

5.0 PROJECT ALTERNATIVES ANALYSIS

1 The California Environmental Quality Act (CEQA) requires the California State Lands
2 Commission (CSLC), as the CEQA Lead Agency, to analyze alternatives to a proposed
3 project that could feasibly achieve the objectives of the project while substantially
4 reducing significant environmental effects. As noted in Section 1, Introduction, and
5 described in Section 2, Project Description, the proposed Revised PRC 421
6 Recommissioning Project (Project) reviewed in this Environmental Impact Report (EIR)
7 is based on an application by Venoco, Inc. (Venoco), the lessee and operator of State
8 Oil and Gas Lease PRC 421 (PRC 421), to return oil production from an existing
9 shoreline well (Well 421-2) that was shut-in in 1994 and process PRC 421 crude oil
10 emulsion at the Ellwood Onshore Facility (EOF) in the City of Goleta, instead of on
11 shoreline piers as was the case when the CSLC assigned the lease to Venoco in 1997.

12 Section 5 of this EIR examines the potential environmental impacts of the alternatives to
13 the proposed Project. This section describes the alternatives screening methodology,
14 identifies alternatives eliminated from further consideration, and provides detailed
15 descriptions and impact analyses of each of the alternatives being considered to the
16 Project. Section 6.4 provides a comparison of the alternatives with the proposed Project
17 and discusses the Environmental Superior Alternative.

18 5.1 SELECTION OF ALTERNATIVES

19 5.1.1 Guidance on Alternatives Development and Evaluation

20 An important aspect of the environmental review process is the identification and
21 assessment of reasonable alternatives that have the potential to avoid or reduce the
22 significant impacts of a proposed project to allow for a comparative analysis for
23 consideration by decision-makers. The State CEQA Guidelines provide the following
24 guidance for evaluating alternatives in EIRs.

- 25 · An EIR need not consider every conceivable alternative to a project. Rather, it
26 must consider a reasonable range of potentially feasible alternatives that will
27 foster informed decision-making and public participation. An EIR is not required
28 to consider alternatives which are infeasible. (Guidelines § 15126.6, subd. (a)).
- 29 · The discussion of alternatives shall focus on alternatives to the project or its
30 location which are capable of avoiding or substantially lessening any significant
31 effects of the project, even if these alternatives would impede to some degree the
32 attainment of the project objectives, or would be more costly. (Guidelines §
33 15126.6, subd. (b)).
- 34 · In selecting a range of potential reasonable alternatives to the proposed project,
35 the Lead Agency shall include those that could feasibly accomplish most of the
36 basic objectives of the project and could avoid or substantially lessen one or

1 more of the significant effects. Among the factors that a Lead Agency may use to
2 eliminate alternatives from detailed consideration are: (i) failure to meet most of
3 the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant
4 environmental impacts. (Guidelines § 15126.6, subd. (c)).

- 5 · The EIR shall include sufficient information about each alternative to allow
6 meaningful evaluation, analysis, and comparison with the proposed project. If an
7 alternative would cause one or more significant effects in addition to those that
8 would be caused by the project as proposed, the significant effects of the
9 alternative shall be discussed, but in less detail than the significant effects of the
10 project as proposed. (Guidelines § 15126.6, subd. (d)).

11 The CEQA also requires an EIR to evaluate a “no project” alternative. The purpose of
12 describing and analyzing a no project alternative is to allow decision-makers to compare
13 the impacts of approving the proposed project with the impacts of not approving the
14 project. The analysis of the no project alternative must discuss the existing conditions at
15 the time the Notice of Preparation (NOP) is published, as well as what would be
16 reasonably expected to occur in the foreseeable future if the project were not approved.

17 **5.1.2 Alternatives Screening Methodology**

18 Alternatives to the proposed Project were identified, screened, and either retained for
19 further analysis or eliminated as described below. Alternatives were developed based
20 on: information provided by the Applicant (Venoco); input received from the EIR Joint
21 Review Panel (JRP) represented by the CSLC, California Coastal Commission (CCC),
22 and City of Goleta staffs; and comments received from the public and local jurisdictions
23 during the public review and comment period on the 2013 Draft EIR for the proposed
24 Project. The Alternatives screening process consisted of the following steps:

25 **Step 1:** Define the alternatives to allow comparative evaluation.

