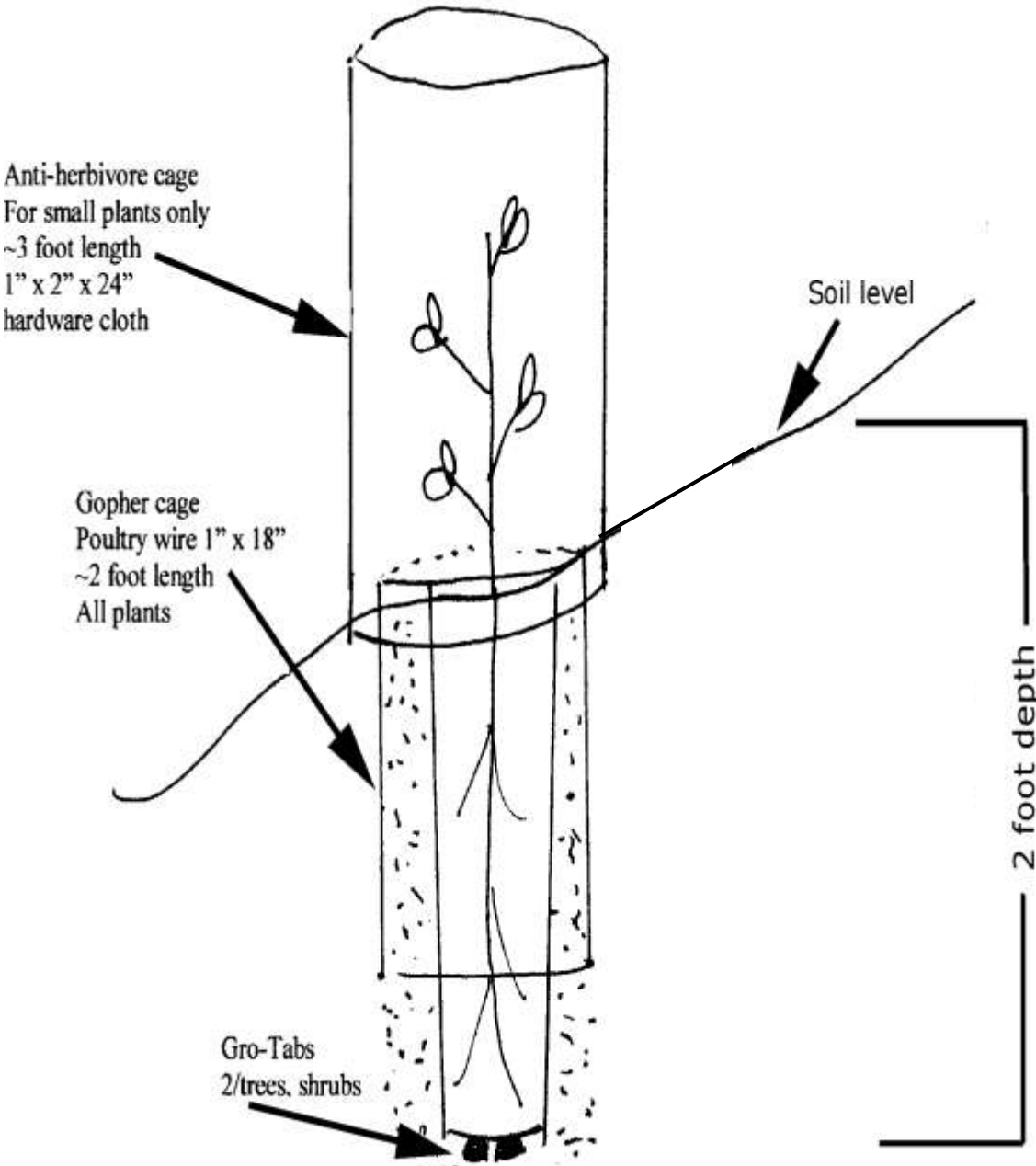


Figure 3. Tree and Shrub Planting Diagram

3.7 Access Restrictions, Ownership & Easements

We do not anticipate the need to protect the site from public encroachment. The only access to the site is via the 421 Lease access road, which is gated to prevent unauthorized access, or through the Venoco Ellwood Gas Processing Plant. As previously mentioned, the site is zoned for recreational use and is protected from future development. The Santa Barbara County Coastal Plan also prohibits development within 100 ft. of a wetland. The only other easements and/or activities that could potentially affect the site are flood control maintenance activities. The Santa Barbara County Flood Control Department shall be notified of the wetland mitigation area to prevent inadvertent damage to the site.

