

California State Lands Commission

**PART III –
REVISIONS TO
RECIRCULATED
DRAFT EIR
(JULY 2014)**

Final Environmental Impact Report for the
Revised PRC 421 Recommissioning Project, November 2014

EXECUTIVE SUMMARY

1 BACKGROUND AND PROJECT LOCATION

2 The objective of this Executive Summary is to provide a brief description of Venoco,
3 Inc.'s (Venoco's) proposed Revised PRC 421 Recommissioning Project (Project). The
4 Project would be conducted along the southern coast of California, adjacent to and
5 within the City of Goleta, Santa Barbara County (Figure ES-1). The Executive Summary
6 introduces the purpose of the ~~Recirculated Draft~~ Final Environmental Impact Report
7 (EIR) and key components of the Project activities, identifies significant environmental
8 effects that would result from implementation of the Project, lists feasible mitigation
9 measures (MMs) that would avoid or minimize those significant environmental effects,
10 and summarizes Project alternatives. Please refer to the EIR text for a complete
11 description and discussion of the Project, alternatives, thresholds used to determine
12 significance of impacts, potentially significant environmental effects, and MMs.

13 The California State Lands Commission (CSLC) is the Lead Agency for preparation of
14 this EIR pursuant to the California Environmental Quality Act (CEQA; Pub. Resources
15 Code, § 21000 et seq.), because Venoco, a privately held, independent oil and gas
16 company and the operator of State Lease PRC 421 (PRC 421) has submitted an
17 application to the CSLC to return PRC 421 to oil production from an existing shoreline
18 well (Well 421-2) with the production processed at the Ellwood Onshore Facility (EOF).
19 Table ES-1 provides a timeline of the PRC 421 lease.

20 As proposed, Venoco would:

- 21 · Recommission Well 421-2, located offshore in CSLC jurisdiction, using an
22 existing pier (Pier 421-2) that straddles the City of Goleta's and CSLC's
23 jurisdiction, located southeast of what is commonly known as Haskell's Beach;
- 24 · Separate, at the existing EOF in the City of Goleta, water and gas from crude oil
25 emulsion extracted from Well 421-2; no processing or separation would occur on
26 Pier 421-2; and
- 27 · Decommission a second well (Well 421-1), which is located on an adjacent pier
28 (Pier 421-1) on Haskell's Beach, and remove Pier 421-1 and the caisson and
29 facilities that support Well 421-1.¹ Well 421-1 and caisson are located in CSLC
30 jurisdiction. Pier 421-1 straddles the City of Goleta's and CSLC's jurisdiction.²

¹ Well 421-1 was historically used as a water and gas injection well during past production of PRC 421; Pier 421-1 was historically used for the processing and storage of the Well 421-2 product.

² Section 2.0, Project Description, of this EIR and the State Lease 421 Recommissioning Plan Project Description (Venoco 2013; Appendix G of this EIR) provide Project details, including a discussion of PRC 421 recommissioning, associated upgrades to Venoco's existing facilities, and construction of limited supporting infrastructure.



Project Location

FIGURE ES-1

Table ES-1. PRC 421 Timeline

| | | |
|-----------------------------------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1928 to early 1940s | 1928 | The Ellwood Oil Field was discovered by Barnsdall Oil Company. Construction of piers to develop the Field began. |
| | 1929 | The Surveyor-General, the CSLC's predecessor agency, issued the original oil and gas lease, Lease No. 89, for what is now Lease PRC 421. |
| | | From 1929 to early 1940s, the Ellwood Oil Field was developed by wells drilled from manmade piers; 74 wells were drilled on seven separate state oil and gas leases. |
| 1940s to 1993 | | From the 1940s to the 1990s, 35 more wells were drilled on the remaining oil and gas leases for a total of 109 wells, all producing from Vaqueros sandstone formation in the Ellwood Field, including two wells in what is now Lease PRC 421. |
| | 1949 | The CSLC terminated Lease No. 89 and issued PRC 421 to Bankline Oil Company. PRC 421 continued the exclusive right to the lessee to produce oil and gas from the lease premises. In the years to follow, a series of lease assignments and corporate name changes occurred. |
| | 1959 | The CSLC extended the PRC 421 lease term to the existing lessee, Signal Oil and Gas Company, for <i>"five (5) years, and for so long thereafter as oil or gas is produced in paying quantities or the Lessee shall be conducting producing, drilling, deepening, repairing, redrilling, or other necessary lease or well maintenance operations on the leased lands."</i> |
| | | By 1993, all but Wells 421-1 and 421-2 had become uneconomic to produce and were plugged, abandoned and their piers removed. Based on California Department of Conservation's Division of Oil, Gas, and Geothermal Resources (DOGGR) well records and knowledge of historical abandonment practices, many of the original 74 orphan wells were abandoned in ways that do not meet modern standards. |
| 1994 to date (PRC 421 is and remains shut-in) | 1994 | The existing lessee, Mobil, shut down operations in May after an onshore oil spill from the transportation pipeline. Mobil subsequently repaired the pipeline and remediated saturated soil affected by the spill. PRC 421 has remained shut-in, except for emergency purposes during a 10-month period in 2000-2001 (see below), since 1994. |
| | 1997 | The CSLC reassigned Lease PRC 421 from Mobil to Venoco. |
| | 2000 to 2001 | A methane gas leak was detected at Well 421-1 and oil seepage was detected around the Well 421-2 wellhead. CSLC staff directed Venoco to obtain all necessary permits and conduct well repairs to eliminate any pollution or public safety risk. Entry into Well 421-1 and Well 421-2 to conduct repairs, however, could not commence safely until pressure, built up in the well bores since the wells were shut-in in 1994, was relieved. In order to relieve the pressure, a temporary pipeline was installed from the wells to the Ellwood Onshore Facility (EOF) to relieve well bore pressure. The period of pressure relief was about 10 months, during which a total of approximately 17,000 barrels of oil flowed from the well to the EOF. |
| | 2013 to 2014 | Venoco seeks CSLC authorization (Venoco 2013; Appendix G) to: <ul style="list-style-type: none"> 1) return PRC 421 to oil production from the existing Well 421-2; and 2) process PRC 421 crude oil emulsion at the EOF. |
| | | |

1 This ~~Recirculated Draft Final~~ EIR replaces a Final EIR that the Commission deferred
 2 action on and directed staff to fully evaluate the Processing PRC 421 Oil at Las Flores
 3 Canyon (LFC) Alternative (Calendar Item 91, April 23, 2014).³ The EIR is ~~being~~ was
 4 recirculated pursuant to State CEQA Guidelines section 15088.5, subdivision (a),
 5 because significant new information has been added to the EIR as summarized in Table
 6 ES-2.

Table ES-2. New Information Added to this ~~Recirculated Draft Final~~ EIR

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|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 5.0, Project Alternatives Analysis | To facilitate review of the Processing PRC 421 Oil at LFC Alternative, the EIR has been reorganized to combine and discuss all Project alternatives in a new Section 5.0, Project Alternatives Analysis, which includes: <ul style="list-style-type: none"> · Alternatives selection and screening methodology; · Alternatives eliminated from further consideration; and · Impact analyses of each alternative considered. |
| Processing PRC 421 Oil at LFC Alternative | This Alternative has been moved from the Alternatives Eliminated from Further Consideration subsection (January 2014 version) to the Alternatives Evaluated in this Recirculated Draft Final EIR subsection (Section 5.3.4). |
| No Project Alternative | Whereas Venoco’s proposed Project includes processing PRC 421 oil at the EOF, the No Project Alternative is redefined as Commission authorization (pursuant to Cal. Code Regs., tit. 2, div. 3, ch. 1, § 2121) that Venoco has taken adequate corrective measures to repair the infrastructure associated with PRC 421, such that Venoco is obligated to resume production and processing of oil from PRC 421 under conditions similar to those in existence in 1994, when the well was shut-in for corrective action. Elements of the No Project Alternative are based on the following: <ul style="list-style-type: none"> · The Commission assigned the PRC 421 lease to Venoco in July 1997, which provides Venoco the legal right to produce the lease (lease originally issued in 1929; see Table 2-1 for lease history). · Under the No Project Alternative, Venoco may produce the lease by processing oil on Pier 421-2 and using Well 421-1 on Pier 421-1 for produced water disposal. This is not a “project” as defined in CEQA section 21065,⁴ because the Commission has |

³ The CSLC previously prepared, but did not certify, a Final EIR (January 2014) based on Venoco’s (2013) project description and a Draft EIR (August 2007) based on Venoco’s (2004) project description.

⁴ CEQA section 21065 defines “Project” as “an activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, **and** (*emphasis added*) which is any of the following:
 (a) An activity directly undertaken by any public agency.
 (b) An activity undertaken by a person which is supported, in whole or in part, through contracts, grants, subsidies, loans, or other forms of assistance from one or more public agencies.
 (c) An activity that involves the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies.”

Table ES-2. New Information Added to this Recirculated Draft Final EIR

| | |
|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <p>already issued Lease PRC 421 to Venoco. In contrast, the Commission’s discretionary action for the Project evaluated in this EIR covers: moving the location of oil processing from Pier 421-2 to the EOF; abandoning Well 421-1; and decommissioning Pier 421-1.</p> <ul style="list-style-type: none"> · A “no production alternative,” under which Venoco would be prohibited from resuming commercial production of PRC 421, has been added to this EIR as discussed below. |
| No Production/Quitclaim State Oil and Gas Lease PRC 421 Alternative | This alternative would require the State to take an affirmative action to terminate and quitclaim PRC 421. Terminating the lease would deny Venoco’s contractual right to produce oil from the lease premises; as such, the State would likely be required to pay Venoco for the interest taken. |
| Vaqueros Reservoir Repressurization | This discussion has been augmented to clarify the issue. The discussion was also moved from the background information in Section 2.0, Project Description (in the January 2014 Final EIR), to Section 4.2, Safety, since repressurization is not a purpose of the Project, but Project implementation may affect repressurization. |

1 SUMMARY OF PROJECT OBJECTIVES, PURPOSE AND NEED

2 State CEQA Guidelines section 15126.6, subdivision (a) requires that a range of
3 reasonable alternatives to the proposed Project be described and analyzed that feasibly
4 attains most of the basic objectives of the Project. Therefore, in order to explain the
5 need for the proposed Project, and to guide in development and evaluation of
6 alternatives, Venoco was asked to define its project objectives. Venoco identified the
7 following objective for the Project:

- 8 · To return State Oil and Gas Lease PRC 421 to production and process the
9 production at the EOF.

10 Production estimates for PRC 421, based on current projections, are as follows.

- 11 · Estimated production during the first month is 150 barrels of oil per day (BOPD)
12 due to anticipated repressurization of the reservoir that has likely occurred from
13 the well having been shut-in since 1994. Instantaneous production is not
14 expected to exceed 500 BOPD.⁵
- 15 · After two years, production is anticipated to taper off to approximately 50 BOPD,
16 matching the well’s last 10 years of continuous historical production.
- 17 · The estimated productive life of PRC 421 is 20 years, which is less than the
18 production life of Platform Holly-EOF estimated at a minimum of 40 years.

⁵ The instantaneous production estimate of 500 BOPD is a best estimate based on reservoir modeling performed by Venoco, and thus is expressed as being “not expected” to exceed 500 BOPD.