26 **Step 2:** Evaluate each alternative in the context of the following criteria:

- 27 · The extent to which the alternative would accomplish most of the basic goals and
28 objectives of the Project (the Project objective is identified in Section 1.2);
- 29 · The potential feasibility of the alternative, taking into account site suitability,
30 economic viability, availability of infrastructure, General Plan consistency, and
31 consistency with other applicable plans and regulatory limitations;
- 32 · The extent to which the alternative would avoid or lessen one or more of the
33 identified significant environmental effects of the Project; and
- 34 · The requirement of the State CEQA Guidelines to consider a “no project”
35 alternative and to identify, under specific criteria, an “environmentally superior”
36 alternative. For example, pursuant to State CEQA Guidelines section 15126.6,

1 subdivision (e), “if the environmentally superior alternative is the ‘no project’
2 alternative, the EIR shall also identify an environmentally superior alternative
3 among the other alternatives.”

4 **Step 3:** Determine the suitability of the proposed alternative for full analysis in the EIR
5 based on Steps 1 and 2 above. Alternatives considered to be unsuitable, were
6 eliminated, with appropriate justification, from further consideration.

7 Feasible alternatives that did not clearly offer the potential to reduce significant
8 environmental impacts and infeasible alternatives were removed from further analysis.
9 In the final phase of the screening analysis, the environmental advantages and
10 disadvantages of the remaining alternatives were carefully weighed with respect to their
11 potential for overall environmental advantage, technical feasibility, and consistency with
12 Project and public objectives.

13 If an alternative clearly does not provide any environmental advantages as compared to
14 the proposed Project, it was eliminated from further consideration. At the screening
15 stage, it is not possible to evaluate potential impacts of the alternatives or the Project
16 with absolute certainty. However, it is possible to identify elements of the proposed
17 Project that are likely to be the sources of impact. A preliminary assessment of potential
18 significant effects of the Project resulted in identification of the following impacts:

- 19 · Potential increase in fugitive air pollutant emissions (Air Quality);
- 20 · Potential increase in the risk of an oil spill from oil production or pipeline
21 transportation that would affect terrestrial biological resources, marine biological
22 resources, water quality, and commercial and recreational fishing (Marine
23 Biological Resources, Water Resources);
- 24 · Potential safety hazards associated with incremental increases in oil production
25 and transportation (Public Services, Safety);
- 26 · Potential increase in the risk of an oil spill from pipeline transportation that would
27 affect recreation (other than fishing) in the vicinity of the proposed Project
28 (Recreational Resources); and
- 29 · Potential increase in demand for fire protection services (Public Services).

30 For the screening analysis, technical and regulatory feasibility of various potential
31 alternatives was assessed at a general level. Specific feasibility analyses were not
32 needed for this purpose. Any alternative with infeasible characteristics was disregarded.
33 The assessment of feasibility was conducted by using “reverse reason” to identify
34 anything about the alternative that would be infeasible on technical or regulatory
35 grounds. CEQA does not require elimination of a potential alternative based on cost of
36 construction and operation/maintenance. For the proposed Project, characteristics used
37 to eliminate alternatives from further consideration included:

- 1 · Limited effectiveness in reducing Project environmental impacts;
- 2 · Engineering feasibility and safety;
- 3 · Permitting feasibility;
- 4 · Potential adverse effects on marine and terrestrial resources;
- 5 · Potential effects on public health and safety;
- 6 · Potential for inconsistency with adopted agency plans and policies; and
- 7 · Reasonability when compared to other alternatives under consideration.

8 Information gathered during the original 2007 Draft EIR public comment period, the
 9 2013 Draft EIR public comment period, and following the CSLC's consideration of the
 10 Final EIR in April 2014 led to further refinement of alternatives considered to the Project
 11 in this ~~Recirculated Draft~~ Final EIR.