3.8 Project Schedule

Venoco, Inc. is committed to securing the resources necessary to implement the plan as soon as it is approved by the agencies. Ideally, site preparation work and weed eradication could be performed this fall and the plantings installed this winter after the first good (i.e., greater than ¾-in.) rain of the season. We anticipate that maintenance activities will need to be performed once a month for the first 3-4 months and bi-monthly until the end of the first year. We recommend that additional and replacement plantings be installed in spring of 2003 as part of a follow-up maintenance contract. This work would also include the addition of mulch as necessary, and supplemental weeding in the early spring, late spring, and fall. Weed eradication in the weed abatement area will be performed for a period of two years following the initial weed removal. Weed eradication in the riparian revegetation area will be performed twice a year until successful attainment of the performance goals is met, or unless deemed unnecessary by the Energy Division monitoring biologist.

4.0 PERFORMANCE STANDARDS

Performance standards are the measure of how well a project is meeting the goals and objectives of the program and/or plan. The goal of the restoration site is to provide a significant weed-free period during which the native species will be able to increase in cover significantly enough to become dominant. This goal of zero percent cover of weeds during the monitoring period should be attainable and will likely provide the necessary level of success for the mitigation site.

4.1 Trees & Shrubs

Trees shall have a minimum survival of 85% after the first year. Should survival be less than 85%, additional plantings will be installed during the second year to bring the total number of tree plantings up to 85% of the total number originally planted. Replantings need not be of the same species as were lost, provided they are chosen from among the native species used in this study. After the second year, tree survival should be at least 80% of the number originally planted. Should numbers decline below 80% at any time during the five-year monitoring period, additional plantings shall be performed to bring the total number up to 80%. Tree planting will be deemed a success if after five years 80% of the original number of trees planted are still alive and the trees have attained a minimum height of 8 ft. measured along the main trunk and/or stem.

The success of shrub plantings is more difficult to quantify. Some shrubs are relatively short lived, such as cliff aster, and others, such as wild rose and blackberry, spread by rhizomes, making individual tallies impossible. The success of shrub planting in this project shall be based on presence or absence of species planted and a visual estimate of the percent cover. All species originally planted should be present in some number after the first and second years. The total percent shrub cover should increase by 10% each year until the absolute cover reaches at least 50% after five years. Should the percent cover fall below 10% at any time after the second year, additional shrub plantings shall be performed.

4.2 Weed Control

Within the riparian revegetation area, the monitoring biologist should identify weed species and perform a visual estimate of the absolute cover of weeds. Weed cover should not exceed 20% at any time during the monitoring period. Should weed cover exceed 20%, additional weed abatement shall be performed.

Within the weed abatement area, weed growth after the two-year weed removal period is expected to increase gradually over time as weeds reinvade the site from upstream areas. The treatment of this area is intended to provide an opportunity for native vegetation to grow without competition from the weeds and, hopefully, establish greater dominance. Given this fact, no performance standards are proposed for the weed abatement area.

4.3 Wetland Functions

The monitoring biologist assessing the performance of tree, shrub, and weed control measures shall indirectly assess the performance of wetland functions. The monitoring biologist should also take note of any increase in wildlife utilization within and adjacent to the restoration site. An increase in wildlife utilization or use of the site by birds for nesting would indicate a positive increase in the overall wetland functions.

5.0 ADAPTIVE MANAGEMENT

In this situation, adaptive management is a process for improving the wetland mitigation plan and implementation by learning from the outcome as it is reported. Adaptive management can be a useful tool for dealing with unexpected outcomes. An example of this would be the failure of all cliff aster plantings in the riparian revegetation area. Should this situation occur, the reason for the failure should be investigated and a decision reached whether or not to attempt replanting this species.