1 **ORGANIZATION OF EIR**

2 This EIR is presented in several sections as provided below.

- 3 · **Section 1.0 – Introduction** provides an Introduction to the EIR.
- 4 · **Section 2.0 – Project Description** describes the proposed Project, its location,
5 layout and facilities, and presents an overview of its operation and schedule.
- 6 · **Section 3.0 – Alternatives and Cumulative Impacts Methodology** describes
7 alternatives to the proposed Project carried forward for analysis and the
8 alternatives that were considered but eliminated from detailed evaluation, and
9 identifies the projects that were analyzed for their potential cumulative effects.
- 10 · **Section 4.0 – Environmental Impact Analysis** describes existing
11 environmental conditions, Project-specific impacts and MMs associated with the
12 environmental issue areas listed below, and the impact analysis of the
13 alternatives carried forward for detailed analysis. Section 4.0 also evaluates the
14 cumulative impacts of the proposed Project.

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|---------------------------------------------------|----------------------------------------------------------|
| 4.1 Geological Resources | 4.9 Public Services |
| 4.2 Safety | 4.10 Transportation and Circulation |
| 4.3 Hazardous Materials | 4.11 Noise |
| 4.4 Air Quality and Greenhouse Gases | 4.12 Aesthetic/Visual Resources |
| 4.5 Hydrology, Water Resources, and Water Quality | 4.13 Cultural, Historical, and Paleontological Resources |
| 4.6 Marine Biological Resources | 4.14 Energy and Mineral Resources |
| 4.7 Terrestrial Biological Resources | 4.15 Socioeconomics and Environmental Justice |
| 4.8 Land Use, Planning, and Recreation | |

- 15 · **Section 5 – Project Alternatives Analysis** describes the alternatives screening
16 methodology, alternatives rejected from full consideration, alternatives carried
17 forward with impact analyses.
- 18 · **Section 6 – Other Required CEQA Sections and Environmentally Superior
19 Alternative** addresses other required CEQA elements including significant and
20 irreversible environmental and growth-inducing impacts, comparison of the
21 Project and alternatives, and identification of the environmentally superior
22 alternative.
- 23 · **Section 7 – Mitigation Monitoring Program (MMP)** presents the MMP.
- 24 · **Section 8 – Report Preparation Sources and References** lists the persons
25 involved in preparation of the EIR and the reference materials used.

26 The EIR also contains ~~40~~12 appendices.

- 27 · **Appendix A** – contains the EIR distribution list of agencies/organizations and
28 individuals that will receive a copy of the EIR.

- 1 · **Appendix B** – includes a copy of the NOP, copies of all comment letters
2 received in response to the NOP, and an index where comments are addressed
3 in the ~~Recirculated Draft~~ Final EIR (if applicable).
- 4 · **Appendix C** – includes a technical review of safety concerns related to the
5 proposed Project, including repressurization of the reservoir.
- 6 · **Appendix D** – includes air quality and greenhouse gas emission calculations.
- 7 · **Appendix E** – contains a technical review of dispersant use in spill response.
- 8 · **Appendix F** – includes a listing of Best Management Practices (BMPs) specific
9 to the Project that would reduce potential environmental impacts.
- 10 · **Appendix G** – includes Venoco’s revised Project Description for the PRC 421
11 Recommissioning Project with detailed drawings.
- 12 · **Appendix H** – includes MMs from the Line 96 EIR (Santa Barbara County 2011)
13 related to the oil pipeline associated with proposed PRC 421 operations.
- 14 · **Appendix I** – includes impacts and MMs from the Line 96 EIR (Santa Barbara
15 County 2011) relevant to the construction of the oil emulsion pipeline to LFC as
16 part of the Processing PRC 421 Oil at LFC Alternative.
- 17 · **Appendix J** – includes a summary of the monitoring reports from the
18 construction of the Line 96 pipeline.
- 19 · **Appendix K** – includes a summary of the historic improvements made at the EOF.
- 20 · **Appendix L** – provides a history of wetland mitigation performed for impacts
21 caused by the PRC 421 access road.

22 DESCRIPTION OF PROPOSED PROJECT

23 The State Lease 421 Recommissioning Plan (Venoco 2013; Appendix G) details the
24 recommissioning of PRC 421, including upgrades to Venoco’s existing facilities and
25 construction of limited supporting infrastructure. In addition to the CSLC, the City of
26 Goleta, California Coastal Commission (CCC), and other agencies identified in Section
27 1.3.1, Responsible and Coordinating Agencies/Permitting, also have authority over
28 elements of the Project. A Joint Review Panel (JRP), composed of staffs of the CSLC,
29 City of Goleta, CCC, and chaired by the CSLC, was formed to oversee the EIR process.

30 Important Project components are summarized below.

- 31 · Pier 421-2 and Well 421-2. PRC 421 production would occur only on Pier 421-2
32 from Well 421-2.
- 33 · Pier 421-1 and Well 421-1. Following the return to production of Well 421-2,
34 Venoco would plug and decommission Well 421-1, and would remove Pier 421-

1 1, the caisson, connecting piping between Pier 421-1 and Pier 421-2, and any
2 other ancillary supporting facilities that is not required to support the Project.

- 3 · Pipelines and Cables. An existing 6-inch outer-diameter pipeline would be
4 extended at either end to the EOF and to Pier 421-2, and used as a protective
5 sleeve (hereafter referred to as a “line”) for a new 3-inch flowline inserted inside
6 the existing line. Power for Well 421-2 equipment would be provided through a
7 new power cable with 1,500 volts of alternating current (VAC) and a new 480
8 VAC cable. A communication cable for safety and security systems monitoring
9 would also be installed in the trench with the power cables.
- 10 - EOF. Oil/gas/water emulsion pumped from Pier 421-2 would be sent to the EOF
11 and commingled with production from Platform Holly prior to processing using
12 existing equipment. The combined Platform Holly and PRC 421 production would
13 remain within the existing Platform-Holly-to-EOF permitted production limits
14 (13,000 BOPD dry basis).
- 15 · Project Life. The proposed Project is estimated at 20 years and would not extend
16 the life of the EOF which is estimated at 40 years as required to serve Platform
17 Holly; in the event that Platform Holly production ceases and Platform Holly is
18 decommissioned, PRC 421 production would also cease and its facilities would
19 be decommissioned.
- 20 · Hydraulic Fracturing not Part of Project. The use of hydraulic fracturing or
21 “fracking” of PRC 421 is not proposed as part of this Project, and Venoco has
22 submitted a statement that it will not use these techniques at PRC 421. Any
23 future proposal by the Applicant for hydraulic fracturing of wells on PRC 421 will
24 be subject to the environmental review as required by regulations pertaining to
25 hydraulic fracturing in effect at that time. The Applicant will be required to seek
26 required agency approval from the CSLC, among other necessary agency
27 approvals prior to any fracturing operation of any nature within PRC 421.
28 Therefore, hydraulic fracturing is not included in the environmental analysis for
29 this Project and will not be considered by the CSLC or other agencies with permit
30 authority over the Project.

31 Pier 421-2

32 The Project would require the following recommissioning activities for Pier 421-2:

- 33 · Installation of:
 - 34 ○ a new electrical submersible pump (ESP) deep inside the casing of Well
 - 35 421-2 and of associated stainless steel equipment enclosures;
 - 36 ○ a new power cable from the EOF to the ESP;
 - 37 ○ well safety equipment;
 - 38 ○ connecting piping and installation of a pig launcher connection;

- 1 ○ production metering and process monitoring equipment within the EOF;
- 2 ○ direct buried power and communications cables and provisions for
- 3 process monitoring and control between Pier 421-2 and the EOF;
- 4 ○ new decking and railings on Pier 421-2;
- 5 ○ a communication system between Pier 421-2 and the EOF;
- 6 ○ a surveillance camera mounted on Pier 421-2 that would monitor the piers
- 7 and would provide live video feed displayed in the EOF Control Room;
- 8 ○ one new 3-inch oil flowline (inside the upgraded existing 6-inch line)
- 9 connecting Pier 421-2 to the EOF for processing;
- 10 · Repair of an existing buried produced liquid pipeline; and
- 11 · Reactivation of Well 421-2, with a capacity to produce a peak of up to 500 BOPD
- 12 of crude oil.

13 Pier 421-1

14 Following the return of oil production from PRC 421 into the EOF, the Project includes
 15 the decommissioning of Well 421-1, the removal of Pier 421-1, and the removal of all
 16 connecting/supporting ancillary piping and facilities that are not required to resume
 17 operations at Well 421-2 and the EOF. Venoco would apply to decommission and
 18 abandon Well 421-1 within 90 days of receipt of all permits required for the
 19 recommissioning of PRC 421. Before decommissioning Well 421-1, Venoco would be
 20 required to:

- 21 · file a written notice of intent to commence such work with the City of Goleta and
- 22 the California Department of Conservation, Division of Oil, Gas, and Geothermal
- 23 Resources (DOGGR) (in accordance with Pub. Resources Code, § 3203); and
- 24 · submit an Abandonment and Restoration Plan covering decommissioning of the
- 25 well and facilities (required in Cal. Code Regs., tit. 14, § 1776, subs. (e) and (f)).

26 All structures to be removed and the underlying sand would be evaluated for the
 27 presence of hazardous materials, including asbestos, polychlorinated biphenyls (PCBs),
 28 metals, polycyclic aromatic hydrocarbons (PAHs), benzene, toluene, ethylbenzene,
 29 xylene and other oil-related byproducts. Prior to well decommissioning or pier removal
 30 activities, Venoco would notify the CSLC, CCC, DOGGR, City of Goleta, County of
 31 Santa Barbara Fire Department Fire Prevention Division (FPD), Santa Barbara County
 32 Air Pollution Control District (SBCAPCD), and Clean Seas of pending well work.

33 This Project component would involve the sequence of events listed below, some of
 34 which may occur concurrently. Some variation may occur, depending upon unidentified
 35 site conditions and contractor(s) selected to do the work:

- 36 · Installation of onshore work area fencing to exclude the contractor from working
- 37 in the adjacent Environmentally Sensitive Habitat areas and to confine the

- 1 construction activity and related equipment storage to existing disturbed
- 2 surfaces;
- 3 · Plugging of Well 421-1, likely with a combination of cement plugs and
- 4 mechanical bridge plugs;
- 5 · Removal of the 8-foot-tall chain-link fencing and barbed wire that blocks entry to
- 6 the well-head on Pier 421-1;
- 7 · Removal of caissons that surround Pier 421-1. These caissons are concrete and
- 8 sheet pile, sand filled structures, each of which is approximately 68 feet wide, 42
- 9 feet long and 20 feet tall;
- 10 · Final abandonment of the well casing/conductors in accordance with DOGGR
- 11 regulations and approvals;
- 12 · Removal of metal railing and wood planking on pier;
- 13 · Removal of 25 white steel piles and supporting cross beams;
- 14 · Removal of cables;
- 15 · Removal of all piping and interconnections between Pier/Well 421-1 and
- 16 Pier/Well 421-2, and any other ancillary facilities associated with Pier 421-1 and
- 17 Well 421-1;
- 18 · Sand remediation;
- 19 · Reinforcement of seawall at the access road and placement of rock boulder rip
- 20 rap for approximately 75 feet on the seaward side of seawall to match existing rip
- 21 rap currently on both sides of pier;
- 22 · Redistribution of sand to restore natural contours of the beach; and
- 23 · Work site restoration, habitat restoration, and cleanup.

24 Pipelines

25 An existing wrapped and coated 6-inch-diameter line runs from Pier 421-1 along a
26 Venoco right-of-way (ROW) approximately 1,300 feet along the old seawall to a point
27 just south of the 12th tee of Sandpiper Golf Course, turns north into the Platform Holly
28 pipeline ROW, and extends another 500 feet (Figure 2-2). The pipeline terminates at an
29 abandoned interconnection with the old Line 96 ROW in an existing gravel access road
30 between Bell Canyon Creek on the west and the EOF on the east in property owned by
31 the Sandpiper Golf Course.