12 **5.1.3 Summary of Screening Results**

13 Those alternatives found to be technically feasible and consistent with the Applicant's
 14 Project objective were reviewed to determine if the alternative had the potential to
 15 reduce the Project's environmental impacts. Table 5-1 summarizes the evaluation of
 16 potential alternatives that were either eliminated from further consideration (see
 17 rationale in Section 5.2, Alternatives Eliminated from Further Consideration), or fully
 18 described and evaluated in detail (see Section 5.3, Alternatives Evaluated in this EIR).

Table 5-1. Summary of Alternatives Screening Results

	Alternatives Eliminated from Further Consideration	Alternatives Evaluated in this EIR
Drilling from the Ellwood Onshore Facility	X	
Drilling from Platform Holly	X	
Condensed Production Schedule	X	
Offshore Oil Processing on Platform Holly	X	
Transportation of Production By Truck	X	
Recommissioning Using Historic Production Methods	X	
No Production Alternative with Pressure Testing	X	
Alternative Energy Sources	X	
No Project Alternative		X
No Production/Quitclaim State Oil and Gas Lease PRC 421		X
Reinjection at Platform Holly		X
Processing PRC 421 Oil at Las Flores Canyon ¹		X

¹ As discussed in Section 1, Introduction, at its April 23, 2014, meeting, the Commission directed its staff to fully evaluate the Processing PRC 421 Oil at Las Flores Canyon Alternative in the July 2014 Recirculated Draft EIR.

1 **5.2 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION**

2 **5.2.1 Drilling from the EOF**

3 Under the Drilling from the EOF Alternative, Venoco would produce the Ellwood Field by
4 installing a drilling rig at the EOF. Wells 421-1 and 421-2 would be shut-in, and existing
5 infrastructure at PRC 421 would be subsequently decommissioned with its components
6 abandoned in place, removed, or a combination thereof. No production would take
7 place at PRC 421 from surf zone facilities.

8 This alternative would reduce construction- and operation-related impacts to marine
9 resources, aesthetics, and the risk of a marine oil spill from surf zone production would
10 be greatly reduced. Abandonment-related impacts, such as grading, excavation, and
11 export and cleanup of existing facilities and contaminated soils would be similar to those
12 associated with the proposed Project for Pier 421-1; however, under this alternative,
13 both wells and Piers 421-1 and 421-2 would be abandoned and removed.

14 This alternative was determined to be infeasible from three aspects:

- 15 · no available space;
- 16 · system safety; and
- 17 · conflicts with City of Goleta codes.

18 A drilling rig and associated equipment required to support the anticipated drilling
19 activities would typically require an area measuring 100 feet by 200 feet, or about 0.5
20 acre. This amount of space is not available on Venoco's EOF property site. The entire
21 site is approximately 4.5 acres with processing equipment distributed around the entire
22 site, which would create system safety conflicts between EOF operations and any new
23 drilling operations. In addition, the Goleta Municipal Code, section 35-160 et seq.
24 prohibits any enlargement, expansion or extension of the EOF's nonconforming use. As
25 a result of the space restrictions that limit the technical feasibility of the alternative, the
26 potential systems safety hazards of the facility, and conflicts with the City's code, the
27 Drilling from the EOF Alternative was eliminated from further evaluation.

28 **5.2.2 Drilling from Platform Holly**

29 Under this alternative, the Ellwood Oil Field would be produced from Platform Holly,
30 instead of using the shoreline well on Pier 421-2, and the PRC 421 piers would be
31 immediately abandoned and existing related infrastructure would be left in place,
32 removed, or a combination thereof. Decommissioning would take place according to
33 CSLC lease requirements and would require the preparation of an Abandonment and
34 Restoration Plan to be approved by the CSLC and the City of Goleta. Decommissioning
35 of the PRC 421 facilities would also require a coastal development permit from the
36 CCC.

1 This alternative would reduce or eliminate many of the impacts associated with the
2 proposed Project related to accidental oil spills from the PRC 421 location and impacts
3 to the marine and terrestrial environment in the PRC 421 vicinity. Abandonment-related
4 impacts, such as grading, excavation, export and cleanup of existing facilities and
5 contaminated soils, would be similar to the proposed Project.