5.1 Approval Process

The first step in the approval process is to identify the problem. We anticipate that the monitoring biologist and/or landscape contractor performing the installation and site maintenance will be the first to identify the problem and bring it to the attention of the project applicant and the City Energy Division. A team approach should then be used to identify potential causes of the problem and creative solutions. A range of options should be considered and the economic and ecological merits of all options considered. The City will have the final decision on which solutions to the problem are acceptable and in keeping with the goals and objectives of the plan.

5.2 Remedial Measures

The City will decide which remedial measures are acceptable, but the choice of which to implement shall be left to the project applicant and shall be monitored by the City as necessary to ensure proper implementation. The City and applicant shall also agree in writing to any additional required monitoring and/or changes in the performance standards.

6.0 PROJECT MANAGEMENT

6.1 Installation Oversight

The physical implementation of this plan will be performed in three steps: 1) site preparation (i.e., weed abatement), 2) revegetation (i.e., plant installation, mulching, and installation of drip irrigation), and 3) post-installation maintenance (i.e., weed abatement, watering, and plant replacement).

Watershed Environmental biologists will oversee the first two steps to ensure that work performed by the landscape contractor meets the mitigation plan specifications and contractual agreement. The last step will be overseen by Venoco, Inc.'s Ellwood gas processing plant personnel and may also be inspected by an Energy Division monitoring biologist.

6.2 Project Funding

This project will be completely funded by Venoco, Inc. for its duration (estimated to be five years from planting date). Costs include site preparation, revegetation, post-installation maintenance, and environmental compliance monitoring and reporting.

6.3 Commitment and Responsibility

Venoco, Inc. is ultimately responsible for ensuring the success of this wetland mitigation plan and for the commitment of the necessary financial resources to implement it. Venoco understands its responsibility and will make every effort to comply with the County and California Coastal Commission 421 Lease emergency permit condition requirements as they pertain to this plan. Venoco's project manager responsible for ensuring plan implementation is Mr. Steve Greig (805-745-2100).

7.0 MITIGATION MONITORING

In addition to the oversight provided by Venoco, Inc., independent mitigation monitoring will be performed by Energy Division compliance monitors. The purpose of this monitoring is to document implementation of the mitigation plan, agency permit condition compliance, and revegetation performance. This documentation will also be used should issues arise requiring adaptive management.

The monitor assigned to this project shall be a professional biologist--preferably one with some knowledge of botany and plant ecology. Environmental monitors shall report directly to Energy Division staff. Project site visits by monitors shall be coordinated with Venoco personnel at the Ellwood gas processing plant. Due to site safety regulations, monitors may be asked to sign in at the processing plant so that their presence and whereabouts are known in the event of an emergency.

7.1 Methodology

Monitoring will be performed by visually inspecting the site and recording qualitative site conditions and quantitative measures of performance.

Qualitative observations in the riparian revegetation area shall include human or other disturbance, wildlife activity, soil conditions, and activities adjacent to the project site that are affecting or may in the future affect the site. Observations in the weed abatement area shall be limited to recording the presence and absence of weeds and the relative effectiveness of weed abatement activities.

Quantitative measures will include an accounting of all trees planted in the revegetation site, any mortality, and average height. A visual estimate of the absolute shrub cover and weed cover shall also be performed. Cover estimates shall measure the aerial extent of unvegetated ground and shrub and weed cover to the nearest 5% within a circular area with a diameter of 11.3 ft. (100-sq.-ft. area). A total of 20 spatially stratified random sampling points within the riparian revegetation area shall be surveyed using this methodology. The sampling results shall be reported by averaging the shrub, weed, and bare-ground cover in the 20 sampling locations and shall include a statistical summary of the minimum, maximum, and standard deviation. Sample replication should be sufficient to provide a 90% confidence interval no greater than 15% of the mean.