32 Historically, the PRC 421 product was pumped from a well located on Pier 421-2, piped
33 to and processed on Pier 421-1, then transported to market via Line 96. Line 96, which
34 now transports processed product from the EOF, has since been relocated to a new
35 alignment north of the EOF, leaving the 421 6-inch pipeline temporarily disconnected

1 from the product transport system. As part of the Project, two new pipeline connections
2 are required on the existing PRC 421 6-inch line as described below.

3 · At the shoreline, the 6-inch line currently terminates at Pier 421-1 where the
4 pumped product from Pier 421-2 was originally stored and processed. This
5 portion of the line would be extended to bypass Pier 421-1 and connect directly
6 with Pier 421-2.

7 · The northern portion of the 6-inch line, which currently terminates at an
8 abandoned interconnection with the old Line 96 southwest of the EOF fence line,
9 would be extended to connect the existing pipeline alignment with the EOF
10 facility. The re-routed pipeline alignment would enter into the EOF facility, then
11 continue to the east into the EOF to connect the PRC 421 product line with the
12 Platform Holly oil pipeline for processing. This connection point would occur
13 downstream of the existing Platform Holly oil pig receiver, located well inside of
14 the EOF where the Platform Holly oil pipeline changes into an 8-inch header. The
15 421 pipeline would tie into this existing 8-inch header, above ground.

16 To ensure integrity of the existing 6-inch line between PRC 421 and the existing
17 terminus of the pipeline, located just south of the EOF fence line, a new internal pipe
18 lining will be installed, as described in detail below under Section 2.3.4, Construction
19 Details. The existing 6-inch line would then be hydrotested to 100 pounds per square
20 inch gauge (psig). The impressed current cathodic protection system on the Platform
21 Holly pipelines would be enhanced to include the PRC 421 6-inch line to protect the line
22 against external corrosion.

23 A new 3-inch flowline would be inserted inside the existing 6-inch line. This pipe would
24 be made of a type of high density polyethylene (HDPE) with a layer of metal or
25 fiberglass mesh imbedded within. Because it is non-conductive and immune to galvanic
26 electrochemical effects, this pipe would not corrode like metal piping and is also
27 impervious to many aggressive chemicals as well as scale build-up. The flowline would
28 be designed with a maximum operating pressure of 275 psig and a minimum hydrotest
29 pressure of 425 psig and be rated for continuous operation at temperatures up to 130°
30 Fahrenheit (F). At a minimum, the flowline would hold the indicated test pressure for a
31 period of not less than 8 hours. Hydrotest water would be provided by the Goleta Water
32 District connection located at the EOF and drained back to the EOF when finished. The
33 returned hydrotest water would be introduced into the oil processing system for
34 treatment and disposal.

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

1 Electric Cables

2 Electricity would be provided to Pier 421-2 via two cables buried within a 30-inch-deep,
3 12-inch-wide, 2,500-foot-long trench located within the existing access easement
4 through Sandpiper Golf Course and down the access road. The ESP at Well 421-2
5 would receive power through a buried and armored 200-kilovolt ampere (KVA) power
6 cable with between 1,100 and 1,800 VAC. In addition, a smaller 480 VAC cable would
7 be installed to provide electrical power for metering, well instrumentation, and control
8 systems. A utility power receptacle and an integral communication cable for data
9 transfer would also be installed. The delivery voltage of the utility power would be 480
10 VAC, and a small step-down transformer would be installed in the Well 421-2 electrical
11 panel to drop the voltage down to 120 VAC. The utility power outlet would be located
12 inside the power panel, and would be a heavy-duty, 20 ampere “Arktite” plug receptacle.

13 Modifications Adjacent to and Within the EOF

14 The Project includes processing of produced oil/gas/water emulsion at the EOF. The
15 following modifications would be required at the EOF to process PRC 421 product.

- 16 · Realignment of the 421 pipeline alignment at the existing 421 pipeline
17 termination point (located outside the EOF as shown on Figure 2-3) to connect to
18 the EOF. At the fence line, the new pipeline would continue underground within
19 the EOF and connect above-ground with the existing Platform Holly oil pig
20 receiver located inside the EOF (where the Platform Holly oil pipeline changes
21 into an 8-inch header). A 3-inch flowline would be installed within the length of
22 the re-aligned 6-inch 421 pipeline.
- 23 · Installation, at the connection point, of pressure sensors, pressure gauges, and a
24 flowmeter sensor to monitor production from Well 421-2. The flowmeter and its
25 related electronics would fit within an area approximately 45 cubic feet in size.
- 26 · Installation of a programmable logic controller (PLC) near the flowmeter sensor
27 to provide communication with the existing control room at the EOF and control
28 of the PRC 421 well and pipeline.
- 29 · Installation of a transformer on a small (approximately 2 feet by 4 feet) equipment
30 foundation to be located at the southwest corner of EOF, near the PLC.
- 31 · Installation of buried power and communication cables from the southwest corner
32 of the EOF to the Pier 421-2 wellsite.
- 33 · Installation of a temporary pig launcher at the connection point for future cleaning
34 of the 3-inch flowline.
- 35 · Installation of an electrical motor control panel in the EOF control room (see
36 Remote Monitoring System for PRC 421 under Section 2.4.2 for further details).
37 Power cable connections would occur within existing conduits in the EOF.

- 1 · Installation of a security surveillance camera on Pier 421-2 and the technology to
2 display a live video feed in the EOF control room.

3 **Operations**

4 Venoco estimates that, based on current projections and the proposed ESP sizing for
5 Well 421-2, the productive life of Well 421-2 would be at least 20 years. However, the
6 price of oil may dictate that the Project would continue to be economically feasible beyond
7 the Applicant's estimate. Venoco stated in its application for the Project that production
8 at Well 421-2 would not extend the life of the EOF (Appendix G). The life of the EOF is
9 tied to production from Platform Holly, which Venoco currently estimates will continue
10 for at least 40 years. For PRC 421, Venoco estimates that:

- 11 · the instantaneous oil production rate would not exceed 500 BOPD, while the
12 monthly average oil production rate at the wellhead would not exceed 150 BOPD
13 over the life of the well;
- 14 · the gas production rate would not exceed 70 thousand cubic feet per day
15 (Mcf/d);⁶ and
- 16 · water breakthrough would occur shortly after the start of continuous production
17 and gradually increase until it would no longer be economically viable to produce
18 the well.

19 Estimated flush production is approximately 150 BOPD the first month due to the well
20 having been shut-in, and would converge on approximately 50 BOPD after two years
21 matching the last 10 years of continuous historical production. As the water cut (the
22 portion of the pumped fluid that is composed of water) increases through time, Venoco
23 would increase the pump speed which would result in more water being produced in
24 order to maximize oil production.

25 Oil, gas and water from PRC 421
26 would be commingled with oil
27 and gas from Platform Holly
28 within the EOF before being
29 processed at the EOF and before
30 being transported through Line
31 96 to market, and would flow
32 from the EOF to the Plains All
33 American Pipeline, LP (PAAPLP)
34 Coastal Pipeline west of LFC
35 until the end of PRC 421's
36 production life (Illustration ES-1).

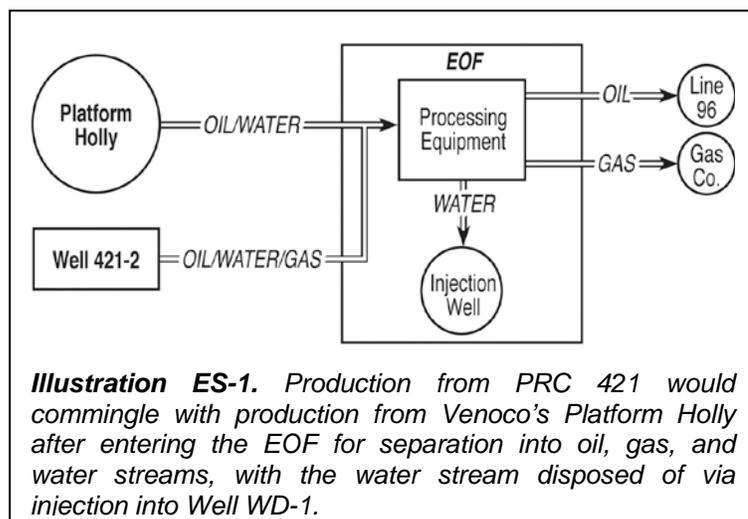


Illustration ES-1. Production from PRC 421 would commingle with production from Venoco's Platform Holly after entering the EOF for separation into oil, gas, and water streams, with the water stream disposed of via injection into Well WD-1.

⁶ The gas production rate was too small to measure during the tests conducted in 2001.

1 Operation of Line 96 will continue beyond the life of PRC 421 until the production life of
2 oil from Platform Holly ends. The Line 96 oil pipeline is owned and operated by Ellwood
3 Pipeline, Inc., a subsidiary of Venoco. Oversight, management, and routine
4 maintenance of the pipeline are undertaken by current staff and contractors of Ellwood
5 Pipeline, Inc. No increase in staffing is proposed or required as part of this Project. No
6 oil storage facilities would be available for the production from PRC 421. Therefore, oil
7 produced from the Project would be commingled with the Platform Holly production,
8 processed through the EOF, and transported through Line 96 to the PAAPLP Coastal
9 Pipeline located west of LFC. The 6-inch Line 96 oil transport pipeline has a throughput
10 capacity of 13,000 BOPD, as limited by the processing permit limit at the EOF.

11 **SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

12 The Project would generate potentially significant environmental impacts associated
13 with the following issue areas: geological resources; safety; hazardous materials;
14 hydrology, water resources, and water quality; marine biological resources; terrestrial
15 biological resources; land use, planning, and recreation; public services; and
16 aesthetics/visual resources. With the implementation of MMs specified in this EIR, a
17 number of these impacts would be reduced to Less than Significant, but several impacts
18 would remain Significant and Unavoidable even after all appropriate and feasible MMs
19 are applied. Specifically, the Project is expected to have Significant and Unavoidable
20 impacts associated with:

- 21 . Safety (see Section 4.2);
- 22 . Hydrology, Water Resources, and Water Quality (see Section 4.5);
- 23 . Marine Biological Resources (see Sections 4.6);
- 24 . Terrestrial Biological Resources (see Sections 4.7);
- 25 . Land Use, Planning, and Recreation (see Section 4.8);
- 26 . Public Services (see Section 4.9); and
- 27 . Aesthetics/Visual Resources (see Section 4.12).

28 Table ES-3 at the end of this Executive Summary presents a summary of impacts and
29 MMs for the Project, organized by resource area.

30 **SUMMARY OF ALTERNATIVES TO PROPOSED PROJECT**

31 CEQA requires identification and evaluation in an EIR of a reasonable range of
32 alternatives to a proposed project, including, if feasible, alternative locations. Pursuant
33 to the State CEQA Guidelines section 15126.6, subdivision (a), the EIR need only
34 consider a range of feasible alternatives that will foster informed decision-making and
35 public participation; therefore, while an EIR need not consider every conceivable
36 alternative, an EIR must include sufficient information about each alternative to allow
37 meaningful evaluation, analysis, and comparison with the proposed project. The range
38 of potential alternatives that must be considered, and thus the range presented in this

1 EIR, is limited to those that would feasibly attain most of the Project objectives while
2 avoiding or substantially reducing any of the significant effects of the proposed Project.
3 Alternatives that were considered but rejected are identified and accompanied by brief,
4 fact-based explanations of the reasons for rejection. Among the factors that may have
5 been used to eliminate alternatives from detailed consideration, as permitted by CEQA,
6 are (1) a failure to meet most of the project objectives, (2) infeasibility, or (3) inability to
7 avoid significant impacts (State CEQA Guidelines § 15126.6, subdivision (c)).
8 Alternatives considered for evaluation in this EIR are summarized below.