6 This alternative was eliminated from further consideration because it is technically
7 infeasible and could increase the risk of an offshore oil spill. In order to produce the
8 Ellwood Oil Field, a well would need to be drilled to a vertical depth of 3,000 feet with a
9 12,600-foot horizontal displacement. This scenario is approaching the limits of current
10 drilling technology and additional geologic concerns are present that make it infeasible
11 to drill from Platform Holly. Specifically, the well would cross a long section of the
12 Sisquoc and Rincon formations and a very large thrust fault. Therefore, the well would
13 be susceptible to loss of circulation, structural instability, and loss of directional control.
14 This loss of directional control combined with the relatively small target and the distance
15 to the well render this option technically infeasible. Finally, many of the original wells on
16 the Ellwood Oil Field, which was first developed in 1929, were drilled without accurate
17 deviation surveys, meaning that the exact locations of those well bores are unknown,
18 and that new wells could hit one of the old wells. As a result, the Drilling from Platform
19 Holly Alternative was removed from further consideration due to the increased risk for
20 oil spills and the technical difficulties associated with producing from such a distance
21 and depth.

22 **5.2.3 Condensed Production Schedule**

23 Under this alternative, an additional well would be drilled into the Ellwood Field with the
24 intent to accelerate production and to shorten the Project's life. This would potentially
25 reduce the long-term risk of oil spills and associated impacts to water, land use,
26 aesthetics, safety, and terrestrial and marine biological resources.

27 While compressing the production life might reduce the long-term risk from an oil spill,
28 adding a well to the shore zone facilities may not necessarily accelerate production or
29 reduce the Project duration. In addition, the actions needed to drill an additional shore
30 zone well would have more significant short-term impacts to water quality, marine and
31 terrestrial biological resources, air quality, geologic resources, hazardous materials,
32 noise, and aesthetic resources. Therefore, this alternative was eliminated from further
33 consideration.

34 **5.2.4 Offshore Oil Processing on Platform Holly**

35 Under this alternative, oil from PRC 421 would be piped offshore to Platform Holly for
36 processing, commingled with Platform Holly oil, returned to shore and treated at the
37 EOF with the commingled Platform Holly oil, and transported through the Line 96
38 Pipeline to the Plains All American Pipeline, L.P. (PAAPLP) Coastal Pipeline west of

1 Las Flores Canyon (LFC). Since there is no available pipeline to transport PRC 421 oil
2 to Platform Holly, construction of a new 4-inch pipeline would be required from a
3 location near the EOF to Platform Holly, a distance of approximately 15,000 feet.

4 This alternative would require the offshore transportation of gross three-phase
5 production fluids (water, oil, and gas), which is contrary to CSLC “best practices” due to
6 an inability to properly detect leaks in this type of flow. Consequently, the pipeline
7 running from PRC 421 to Platform Holly would not be provided with leak detection
8 comparable to any other offshore pipelines in the Santa Barbara Channel.

9 Any new pipeline would also need to cross the surfzone to reach Platform Holly. If the
10 pipeline was routed directly from the PRC 421 piers to Platform Holly, the transition
11 would have to be made via an “open cut” process across and through the surf zone
12 because the proximity of the piers to the bluff prevents the use of Horizontal Directional
13 Drilling (HDD) to allow for a buried surf zone crossing. In order to use HDD technology,
14 the new oil pipeline would first have to be routed westerly in the existing PRC 421
15 access road toward the existing EOF access road, to provide suitable laydown space
16 for HDD equipment. This would also require a temporary workspace area within
17 Sandpiper Golf Course or in the adjacent landscaped area.