7.2 Schedule

Monitoring shall be performed twice a year after planting in the spring (March-April) and fall (November). After the end of the second year, monitoring shall be performed annually in the spring (March-April) until successful attainment of the performance goal is met.

7.3 Reporting

An annual report summarizing the monitoring results and size of the area of successful mitigation shall be prepared by the monitoring biologists and submitted to the County Energy Division, City of Goleta, California Coastal Commission, and Venoco, Inc. by December 15th of each year.

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September 21, 2005

Mark de la Garza
Watershed Environmental
1103 E. Clark Ave., Suite F-6
Orcutt, CA 93455

RE: Review of Third Annual Monitoring Report – State Lease 421 Wetland
Mitigation Project

Dear Mark,

The Energy Division received the Venoco State Lease 421 Wetland Mitigation Third Annual Monitoring Report, dated May 20, 2005. In consultation with On-site Environmental Coordinator John Storrer, and on behalf of the City of Goleta, we have reviewed the report for compliance with the original State Lease 421 Final Wetland Mitigation Plan. Please consider the following comments.

Summary of Results

The report is comprehensive and contains a sufficient level of detail regarding monitoring activity for Spring 2005. The report provides thorough documentation of revegetation progress, including actions undertaken over the previous year to promote successful revegetation. These consist generally of periodic maintenance and monitoring of the restoration site.

Monitoring results demonstrate continued progress toward restoration objectives, including tree growth, high overall vegetative cover, and plant survival. Of particular note are the rate of attrition of planted trees (well within established thresholds), and very good documented values for vegetative cover and weed cover.

Recommendations

Please remove the irrigation system and protective wire cages as soon as possible. In most cases, the enclosures (cages) should have been removed months ago, as recommended in previous progress reports.

Tree survival and growth is such that all but nine trees have satisfied the pre-established height requirement. In view of this fact, we support limiting future surveys to a qualitative assessment of all trees for general health and vigor, and more specific quantitative measurement of the nine trees that have not yet met the performance standard.

In addition, a qualitative assessment of shrub cover will suffice for subsequent surveys. However, if it appears (for whatever reason) that relative shrub cover has fallen to a level approximating the 50% minimum value, then a more quantitative evaluation should be performed.

A visual or qualitative assessment of weed growth in the primary revegetation area would also be acceptable in the future. Again, if the occurrence of weeds appears to approach the 20% relative cover threshold, a more quantitative evaluation should be performed. Alternatively, the weeds could simply be removed.

It appears from the discussion on Page 6, 3rd paragraph, that weed eradication efforts in the “weed abatement area” are not entirely effective. The mitigation plan requires another two years of weed control. If it appears that this aspect of the program will be ultimately unsuccessful, an alternate strategy should be considered at this time. Mulching (in conjunction with tree and shrub planting) has been extremely successful in the primary restoration site. Mulching, or perhaps another alternative to simply hand-weeding, might increase the effectiveness of the weed eradication efforts.

Scheduling

In accordance with the original State Lease 421 Final Wetland Mitigation Plan dated January 2003: “Monitoring shall be performed twice a year after planting in the spring (March-April) and fall (November). After the end of the second year, monitoring shall be performed annually in the spring until successful attainment of the performance goal is met.” The end of the second year was approximately March 25, 2005. Therefore the next monitoring should be performed in Spring 2006.

Conclusions

Overall, the mitigation program is proving to be successful. As described previously, some of the quantitative monitoring requirements may be substituted with qualitative methods, as long as shrub cover and weed cover remain within acceptable limits (specified above).

At this time, the protective wire cages around plants and the irrigation system should be removed. Also, weed eradication methods should be re-evaluated, with mulching possibly serving as a superior alternative to hand-weeding. Please contact John Storrer at (805) 682-2065 to discuss any such alterations to the weed eradication approach.

If you should have any further questions, please feel free to call me at (805) 568-2853.

Sincerely,

Andrea Chadden
Planner

cc: John Storrer, EQAP On-site Environmental Coordinator
Ken Curtis, City of Goleta
Steve Greig, Venoco, Inc.

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