9 **No Project Alternative**

10 Whereas Venoco's proposed Project includes processing PRC 421 oil at the EOF, the
11 No Project Alternative is defined as Commission authorization (pursuant to Cal. Code
12 Regs., tit. 2, div. 3, ch. 1, § 2121) that Venoco has taken adequate corrective measures
13 to repair the infrastructure associated with PRC 421, such that Venoco is obligated to
14 resume production and processing of oil from PRC 421 under conditions similar to those
15 in existence in 1994, when the well was shut-in for corrective action.^{7,8} Elements of the
16 No Project Alternative are based on the following:

- 17 · The Commission assigned the PRC 421 lease to Venoco in July 1997, which
18 provides Venoco the legal right to produce the lease (lease originally issued in
19 1929; see Table 2-1 for lease history) and
- 20 · If the Commission authorizes that adequate corrective measures have been
21 taken and operations may be resumed, Venoco may produce PRC 421 by
22 processing oil on Pier 421-2 and using Well 421-1 on Pier 421-1 for produced
23 water disposal.

24 Venoco's restart of production on the lease would include incorporating modern
25 production and safety technologies to comply with current industrial and environmental
26 standards. Venoco would install a new Gas-Liquid Cyclone Separator (GLCS) and a
27 new Liquid-Liquid Cyclone Separator (LLCS) at Pier 421-2 to separate produced gas
28 and water from oil (Figure 5-1).

29 There was no detectable gas production when Well 421-2 produced in 2001 for a short-
30 term period to conduct emergency depressurization. However, the GLCS is designed
31 based on typical properties for California oils at the well depth, for which the gas-oil ratio
32 is estimated to be 100 standard cubic feet per stock tank barrel (SCF/STB). The GLCS

⁷ This regulation states: "The lessee shall suspend any drilling and Production operations, except those which are corrective, protective, or mitigative, immediately in the event of any disaster or of contamination or pollution caused in any manner or resulting from operations under a lease. Such drilling and Production operations shall not be resumed until adequate corrective measures have been taken and authorization of resumption of operations has been made by the commission."

⁸ A "no production alternative," under which Venoco would be prohibited from resuming commercial production of PRC 421, has been added to this EIR as discussed and analyzed in Section 5.3.2 below.

1 is a compact vertical vessel with a tangential nozzle located near the top that subjects
2 incoming fluids to a hydraulically created vortex and centrifugal forces, causing the
3 heavier liquid particles to separate and thus obtaining split liquid and gas streams. The
4 LLCS, which is used to separate out the water, is a similar vessel that would be installed
5 next to the GLCS.

6 The well on Pier 421-1 would be returned to service as a water and gas injection well
7 using injection equipment to reinject and dispose of water and gas that are separated
8 from the gross fluid produced out of Well 421-2. The new ESP in Well 421-2 would
9 provide enough pressure to inject oil into Line 96 at up to 1,440 pounds psig, and an
10 additional pump would be installed after the GLCS to inject up to 1,000 barrels of water
11 per day (BWPD) into Well 421-1. To prevent reverse flow from the well, Venoco would
12 need to install a flow safety valve (FSV) as part of the wellhead piping. New wood-plank
13 decking would be installed for safety and aesthetic purposes. Oil production from Pier
14 421-2 would be directly transported into Line 96 at a tie-in point at the EOF. Once the oil
15 ties into Line 96, it would be commingled with Holly production and transported to LFC
16 where Line 96 ties in with the PAAPLP pipeline system.

17 Resumption of production under this alternative would include the following:

- 18 · Installation of new decking and railings on Piers 421-1 and 421-2;
- 19 · Installation of a downhole ESP, stainless steel equipment enclosures, and new
20 oil separation equipment (GLCS and LLCS) on Pier 421-2;
- 21 · Return of Well 421-1 to service as a water and gas injection well;
- 22 · Installation of a new double-walled line between Wells 421-2 and 421-1, and
23 installation of two new 2-inch flowlines (one for water and gas, one for oil) inside
24 the new double-walled line;
- 25 · Installation of one new 2-inch oil flowline (inside the upgraded existing 6-inch
26 line) connecting PRC 421 to Line 96;
- 27 · Upgrades to the existing 6-inch line from Pier 421-1 to Line 96;
- 28 · Installation and operation of buried power cables to Pier 421-2 to operate the well
29 and associated control systems;
- 30 · Installation of a communication system between PRC 421-2 and the EOF;
- 31 · Installation of a surveillance camera on Pier 421-2 that would monitor the piers
32 and would provide live video feed displayed in the EOF Control Room;
- 33 · Installation of a Lease Automatic Custody Transfer (LACT) system for Well 421
34 oil before introduction to Line 96; and
- 35 · Reactivation of the oil well on Pier 421-2, with projected production as indicated
36 for the Project in Section 2.4.1, Volumes and Throughput.

1 As part of this alternative, the existing 6-inch line would be hydrotested to 100 psig and
2 internally lined with a new plastic coating. The 6-inch line would be protected against
3 external corrosion by enhancing the impressed current cathodic protection system on
4 the Platform Holly pipelines to include the PRC 421 6-inch shipping line. After the
5 upgrades to the 6-inch pipeline preparation are complete, a new 2-inch steel coiled or
6 non-metallic (e.g., fiberglass) flowline would be inserted inside the existing 6-inch line to
7 transport oil to Line 96. Additionally, a double-walled line would replace an existing 2-
8 inch flowline between Well 421-2 and Well 421-1. Two new 2-inch flowlines (one for
9 water and gas, one for oil) would be installed inside the new double-walled line.
10 Electricity would be provided to Pier 421-2 via two cables buried within a 30-inch-deep,
11 12-inch-wide, 2,500-foot-long trench located within the easement through Sandpiper
12 Golf Course and down the access road.

13 This alternative includes many levels of equipment requirements, testing, maintenance,
14 and safety measures in order to prevent accidental releases to the coastal environment.
15 The main safety monitoring system for PRC 421 would be located at the EOF and
16 would include monitors at Wells 421-1 and 421-2. Additional safety measures are
17 included in pipelines and the workover rig. Project components that will occur within the
18 Goleta city limits (e.g., installation of the power cable, upgrades to the 6-inch line) would
19 require Venoco to obtain the appropriate city permits.

20 **No Production/Quitclaim State Oil and Gas Lease PRC 421**

21 Under this alternative, the State would take an affirmative action to terminate PRC 421.
22 Terminating the lease would deny Venoco's contractual right to produce oil from the
23 lease premises; as such, the State would likely be required to pay Venoco for the
24 interest taken. The amount to be paid to Venoco from the State would likely be the fair
25 market value of the oil that would have been produced over the production life of the
26 Project. This alternative would avoid the impacts of Project start-up and operation,
27 including construction-related impacts to marine resources, water quality, short-term
28 noise, and aesthetics. Long-term impacts including incremental increases in the
29 potential for oil spills from shore zone oil production and pipeline transportation on the
30 marine and terrestrial resources and adjacent land use impacts would be avoided.

31 CSLC staff indicated that the pressure build-up could potentially cause oil releases into
32 the coastal environment as the increased pressure would place pressure on historic
33 abandoned wells in offshore areas of the reservoir or possibly lead to additional
34 releases of oil from a natural seep. Many of the offshore wells were abandoned in the
35 1940s and 1950s using abandonment and well-capping techniques of that period, which
36 are not adequate by current standards (refer to Section 4.2.1). The structural stability of
37 older abandoned facilities is unreliable and a substantial increase in reservoir pressure
38 could cause a release of oil to the coastal environment.

1 Given current conditions – PRC 421 is shut-in and all other wells that once tapped the
2 reservoir have been abandoned – there is no active well penetrating the reservoir into
3 which pressure-testing equipment can be inserted; consequently, no mechanism
4 currently exists to conduct pressure testing of the reservoir to determine the extent of
5 possible pressure build-up. Additionally, Venoco is under no obligation to pressure test
6 the wells or the reservoir. Thus, if the wells remain shut-in, pursuant to a quitclaim of the
7 lease, and there is a release of oil within the PRC 421 vicinity that causes
8 environmental damage, an oil spill response would occur once the release is reported
9 and an investigation by the State would commence to find the cause. The determination
10 of the cause would occur at the time of a spill and would depend on the facts involved
11 with such an incident. Possibilities in the event of a release may include oil coming from
12 a natural seep as a result of naturally occurring repressurization or a leak from an old,
13 improperly abandoned well, and monitoring such possibilities is difficult.

14 The subsequent consequence of this alternative would be a future decommissioning of
15 the PRC 421 infrastructure, following either legislative authorization for the necessary
16 appropriations or the conclusion of litigation requiring payment, including the piers,
17 access road and seawall, and pipelines and any associated required clean up or site
18 remediation. Specifics on decommissioning would be addressed in the Abandonment
19 and Restoration Plan to be prepared and submitted to the CSLC, CCC, and the City of
20 Goleta and would require applicable environmental documentation such as a Mitigated
21 Negative Declaration or an EIR.

22 **Re-injection at Platform Holly Alternative**

23 Under this alternative, production would resume at PRC 421 as described under the No
24 Project Alternative; however, produced water and gas would be sent to Platform Holly,
25 via a 4-inch utility pipeline, for reinjection, and Venoco would decommission Well 421-1,
26 its caisson, and pier on an accelerated schedule. This alternative would also entail
27 installing a 2-inch pipeline that extends from Well 421-2 to Line 96. The new ESP in
28 Well 421-2 would provide enough pressure to inject oil into Line 96 at up to 1,440 psig.
29 A new 2-inch pipeline for transport of water and gas to the 4-inch utility pipeline would
30 be installed within the 6-inch pipeline along with the 2-inch oil pipeline. A 4-inch sub-sea
31 utility pipeline currently extends from the EOF to Platform Holly and is used to provide
32 California Public Utilities Commission (PUC)-grade gas to the platform for use as the
33 flare purge and pilot fuel and fuel for the three Holly drilling generators. Under this
34 alternative, this pipeline would instead be used to ship produced water and gas for
35 disposal at Platform Holly. Therefore, initial disposal of produced water at Platform Holly
36 would require Venoco to cease using the utility line for natural gas and instead use
37 annulus gas produced at Platform Holly which has higher sulfur content than PUC gas.
38 To accommodate the use of (or sweeten) the annulus gas, Venoco would need to install
39 new equipment (hydrogen sulfide [H₂S] scrubbers) and implement operational changes
40 at Platform Holly subject to review and approval by the SBCAPCD and other regulatory

1 agencies. Presuming use of the existing line, this alternative would require that Venoco
2 use gas produced at Platform Holly to power equipment locally. Because this gas has
3 higher sulfur content than the gas currently used at the platform, new equipment (H₂S
4 scrubbers) and operational changes would be required at Platform Holly.