18 Once offshore, the pipeline would be routed to Platform Holly where a new J-tube (a
19 vertical tube connecting the seafloor pipeline to the platform pipeline) would be installed
20 to route the pipeline onto the platform production deck. Required new facilities on
21 Platform Holly would include a new metering skid to control flows, plus a pig receiver to
22 allow the new pipeline to be cleaned, a three-phase production separator for the
23 incoming fluid, and a new flow line and controls to introduce PRC 421 oil streams into
24 the existing production processing train on Platform Holly. There is no room on Platform
25 Holly for these facilities. Room for equipment could possibly be made available by
26 cantilevering a deck off the north or south side of the platform; however, construction of
27 this additional deck spacing would require expansion of the platform (a minimum of 250
28 square feet of additional deck space). Due to structural limitations with the existing
29 platform jacket, this deck would more than likely require large braces attached to the
30 existing platform jacket for support. These braces would interfere with the ability to land
31 boats to the existing boat docks on the platform.

32 Oil from PRC 421 does not require processing for hydrogen sulfide (H₂S) removal.
33 Under this alternative, however, PRC 421 oil would be commingled with Platform Holly
34 oil then transported to the EOF in the existing oil emulsion pipeline. Upon entering the
35 EOF, the oil stream would first be routed through existing heat exchangers to help warm
36 the oil for processing, then through one or more existing heater treaters for removal of
37 any residual water. Water removed would be impounded and disposed of through an
38 existing high-pressure injection pump and disposal well WD-1. Oil would then be routed

1 through the existing H₂S stripper towers to remove H₂S before entering into the new
2 Line 96 Pipeline for transport to the west of LFC.

3 Because this alternative would move processing away from the PRC 421 shore zone
4 location, impacts related to accidental oil spills may be reduced within the shore zone
5 environment. Pier 421-2, however, would remain in place for the duration of production
6 to pump oil from Well 421-2 to Platform Holly.

7 Because of the operation of an offshore pipeline without a leak detection system, the
8 limited space on Platform Holly for additional equipment to handle PRC 421 oil, and the
9 impacts to the marine environment related to the platform expansion and construction of
10 a new 3-mile pipeline to transport PRC 421 oil to Platform Holly, this alternative has no
11 environmental benefits over the proposed Project and was eliminated from further
12 consideration.

13 **5.2.5 Transportation of Production by Truck**

14 Under this alternative, production would resume at PRC 421 as described in the
15 proposed Project; however, recovered crude oil would be transported via tanker trucks
16 on local freeways rather than via Line 96 pipeline to the PAAPLP Coastal Pipeline west
17 of LFC. Under this alternative, an industry-standard truck loading rack would be
18 constructed at the EOF to accommodate the necessary truck-loading requirements,
19 including secondary containment and other features required by Federal, State and
20 local regulations. Transfer of crude oil from the trucks at the receiving facility might also
21 require installation of an equivalent industry-standard truck unloading rack and storage
22 tanks, depending on the existing infrastructure at the receiving facility.

23 For example, an alternative of trucking oil from PRC 421 to the Rincon Onshore
24 Separation Facility (ROSF), located just east of Carpinteria, would initially involve up to
25 five tandem trucks (each carrying approximately 160 barrels of oil) traveling about 32
26 miles one way per day, declining to three trucks per day during years 3 through 5 and
27 one to two trucks per day during the later years of Project production. From the ROSF,
28 the crude oil would be commingled with production from the ROSF and shipped via an
29 existing 22-inch pipeline to the Shell and Conoco Phillips (TOSCO) terminal in Ventura
30 Harbor. From Ventura, Project-related crude oil would be transported via several
31 existing common carrier pipelines that connect to Los Angeles area refineries. Such
32 increases in trucking between PRC 421 and ROSF, or other receiving facility, would
33 incrementally contribute to potential safety impacts on area roadways with potential for
34 accidents and oil spills, associated impacts to hydrology, water quality and terrestrial
35 and marine biology, along with increased emissions when compared to transport via the
36 new Line 96 pipeline. Thus, this alternative could create incrementally more severe
37 environmental impacts than transport via pipeline under the proposed Project.