5 The following improvements would be required under this alternative:

- 6 · Installation of new decking and railings on Pier 421-2;
- 7 · Installation of a downhole ESP, stainless steel equipment enclosures, and new
8 oil separation equipment (GLCS and LLCS) on Pier 421-2;
- 9 · Installation and operation of two new 2-inch pipelines, one to transfer oil to Line
10 96 and one to transfer produced water and gas to the 4-inch utility line for
11 re injection at Platform Holly;
- 12 · Installation of H₂S scrubbers on Platform Holly;
- 13 · Upgrades to the existing 6-inch line from Pier 421-2 to Line 96;
- 14 · Installation and operation of buried power cables to Pier 421-2 to operate the well
15 and associated control systems;
- 16 · Installation of a communication system between Well 421-2 and the EOF;
- 17 · Installation of surveillance cameras on Pier 421-2 that would monitor the pier and
18 provide a live video feed that would be displayed in the EOF Control Room;
- 19 · Installation of a LACT system for PRC 421 oil before introduction to Line 96;
- 20 · Reactivation of the oil well at Pier 421-2, with projected production as indicated
21 for the Project in Section 2.4.1, Volumes and Throughput; and
- 22 · Decommissioning of Pier 421-1 as described for the Project (see Section 2.6,
23 Decommissioning and Removal of Pier 421-1).

24 **Processing PRC 421 Oil at Las Flores Canyon**

25 Under this alternative, the oil/gas/water emulsion would be produced at Pier 421-2,
26 similar to the proposed Project, but instead of transporting the emulsion to the EOF for
27 processing, the emulsion would bypass the EOF and be pumped through a new pipeline
28 to LFC for processing. LFC is designated as a consolidated facility under Santa Barbara
29 County Zoning Code section 35-154 and is currently operated by ExxonMobil. This
30 alternative would require construction of two new pipelines: a 0.5-mile pipeline from Pier
31 421-2 to the EOF and an approximately 9.7-mile pipeline from the EOF to a proposed
32 Venoco LFC Receiving Station (Receiving Station) located at LFC. The EOF to LFC
33 pipeline portion would comprise approximately 8.4 miles from the EOF to LFC parallel to
34 and north of U.S. Highway 101 (Hwy 101) and 1.3 miles up LFC from Hwy 101 to the
35 Receiving Station (Figure 5-2).

1 The pipeline from the EOF to LFC would run parallel to the existing Line 96 pipeline
2 along segments of Calle Real and across a number of private parcels (Figure ES-2).
3 The emulsion produced at PRC 421 would remain in a three-phase state (oil/gas/water)
4 before being processed at LFC. As such, the existing Line 96 pipeline could not be used
5 to transport the PRC 421 emulsion product as it would be incompatible with the
6 processed oil currently transported from the EOF to the PAAPLP Coastal Pipeline for
7 distribution.⁹ This alternative would also require additional infrastructure both at PRC
8 421 and LFC to enable pumping of the PRC 421 emulsion product to LFC, processing
9 of the product at a new LFC facility, and disposal of produced water. Venoco, in
10 consultation with ExxonMobil, provided the following description regarding infrastructure
11 needs at LFC.

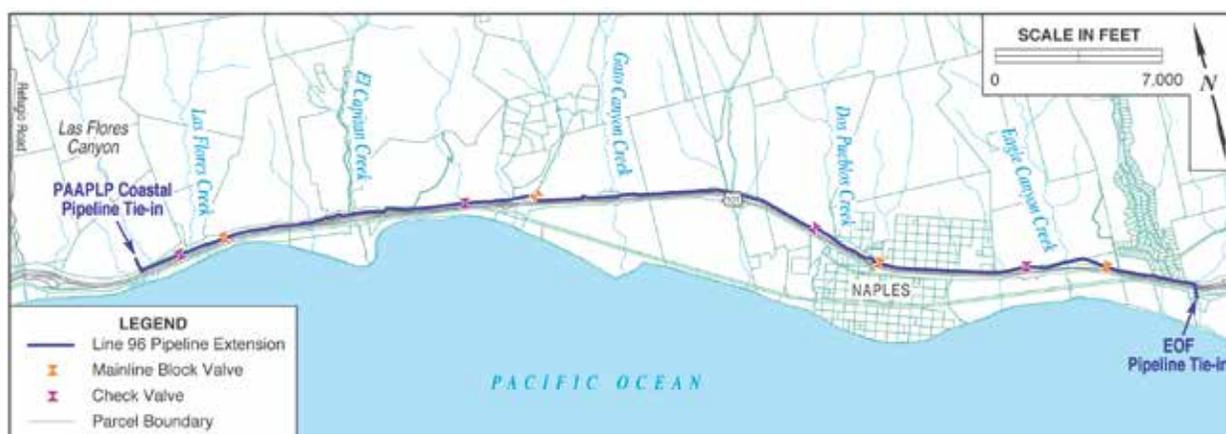


FIGURE ES-2. LINE 96 PIPELINE ROUTE

12 Resuming production at PRC 421 under this alternative would entail:

- 13 · Reactivation of Pier 421-2 and Well 421-2 and installation of improvements at
14 PRC 421, including power and communication cables along the access road and
15 for communication and control systems at the EOF, similar to the Project (refer to
16 Section 2.2, Proposed Project);
- 17 · Use of chemical injection at Well 421-2 to offset the effects of cooling along the
18 pipeline route and provide pipeline corrosion protection, including installation of
19 up to four chemical injection tanks and pumps located near the wellhead;

⁹ Introducing oil emulsion (oil/gas/water) into a processed oil product pipeline would significantly increase the corrosive actions of transported product on the pipeline resulting in a substantial increase in risk of pipeline failure and oil spills. Line 96 is also a PUC regulated common carrier and the product it carries (“Sales Quality” Crude Oil) is considered a “fungible good.” As per the approved Federal Energy Regulatory Commission tariff, introduction of any foreign contaminants (gas, water) is prohibited.

- 1 · Decommissioning and abandonment of Pier 421-1 and Well 421-1 (refer to
2 Section 2.6, Decommissioning and Removal of Pier 421-1);¹⁰
- 3 · Installation of a new 3.826-inch pipeline with cathodic protection extending
4 approximately 0.5 mile between PRC 421 and the tie-in adjacent to the EOF, with
5 the existing 6-inch pipeline abandoned in place or removed;
- 6 · Installation of a new 3.826-inch pipeline with cathodic protection from the tie-in
7 south of and adjacent to the EOF extending approximately 8.4 miles parallel to
8 and north of Hwy 101 to LFC, and 1.3 miles north within the LFC property along
9 Corral Canyon Road to the proposed new Receiving Station at LFC;
- 10 · Construction of a new oil dehydration plant and oil and water storage tanks on up
11 to 1.5 acres at LFC; and
- 12 · Construction of a Class II Underground Injection well at LFC.

13 In addition to the components of the alternative described above, additional
14 infrastructure may be required to accommodate associated increased power demand
15 and fire protection needs.

16 **ALTERNATIVES NO LONGER CONSIDERED**

17 Several alternatives were considered, but were determined to be infeasible or did not
18 clearly offer the potential to reduce significant environmental impacts. These
19 alternatives were eliminated from further evaluation in the EIR and include the following
20 (refer to Section 5.2 for explanation):

- 21 · Drilling from the EOF
- 22 · Drilling from Platform Holly
- 23 · Condensed Production Schedule
- 24 · Offshore Oil Processing on Platform Holly
- 25 · Transportation of Production by Truck
- 26 · Recommissioning Using Historic Production Methods
- 27 · No Production Alternative with Pressure Testing
- 28 · Alternative Energy Sources

29 **COMPARISON OF PROPOSED PROJECT AND ALTERNATIVES AND** 30 **ENVIRONMENTALLY SUPERIOR ALTERNATIVE**

31 State CEQA Guidelines section 15126.6, subdivision (e)(2) states, in part, that an EIR
32 shall identify an environmentally superior alternative among the other alternatives “*if the*
33 *environmentally superior alternative is the ‘No Project’ alternative*” (emphasis added).
34 Table ES-4 compares the proposed Project impacts with those of the alternatives. In

¹⁰ This assumes that a Class II Underground Injection well can be constructed at LFC.

1 addition, Table ES-5 provides a summary of additional environmental impacts for the
2 Processing PRC 421 Oil at Las Flores Canyon Alternative that are beyond the scope of
3 impacts relative to the Project and other alternatives. Based on the analysis contained
4 within the EIR, the CSLC has determined that the proposed Project is the
5 Environmentally Superior Alternative.

6 **No Project Alternative**

7 This alternative would have greater environmental impacts when compared to the
8 proposed Project, as oil produced from PRC 421 would be processed in the shore zone
9 on Pier 421-2 instead of at the EOF, thus resulting in potential for greater environmental
10 impacts related to surf zone accidental spills. Further, under this alternative, Pier 421-1
11 would not be removed and the well on Pier 421-1 would be returned to service as a
12 water and gas injection well using existing injection equipment to reinject and dispose of
13 water and gas that are separated from the gross fluid produced out of Well 421-2. This
14 alternative would result in fewer environmental benefits related to aesthetics when
15 compared to the proposed Project, as Pier 421-1 would not be removed. Impacts to
16 Marine Biology, Water Quality, Safety, and Land Use, Planning and Recreation would
17 remain significant with this alternative, and would be substantially increased in severity
18 due to the location of the separation-processing component of the Project in a
19 vulnerable location in the shore zone environment where it would be exposed to wave
20 action and other potentially damaging conditions.

21 By retaining the separation process at Pier 421-2 rather than moving it to the EOF as
22 proposed, this alternative would increase activity and equipment required on Pier 421-2
23 and result in the potential for releases from separation equipment on the pier. While the
24 amount of oil that could be released is relatively small, the creation of this potential
25 hazard is important given the proximity of highly sensitive coastal resources such as
26 Tecolote Creek, Devereux Slough, nearby rocky intertidal habitat and kelp beds, and
27 recreational uses. This alternative would also be less consistent with adopted City of
28 Goleta land use policy as it would result in separation or processing of oil in the surf
29 zone. Because processing would occur on Pier 421-2, there would be an incremental
30 increase in risk of an oil spill in the surf zone and this alternative would not substantially
31 reduce or avoid any of the impacts identified for the proposed Project. Furthermore, Pier
32 421-1 would not be removed and Well 421-1 decommissioned. Therefore, this
33 alternative would not be environmentally superior to the proposed Project.

34 **No Production/Quitclaim State Oil and Gas Lease PRC 421 Alternative**

35 This alternative would avoid all Project-related construction and operational impacts
36 compared to the proposed Project. However, this alternative is not environmentally
37 superior because of the potential, significant risk that oil may be released into the

1 coastal environment under the conditions stated below (see the reservoir
2 repressurization discussion in Section 4.2.1, Safety).

- 3 · The PRC 421 wells are immediately and permanently shut in. Prior to
4 abandonment of the wells, CSLC reservoir engineers do not pressure test the
5 reservoir (a process that requires temporary oil production).
- 6 · The PRC 421 reservoir repressurizes over time.
- 7 · Reservoir pressurization causes oil to leak at the sites of historic wells
8 abandoned under antiquated standards or from a natural seep.

9 **Reinjection at Platform Holly Alternative**

10 This alternative is similar to the No Project Alternative described above; however,
11 produced water would not be injected in Well 421-1, but would be piped to Platform
12 Holly for reinjection. Similar to the proposed Project, Pier 421-1 would be
13 decommissioned since the well would not be used for water injection. Because
14 processing would still occur on Pier 421-2, there would be a continued risk of an oil spill
15 in the surf zone and this alternative would not substantially reduce or avoid any of the
16 impacts identified for the proposed Project; therefore, similar to the alternative above,
17 this alternative would not be environmentally superior to the proposed Project.

18 **Processing PRC 421 Oil at Las Flores Canyon Alternative**

19 This alternative would reduce the risk of an environmental release or fire related to
20 processing of PRC 421 crude at the EOF. However, this alternative would have greater
21 environmental impacts when compared to the proposed Project due to construction and
22 operation of (1) 9.7 miles of new pipeline from the EOF to the Receiving Station in LFC,
23 and (2) up to 1.5 acres of new oil processing facilities at LFC. While construction-related
24 impacts for the new pipeline and processing facility would be short term, they would be
25 substantially more severe compared to the limited construction impacts associated with
26 the Project. Regarding operational impacts, the new 9.7-mile-long pipeline system
27 would require the use of three-phase operation (i.e., oil/gas/water emulsion), which
28 requires a pressure-based (rather than volumetric) leak detection system that would
29 decrease leak-detection capabilities and increase the probability of a larger-sized spill if
30 the pipeline ruptured or leaked. This alternative also introduces potential impacts
31 associated with spills or releases from the 1.3-mile-long portion of pipeline and new LFC
32 processing facility into and along Corral Canyon Creek that would not occur under the
33 proposed Project. The potential for a release of oil or hazardous materials from Pier
34 421-2 would be similar to the Project and would remain significant and unavoidable
35 since this alternative would still entail production of oil at this location; however,
36 potential impacts would be incrementally increased due to the need for and presence of
37 four chemical tanks ranging from 55 to 350 gallons on Pier 421-2 as such tanks could
38 be damaged or subject to other causes of leaks.

1 Impacts to Safety, Water Quality, Marine Biology, Terrestrial Biology, Public Services,
2 Aesthetic/Visual Resources, and Land Use, Planning and Recreation would remain
3 significant and unavoidable under this alternative. These impacts are mostly related to
4 the potential of an environmental release of oil or hazardous materials during operation
5 and the resulting impacts to the environment. These potential impacts would be more
6 severe due to the increased risk of an environmental release under this alternative and
7 the increased area in which such a release could occur. Construction of a new EOF to
8 LFC pipeline would result in additional significant and unavoidable impacts to water
9 quality and to marine and terrestrial biological resources if a release of drilling fluids
10 during horizontal directional drilling under streams occurred. The addition of new
11 facilities in an area that is underserved for fire protection would remain a significant and
12 unavoidable impact; however, the impact under this alternative would be greater since
13 there would be additional facilities constructed within the fire service area. By moving oil
14 processing from the EOF to LFC, this alternative would increase Land Use impacts
15 related to use of redundant facilities and potential exposure of Corral Canyon Creek and
16 other Gaviota area streams to increased risk of spills more severe than under the
17 Project. While Land Use impacts related to expanding processing of oil at the EOF
18 would not occur consistent with City of Goleta General Plan Policy LU 10.1, restarting
19 oil processing on Pier 421-2 and potential impacts to coastal waters would result in
20 continued inconsistencies with LU 10.4, and this impact would remain significant and
21 unavoidable under this alternative. Because this alternative would introduce new
22 environmental impacts, increase the severity of others, and result in many similar
23 significant and unavoidable impacts to those that would occur under the proposed
24 Project, this alternative would not be environmentally superior to the proposed Project.

25 **KNOWN AREAS OF CONTROVERSY OR UNRESOLVED ISSUES**

26 All proposals related to the development and transportation of oil and gas reserves in
27 the Santa Barbara Channel generate controversy and receive a high level of public
28 scrutiny. This is due to the sensitive nature of marine resources and the potential for
29 safety impacts to the local population. In addition, the 1969 Santa Barbara Channel oil
30 spill is considered by many to be a seminal event in the environmental movement and is
31 often cited as an example of the negative aspects of offshore oil and gas development.
32 The Project would lead to a relatively short-term increase in oil production and
33 transportation within Santa Barbara County compared to existing conditions. As such,
34 the Project has generated a high level of public interest.

Table ES-3. Summary of Environmental Impacts and MMs – Proposed Project

| Impact | Impact Class ¹ | Recommended MMs |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 4.1 Geological Resources | | |
| GEO-1: Seismic and Seismically Induced Hazards. | LTSM | GEO-1a. Include Seismic Loading Evaluation GEO-1b. Field-Verify Subsurface Condition Assumptions GEO-1c. Seismic Inspection GEO-1d. Tsunami Preparedness The Project also incorporates by reference MM GEO-4c (Seismic Inspections) contained in the certified Line 96 Modification Project EIR |
| GEO-2: Landslide and Slope Failure | LTSM | GEO-2a. Monitor Coastal Bluff and Access Road GEO-2b. Maintain Existing Seawall and Rock Revetment GEO-2c. Inspect and Repair Access Road and Pipeline after Landslide Events |
| GEO-3: Soil Settlement and Liquefaction | LTSM | GEO-3. Perform Subsurface Evaluation |
| GEO-4: Corrosion, Weathering, and Erosion | LTSM | GEO-4a. Corrosion Protection Design Specifications GEO-4b. Check Overall Structural Stability against Wind and Wave Action GEO-4c. Evaluate Embedment of Concrete Panels and Lean Concrete Backfill GEO-4d. Inspect Structures During and/or After Storm Events |
| GEO-5: Erosion-Induced Siltation | LTS | None required |
| Section 4.2 Safety | | |
| S-1: Release of Oil During Cleanup of 6-inch Pipeline. | LTS | None required |
| S-2: Exposure of the Public and Environment to Safety Hazards Due to Collapse of the Pier 421-1 or 421-2 Caisson | LTSM | S-2a. Design Review / Wave Loading Evaluation S-2b. Post Storm Inspection, Monitoring and Cleanup |
| S-3: Exposure of the Public and Environment to Safety Hazards Due to Collapse of or Damage to the Existing Timber Bulkhead or Rip-Rap Seawall | LTSM | S-3. Design Review by Civil/Structural Engineer |
| S-4: Potential for Release of Oil or Hazardous Materials from Pier 421-2 | SU | S-4a. Containment S-4b. Response Drills and Planning S-4c. Casing Pressure Testing S-4d. Regular Facility Inspections S-4e. Quantitative Risk Assessment (QRA) |

¹ Impact Class: SU = Significant and unavoidable; LTSM = Less than significant with mitigation; LTS = Less than significant; B = Beneficial.

Table ES-3. Summary of Environmental Impacts and MMs – Proposed Project

| Impact | Impact Class ¹ | Recommended MMs |
|----------------------------------------------------------------------------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | and Implementation of QRA-Recommended Measures |
| S-5: Potential for Release of Oil or Hazardous Materials from the Crude Oil Flowline | LTSM | S-5a. Install Pipeline Warning Markers S-5b. Develop Emergency Action Plan (EAP)/ Update of South Ellwood Field EAP S-5c. Safety , Inspection and Maintenance of Oil and Gas Pipelines |
| S-6: Increased Amount of Oil or Hazardous Materials Potentially Released or Fire from Oil Transfer in Line 96 | SU | The Project incorporates by reference MM HM-3 (Automated Block Valves on Line 96) from the certified Line 96 Modification Project EIR. |
| S-7: Increased Processing of Oil and Gas at the EOF | SU | S-5b. Develop Emergency Action Plan (EAP)/ Update of South Ellwood Field EAP None applicable |
| S-8: Increased Risk of Fire | LTSM | S-8. Fire Prevention and Suppression |
| S-9: Repressurization Monitoring | B | None required |
| Section 4.3 Hazardous Materials | | |
| HAZ-1: Exposure of Public or Environment to Hazardous Materials | LTSM | HAZ-1a. Proper Personnel Training HAZ-1b. Conduct a Phase I Environmental Site Assessment (ESA) HAZ-1c. Soil Sampling HAZ-1d. Removal Action Plan HAZ-1e. Performance Security WQ-1a. Avoidance of High Tides and Silt Curtain |
| HAZ-2: Release of Contaminated Sediment from the Caisson on Pier 421-2 during Operation of the Project | LTSM | Implement MMs HAZ-1b and GEO-4a, GEO-4d, and S-2a, as identified in Sections 4.1 (Geological Resources) and 4.2 (Safety). |
| Section 4.4 Air Quality and Greenhouse Gases | | |
| AQ-1: Increase in Emissions from Construction | LTS | AQ-1a. Prohibit Unnecessary Truck Idling AQ-1b. Use of Diesel Emission Reduction Measures AQ-1c. Maintain Construction Equipment AQ-1d. Compliance with State Portable Air Toxics Control Measure AQ-1e. Establish On-Site Equipment Staging Area and Worker Parking Lots AQ-1f. Fugitive Dust Management |
| AQ-2: Increase in Emissions from Operation | LTS | None required |
| AQ-3: Odor Emissions from Operation | LTS | None required |
| AQ-4: Project Would Result in a Net Increase in GHG Emissions | LTSM | Implement MM AQ-1a through AQ-1e. AQ-4a. Greenhouse Gas Monitoring and Reduction Strategies |
| AQ-5: Project Would Contribute to | LTS | None required |

Table ES-3. Summary of Environmental Impacts and MMs – Proposed Project

| Impact | Impact Class ¹ | Recommended MMs |
|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cumulative Air Quality Impacts | | |
| Section 4.5 Hydrology, Water Resources, and Water Quality | | |
| WQ-1: Temporary Construction Impacts to Marine Water Quality | LTSM | Implement MM HAZ-1a through HAZ-1d . WQ-1a. Avoidance of High Tides and Silt Curtain WQ-1b. Water Quality Certification |
| WQ-2: Temporary Construction Impacts to Wetlands | LTSM | Implement MM TBIO-1a, TBIO-1b, TBIO-1d, and TBIO-1e . WQ-2. Wetland Delineation, Avoidance and Impact Minimization |
| WQ-3: Oil Spill Impacts to Surface and Marine Water Quality | SU | Implement all MMs described in Section 4.2 (Safety), <u>Section 4.6 (Marine Biological Resources)</u> and <u>Section 4.7 (Terrestrial Biological Resources)</u> . WQ-3a. Pipeline Monitoring WQ-3b. Storm Water Pollution Prevention Plan (SWPPP) The Project also incorporates by reference MM BIO-3 (update Native Habitat and Special Status Species Protection Plan) and MM HM-3 (Automated Block Valves on Line 96) contained in the certified Line 96 Modification Project EIR |
| WQ-4: Cumulative Impacts to Marine Water Quality | SU | Each of these projects must meet regulatory requirements designed to reduce the probability and consequences of accidental releases to the environment. However, even the best-designed and implemented MMs, such as safe design of the facilities, oil spill contingency plans, training and drills, and availability of oil spill cleanup means, cannot eliminate all risk of an oil spill. |
| Section 4.6 Marine Biological Resources | | |
| MBIO-1: Disturbance to Intertidal Organisms during Construction | LTSM | MBIO-1. Avoid Caisson Repair on Pier 421-2 and Removal of Pier 421-1 during Grunion Spawning Season |
| MBIO-2: Impacts to Marine Organisms from Sediment Resuspension in the Near-Shore Zone due to Disturbance of Sediments during Construction | LTSM | Implement MMs WQ-1a, WQ-1b, HAZ-1c, and HAZ-1-d identified in Sections 4.5 (Hydrology, Water Resources, and Water Quality) and 4.3 (Hazardous Materials). |
| MBIO-3: Noise Impacts to Marine Life during Caisson Repairs on Pier 421-2 and Decommissioning and Removal of Pier 421-1 | LTS | None required |
| MBIO-4: Oil Spill Impacts to Marine Resources | SU | MBIO-4a. Update Oil Spill Contingency Plan (OSCP) to Address a Spill from Lease PRC |

Table ES-3. Summary of Environmental Impacts and MMs – Proposed Project

| Impact | Impact Class ¹ | Recommended MMs |
|-------------------------------------------------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | SU | 421 Oil Production MBIO-4b. Develop a Protection Plan to Keep Birds Roosting on Bird Island from Harm in the Event of an Oil Spill on Lease PRC 421 The Project also incorporates by reference MM BIO-4a (update Emergency Action Plan and Oil Spill Contingency Plan) contained in the certified Line 96 Modification Project EIR. |
| MBIO-5: Oil Spill Impacts to Commercial and Recreational Fishing | SU | Implement MMs identified in Sections 4.2 (Safety), 4.5 (Hydrology, Water Resources, and Water Quality), and 4.7 (Terrestrial Biological Resources) for contingency planning/spill response. |
| MBIO-6: Impacts to Kelp Harvesting | LTS | None required |
| MBIO-7: Cumulative Impacts of an Oil Spill on Marine Resources | SU | Implement MMs MBIO-4a and MBIO-4b . |
| Section 4.7 Terrestrial Biological Resources | | |
| TBIO-1: Short-Term Construction Impacts to Biological Resources | LTSM | TBIO-1a. Locate Power Cables and Pipeline Outside ESHA TBIO-1b. Project Biological Monitors TBIO-1c. Restoration Plan/Restoration TBIO-1d. Protect Stockpiles of Excavated Material. TBIO-1e. Equipment Use, Storage, and Maintenance TBIO-1f. Biological Enhancement Activities WQ-2. <u>Wetland Delineation, Avoidance and Impact Minimization</u> |
| TBIO-2: Oil Spill Impacts to Terrestrial Biological Resources | SU | TBIO-2a. Oil Spill Contingency Plan (OSCP) Measures Regarding Protection of Biological Resources TBIO-2b. Oil Spill Contingency Plan (OSCP) Measures Regarding Habitat Protection and Restoration The Project also incorporates by reference MM BIO-4a (update Emergency Action Plan and Oil Spill Contingency Plan) contained in the certified Line 96 Modification Project EIR. |
| TBIO-3: Cumulative Impacts to Terrestrial Biological Resources | SU | MMs TBIO-2a and TBIO-2b would apply to this impact. The Project also incorporates by reference MM BIO-4a (update Emergency Action Plan and Oil Spill Contingency Plan) contained in the certified Line 96 Modification Project EIR. |

Table ES-3. Summary of Environmental Impacts and MMs – Proposed Project

| Impact | Impact Class ¹ | Recommended MMs |
|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 4.8 Land Use, Planning, and Recreation | | |
| LU-1: Conflicts with Goleta GP/CLUP Policies | SU | Implement MMs identified in Sections 4.1 (Geological Resources), 4.2 (Safety), 4.3 (Hazardous Materials), 4.5 (Hydrology, Water Resources, and Water Quality), 4.6 (Marine Biological Resources), and 4.7 (Terrestrial Biological Resources) MM LU-1a. Obtain Property Owner Authorizations. MM LU-1b. Obtain Permits Required by Title 15 of Goleta Municipal Code. MM LU-1c. Obtain City Land Use Permit Prior to Development. |
| LU-2: Oil Releases Could Affect Recreational Activities | SU | Implement MMs identified in Sections 4.1 (Geological Resources), 4.2 (Safety), 4.3 (Hazardous Materials), 4.5 (Hydrology, Water Resources, and Water Quality), 4.6 (Marine Biological Resources), and 4.7 (Terrestrial Biological Resources) for properly engineered reinforcement of caisson containment walls and contingency planning/spill response. |
| LU-3: Oil Releases from Pier 421-2 or Pipelines Could Affect Sensitive Area Resources and Raise Consistency Issues with Adopted Policies | SU | Implement MMs identified in Sections 4.1 (Geological Resources), 4.2 (Safety), 4.3 (Hazardous Materials), 4.5 (Hydrology, Water Resources, and Water Quality), 4.6 (Marine Biological Resources), and 4.7 (Terrestrial Biological Resources) for properly engineered reinforcement of caisson containment walls and contingency planning/spill response. The Project also incorporates by reference MM AG-2 (Restoration after a Pipeline Leak) contained in the certified Line 96 Modification Project EIR. |
| LU-4: Cumulative Impacts of Potential Project-Related Oil Spills on Area Land Use and Recreational Uses | SU | Implement MMs identified in Sections 4.1 (Geological Resources), 4.2 (Safety), 4.3 (Hazardous Materials), 4.5 (Hydrology, Water Resources, and Water Quality), 4.6 (Marine Biological Resources), and 4.7 (Terrestrial Biological Resources) for properly engineered reinforcement of caisson containment walls and contingency planning/spill response |
| Section 4.9 Public Services | | |
| PS-1: Adequacy of Fire Response | SU | PS-1a. Impact Development Fee |
| PS-2: Operation without an Approved Fire Prevention Plan | LTSM | PS-2a. Prepare Fire Prevention Plan for PRC 421 |

Table ES-3. Summary of Environmental Impacts and MMs – Proposed Project

| Impact | Impact Class ¹ | Recommended MMs |
|--------------------------------------------------------------------------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section 4.10 Transportation and Circulation | | |
| TR-1: Construction-Generated Traffic | LTSM | TR-1a. Route Construction Traffic to Avoid Congested Intersections TR-1b. Repair/Upgrade Any Damage to Access Road |
| TR-2: Operation-Generated Traffic | LTS | None required |
| TR-3: Increased Potential for Traffic Accidents | LTS | None required |
| Section 4.11 Noise | | |
| NZ-1: Construction Impacts to Beach Users and Golfers | LTS | NZ-1a. Sound-Control Devices NZ-1b. Additional Best Management Practices NZ-1c. Buffers |
| NZ-2: Operational Impacts to Beach Users and Golfers | LTS | None required |
| Section 4.12 Aesthetic/Visual Resources | | |
| VR-1: Visual Effects from Construction Activities at PRC 421 | LTSM | VR-1a. Use Laydown Areas for Overnight Storage of Equipment VR-1b. Caution Tape around Materials Placed on Beach VR-1c. Material Removal at Construction Completion VR-1d. Minimal Night Lighting VR-1e. No Night Lighting After 5:00 p.m. |
| VR-2: Visual Effects from Accidental Oil Spills | SU | Implement MMs identified in Sections 4.2 (Safety), 4.3 (Hazardous Materials), 4.5 (Hydrology, Water Resources, and Water Quality), 4.6 (Marine Biological Resources), and 4.7 (Terrestrial Biological Resources) for contingency planning and spill response. |
| VR-3: Visual Improvements due to Removal of Pier 421-1 | B | None required |
| VR-4: Visual Changes to Pier 421-2 | LTS | None required |
| Section 4.13 Cultural Resources | | |
| CR-1: Potential Impacts to Previously Undiscovered Cultural Resources During Construction | LTSM | CR-1. Cultural Resources Monitor |
| CR-2: Potential Impacts to Cultural Resources Due to Oil Spill and Cleanup Activities | LTS | None required |
| Section 4.14 Energy and Mineral Resources | | |
| EMR-1: Increase in Electricity Use | LTS | None required |
| EMR-2: Conflict with State-Adopted Energy Conservation Plans | LTS | None required |

Table ES-4. Summary of Environmental Impacts for Proposed Project and Alternatives

| Impact | Impact Class ¹² | | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------|-----------------------|-------------------------------|---------------------------------------------|
| | Proposed Project | No Project | Quitclaim Alternative | Reinjection at Platform Holly | Processing PRC 421 Oil at LFC ¹³ |
| Section 4.1 Geological Resources | | | | | |
| GEO-1: Seismic and Seismically Induced Hazards | LTSM | LTSM | NI | LTSM | LTSM |
| GEO-2: Landslide and Slope Failure | LTSM | LTSM | NI | LTSM | LTSM |
| GEO-3: Soil Settlement and Liquefaction | LTSM | LTSM | NI | LTSM | LTSM |
| GEO-4: Corrosion, Weathering, and Erosion | LTSM | LTSM | NI | LTSM | LTSM |
| GEO-5: Erosion-Induced Siltation | LTS | LTS | NI | LTS | LTS |
| Section 4.2 Safety | | | | | |
| S-1: Release of Oil During Cleanup of 6-inch Pipeline | LTS | LTS | NI | LTS | NI |
| S-2: Exposure of the Public and Environment to Safety Hazards Due to Collapse of the 421-1 or 421-2 Caissons | LTSM | LTSM | NI | LTSM | LTSM |
| S-3: Exposure of the Public and Environment to Safety Hazards Due to Collapse of or Damage to the Existing Timber Bulkhead or Rip-Rap Seawall | LTSM | LTSM | NI | LTSM | LTSM |
| S-4: Potential for Release of Oil or Hazardous Materials from Pier 421-2 | SU | SU | SU | SU | SU |
| S-5: Potential for Release of Oil or Hazardous Materials From the Crude Oil Flowline | LTSM | LTSM | NI | LTSM | LTSM |
| S-6: Increased Amount of Oil or Hazardous Materials Potentially Released or Fire/Explosion from Oil Transfer in Line 96 | SU | SU | NI | SU | NI |
| S-7: Increased Processing of Oil and Gas at the EOF | SU | NI | NI | NI | NI |
| S-8: Increased Risk of Fire | LTSM | LTSM | NI | LTSM | LTSM |
| S-9: Repressurization Monitoring | B | B | SU | B | B |
| Section 4.3 Hazardous Materials | | | | | |
| HAZ-1: Exposure of Public or Environment to Hazardous Materials | LTSM | LTSM | SU | LTSM | LTSM |
| HAZ-2: Release of Contaminated Sediment from the Caisson on Pier 421-2 during Operation of the Project | LTSM | LTSM | NI | LTSM | LTSM |

¹² Impact Class: SU = Significant and unavoidable; LTSM = Less than significant with mitigation; LTS = Less than significant; NI = No impact; B = Beneficial

¹³ For the full range of impacts associated with this alternative, see also Table ES-5.

Table ES-4. Summary of Environmental Impacts for Proposed Project and Alternatives

| Impact | Impact Class ¹² | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------|-----------------------|-------------------------------|---------------------------------------------|
| | Proposed Project | No Project | Quitclaim Alternative | Reinjection at Platform Holly | Processing PRC 421 Oil at LFC ¹³ |
| Section 4.4 Air Quality and Greenhouse Gases | | | | | |
| AQ-1: Increase in Emissions from Construction | LTS | LTS | NI | LTS | LTS |
| AQ-2: Increase in Emissions from Operations | LTS | LTS | NI | LTS | LTS |
| AQ-3: Odor Emissions from Operation | LTS | LTS | NI | LTS | LTS |
| AQ-4: Project Would Result in a Net Increase in GHG Emissions | LTSM | LTSM | NI | LTSM | LTSM |
| AQ-5: Project Would Contribute to Cumulative Air Quality Impacts | LTS | LTS | NI | LTS | LTS |
| Section 4.5 Hydrology, Water Resources, and Water Quality | | | | | |
| WQ-1: Temporary Construction Impacts to Marine Water Quality | LTSM | LTSM | NI | LTSM | LTSM |
| WQ-2: Temporary Construction Impacts to Wetlands | LTSM | LTSM | NI | LTSM | LTSM |
| WQ-3: Oil Spill Impacts to Surface and Marine Water Quality | SU | SU | SU | SU | SU |
| WQ-4: Cumulative Impacts to Marine Water Quality | SU | SU | SU | SU | SU |
| Section 4.6 Marine Biological Resources | | | | | |
| MBIO-1: Disturbance to Intertidal Organisms during Construction | LTSM | LTSM | NI | LTSM | LTSM |
| MBIO-2: Impacts to Marine Organisms from Sediment Resuspension in the Near-Shore Zone due to Disturbance of Sediments during Caisson Repairs | LTSM | LTSM | NI | LTSM | LTSM |
| MBIO-3: Noise Impacts to Marine Life during Caisson Repairs on Pier 421-2 and Decommissioning and Removal of Pier 421-1 | LTS | LTS | NI | LTS | LTS |
| MBIO-4: Oil Spill Impacts to Marine Resources | SU | SU | SU | SU | SU |
| MBIO-5: Oil Spill Impacts to Commercial and Recreational Fishing | SU | SU | SU | SU | SU |
| MBIO-6: Impacts to Kelp Harvesting | LTS | LTS | NI | LTS | LTS |
| MBIO-7: Cumulative Impacts of an Oil Spill on Marine Resources | SU | SU | SU | SU | SU |
| Section 4.7 Terrestrial Biological Resources | | | | | |
| TBIO-1: Short-Term Construction Impacts to Biological Resources | LTSM | LTSM | NI | LTSM | LTSM |
| TBIO-2: Oil Spill Impacts to Terrestrial Biological Resources | SU | SU | SU | SU | SU |
| TBIO-3: Cumulative Impacts to Terrestrial Biological Resources | SU | SU | SU | SU | SU |
| Section 4.8 Land Use, Planning, and Recreation | | | | | |
| LU-1: Potential Conflicts with Goleta General Plan/Coastal Land Use Plan (GP/CLUP) and underlying Coastal Act Policies. | SU | SU | B | SU | SU |

Table ES-4. Summary of Environmental Impacts for Proposed Project and Alternatives

| Impact | Impact Class ¹² | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------|-----------------------|-------------------------------|---------------------------------------------|
| | Proposed Project | No Project | Quitclaim Alternative | Reinjection at Platform Holly | Processing PRC 421 Oil at LFC ¹³ |
| LU-2: Oil Releases Could Affect Recreational Activities | SU | SU | SU | SU | SU |
| LU-3: Oil Releases from Pier 421-2 or Pipelines Could Affect Sensitive Area Resources and Raise Consistency Issues with Adopted Policies | SU | SU | SU | SU | SU |
| LU-4: Cumulative Impacts of Potential Project-Related Oil Spills on Area Land Use and Recreational Uses | SU | SU | SU | SU | SU |
| Section 4.9 Public Services | | | | | |
| PS-1: Adequacy of Fire Response | SU | SU | NI | SU | SU |
| PS-2: Operation without an Approved Fire Prevention Plan | LTSM | LTSM | NI | LTSM | LTSM |
| Section 4.10 Transportation and Circulation | | | | | |
| TR-1: Construction-Generated Traffic | LTSM | LTSM | NI | LTSM | LTSM |
| TR-2: Operation-Generated Traffic | LTS | LTS | NI | LTS | LTS |
| TR-3: Increased Potential for Traffic Accidents | LTS | LTS | NI | LTS | LTS |
| Section 4.11 Noise | | | | | |
| NZ-1: Construction Impacts to Beach Users and Golfers | LTS | LTS | NI | LTS | LTS |
| NZ-2: Operational Impacts to Beach Users and Golfers | LTS | LTS | NI | LTS | LTS |
| Section 4.12 Aesthetics/Visual Resources | | | | | |
| VR-1: Visual Effects from Construction Activities at PRC 421 | LTSM | LTSM | NI | LTSM | LTSM |
| VR-2: Visual Effects from Accidental Oil Spills | SU | SU | SU | SU | SU |
| VR-3: Visual Improvements due to Removal of Pier 421-1 | B | NI | NI | B | B |
| VR-4: Visual Changes to Pier 421-2 | LTS | LTS | NI | LTS | LTS |
| Section 4.13 Cultural, Historical, and Paleontological Resources | | | | | |
| CR-1: Potential Impacts to Previously Undiscovered Cultural Resources During Construction | LTSM | LTSM | NI | LTSM | LTSM |
| CR-2: Potential Impacts to Cultural Resources Due to Oil Spill and Cleanup Activities | LTS | LTS | LTS | LTS | LTS |
| Section 4.14 Energy Mineral Resources | | | | | |
| EMR-1: Increase in Electricity Use | LTS | LTS | NI | LTS | LTS |
| EMR-2: Conflict with State-Adopted Energy Conservation Plans | LTS | LTS | NI | LTS | LTS |

Table ES-5. Summary of Environmental Impacts for the Processing PRC 421 Oil at LFC Alternative that are Not Applicable to the Proposed Project or other Alternatives¹⁴

| Impact | LFC Alternative Components | |
|--------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------|
| | EOF to LFC Pipeline | LFC Facility |
| PRC 421 EIR Section 4.1 Geological Resources | | |
| Similar to Line 96 GEO-1 (Slope Failures) | LTS | - |
| Similar to Line 96 GEO-2 (Erosion of Drainages) | LTSM | - |
| Similar to Line 96 GEO-3 (Expansive Soils) | LTSM | - |
| Similar to Line 96 GEO-4 (Faulting and Seismicity) | LTSM | - |
| Exposure of New Facilities to Seismic Hazards | - | LTSM |
| Exposure of New Facilities to Landslide and Slope Failure | - | LTSM |
| Exposure of New Facilities to Soil Settlement and Liquefaction | - | LTSM |
| Exposure of Soils to Erosion | - | LTSM |
| PRC 421 EIR Section 4.2 Safety | | |
| Similar to Impact S-6 from this Revised Draft EIR (above) and to Line 96 H-3 (Pipeline Spill Impacts to the Environment) | SU | - |
| Potential for Release of Oil or Hazardous Materials from LFC Facilities | - | SU |
| Increased Risk of Fire | - | LTSM |
| PRC 421 EIR Section 4.3 Hazardous Materials | | |
| Similar to Line 96 WQ-2 (Construction Impact to Waterways; also included in Water Quality) | LTSM | - |
| Exposure of Public or Environment to Hazardous Materials | - | LTSM |
| PRC 421 EIR Section 4.4 Air Quality and Greenhouse Gases | | |
| Similar to Line 96 AQ-1 (Construction Emissions) | LTS | - |
| Increase in Emissions from Construction | - | LTSM |
| Increase in Emissions from Operations | LTS | LTS |
| Net Increase in GHG Emissions | LTSM | LTSM |
| PRC 421 EIR Section 4.5 Hydrology, Water Resources, and Water Quality | | |
| Similar to Line 96 WQ-2 (Construction Impact to Waterways) | LTSM | - |
| Similar to Line 96 WQ-3 (Horizontal Directional Drilling Impacts to Onshore Waterways) | SU | - |

¹⁴ This table summarizes impacts identified in the 2011 Line 96 EIR (as applicable) and analysis performed in this EIR of potential impacts at Las Flores Canyon associated with the Processing PRC 421 Oil at LFC Alternative.

Table ES-5. Summary of Environmental Impacts for the Processing PRC 421 Oil at LFC Alternative that are Not Applicable to the Proposed Project or other Alternatives¹⁴

| Impact | LFC Alternative Components | |
|----------------------------------------------------------------------------------------|----------------------------|--------------|
| | EOF to LFC Pipeline | LFC Facility |
| Similar to Line 96 WQ-4 (Impacts to Onshore Waterways from Potential Facilities Leaks) | SU | - |
| Construction Impacts to Water Quality | - | LTSM |
| Operational Impacts to Water Quality | - | SU |
| Wastewater Injection Impacts to Groundwater Quality | - | LTSM |
| PRC 421 EIR Section 4.6 Marine Biological Resources | | |
| Similar to Line 96 BIO-2 (Construction Impacts to Sensitive Species) | SU | - |
| Similar to Line 96 BIO-3 (Construction Impacts to Native Habitats) | SU | - |
| Similar to Line 96 BIO-4 (Oil Spill Impacts to Biological Resources) | SU | - |
| Construction Impacts to Marine Biological Resources | - | LTSM |
| Operational Impacts to Marine Biological Resources | - | LTSM |
| PRC 421 EIR Section 4.7 Terrestrial Biological Resources | | |
| Similar to Line 96 BIO-2 (Construction Impacts to Sensitive Species) | SU | - |
| Similar to Line 96 BIO-3 (Construction Impacts to Native Habitats) | SU | - |
| Similar to Line 96 BIO-4 (Oil Spill Impacts to Biological Resources) | SU | - |
| Construction Impacts to Sensitive Species and Native Habitats | - | LTSM |
| Oil Spill Impacts to Biological Resources | - | SU |
| PRC 421 EIR Section 4.8 Land Use, Planning, and Recreation | | |
| Oil Releases Could Affect Recreational Activities (not included in Line 96 EIR) | SU | - |
| Similar to Line 96 AG-1 (Loss of Resources, Construction and Soil Disturbance) | LTSM | - |
| Similar to Line 96 AG-2 (Restoration after a Leak/Spill) | LTSM | - |
| Similar to Line 96 AG-3 (Loss of Prime Agricultural Land) | LTS | - |
| Similar to Line 96 AG-4 (Loss of Organic Cultural Land) | LTS | - |
| Potential Conflicts with Coastal Land Use Plan and underlying Coastal Act Policies | - | SU |
| Oil Releases Could Affect Recreational Activities | - | SU |
| PRC 421 EIR Section 4.9 Public Services | | |
| Similar to Line 96 PS-1 (Adequacy of Fire Response) | SU | - |
| Similar to Line 96 PS-2 (Impacts on Water Utility Sewer) | LTS | - |

Table ES-5. Summary of Environmental Impacts for the Processing PRC 421 Oil at LFC Alternative that are Not Applicable to the Proposed Project or other Alternatives¹⁴

| Impact | LFC Alternative Components | |
|------------------------------------------------------------------------------------------|----------------------------|--------------|
| | EOF to LFC Pipeline | LFC Facility |
| Similar to Line 96 PS-3 (Impacts on Sewer) | LTS | - |
| Similar to Line 96 PS-4 (Impacts on Solid Waste Facilities) | LTS | - |
| Adequacy of Fire Response | - | SU |
| Expansion of Onsite Fire Protection Infrastructure | - | LTS |
| PRC 421 EIR Section 4.10 Transportation and Circulation | | |
| Similar to Line 96 T-1 (Increased Construction Traffic) | LTSM | - |
| Construction-Generated Traffic | - | LTSM |
| Operation-Generated Traffic | - | LTS |
| PRC 421 EIR Section 4.11 Noise | | |
| Similar to Line 96 N-1 (Noise from Pipeline Construction) | LTSM | - |
| Noise from Construction | - | LTSM |
| Noise from Operation | - | LTS |
| PRC 421 EIR Section 4.12 Aesthetics/Visual Resources | | |
| Similar to Line 96 VR-3 (Visual Effects from Pipeline Construction) | LTS | - |
| Similar to Line 96 VR-4 (Visual Effects of Pipeline Installation) | LTSM | - |
| Similar to Line 96 VR-6 (Visual Effects from Accidental Oil Spills) | LTS | - |
| Visual Effects from Construction and Operation | - | LTS |
| PRC 421 EIR Section 4.13 Cultural, Historical, and Paleontological Resources | | |
| Similar to Line 96 CR-2 (Construction at CA-SBA-139) | LTSM | - |
| Similar to Line 96 CR-3 (Construction Access to CA-SBA-139) | LTSM | - |
| Similar to Line 96 CR-4 (Construction Access to CA-SBA-83, CA-SBA-1676, and CA-SBA-1733) | LTSM | - |
| Similar to Line 96 CR-5 (Oil Spill Impacts) | LTSM | - |
| Potential Construction Impacts to Cultural Resources | - | LTSM |
| PRC 421 EIR Section 4.14 Energy Mineral Resources | | |
| Similar to Line 96 EMR-1 (Electricity Use) | LTS | - |
| Increased Energy Use During Construction and Operation | - | LTS |
| Potential Construction of New Power Lines | - | LTSM |