1 In addition, Venoco had previously submitted a Temporary Trucking Application to the
2 City of Goleta (City Case No. 06-186) and an application for a Limited Exception
3 Determination (LED) which would exempt Venoco from the provisions of the City's
4 nonconforming use requirements under the Goleta Municipal Code, section 35-160 et
5 seq. The City determined that because additional infrastructure would be required to
6 accommodate loading of oil onto trucks, trucking of oil was inconsistent with several of
7 the criteria that must be satisfied for approval of an LED, as it would result in an
8 expansion or increase in overall intensity of use beyond the existing permitted use.
9 Following the City of Goleta's initial rejection of the trucking proposal, Venoco elected to
10 withdraw its application for City permits. Therefore, this alternative was eliminated from
11 further consideration because of demonstrated inconsistency with the City of Goleta's
12 Municipal Code, Venoco's withdrawal of the application for permits, and because this
13 alternative has no environmental benefits over the proposed Project.

14 **5.2.6 Recommissioning Using Historic Production Methods**

15 Under this alternative, production would resume at PRC 421 using essentially the
16 configuration that was in place at the time the wells were shut-in in 1994. In contrast,
17 the No Project Alternative would incorporate new technologies to comply with current
18 industrial and environmental standards. Historic operations at this facility involved using
19 a natural gas-fired internal combustion engine to power the pump at Pier 421-2.
20 Produced oil and water emulsion was then separated using a Free Water Knockout
21 (FWKO) system, and produced oil and insignificant quantities of gas bypassed the EOF
22 and were delivered to market directly via the existing 6-inch line to the old Line 96
23 segment for delivery to the Ellwood Marine Terminal (EMT). Produced water was stored
24 in a tank on Pier 421-1 and periodically reinjected into the underlying formation via Well
25 421-1.

26 This alternative would include the following components that would differ from the
27 proposed Project:

- 28 · Installation and operation of a new gas-fired internal combustion engine and an
29 above-ground pump in Pier 421-2; and
- 30 · Installation of a FWKO unit, storage tank, and pump for water reinjection on Pier
31 421-1.

32 Unlike the proposed Project, Pier 421-1 and Well 421-1 would not be decommissioned
33 until after production stops. Future decommissioning of the remaining facilities at PRC
34 421 would be governed by an Abandonment and Restoration Plan to be prepared by
35 Venoco and approved by the CSLC, CCC, and City of Goleta.

36 Because this alternative would still include modification and reactivation of surf zone oil
37 production facilities, oil processing at the PRC 421 piers, and pipeline transportation of
38 produced oil, the impacts associated with the proposed Project would still apply. In

1 addition, the installation of the storage tank would substantially increase aesthetic
2 impacts, and the operation of a gas-fired internal combustion engine on Pier 421-2
3 would substantially increase air quality impacts as compared to the proposed Project.
4 Therefore, this alternative has no environmental benefits over the proposed Project or
5 the No Project Alternative and was eliminated from further consideration.

6 **5.2.7 No Production Alternative with Pressure Testing**

7 This alternative is not applicable as it does not apply to the Applicant. If Venoco does
8 not produce the lease, the CSLC has no nexus to require Venoco to pressure test the
9 reservoir. Any pressure testing of the reservoir would be at the expense of the State.
10 Therefore, this alternative was eliminated from further consideration.

11 **5.2.8 Alternative Energy Sources**

12 This alternative would be to replace oil produced from PRC 421 with equivalent energy
13 production from clean or alternative energy sources. Energy production from these
14 sources could include methods such as constructing solar panel fields, wind turbine
15 farms, wave energy devices, or producing geothermal resources. However, PRC 421,
16 as currently assigned to Venoco, contractually obligates Venoco to produce oil from the
17 lease premises. As a result, Venoco's Project objective has been appropriately defined
18 as the production of oil from PRC 421 consistent with its lease. Consideration of clean
19 or alternative energy sources as an alternative to the Project would neither meet the
20 stated project objective nor would it release Venoco's obligations to produce oil from
21 PRC 421; therefore, this alternative was eliminated from further consideration.

22 **5.3 ALTERNATIVES EVALUATED IN THIS EIR**

23 Four alternatives, including the No Project Alternative, have been identified for full
24 evaluation and comparison to the proposed Project (see Table 5-1 above). Table 5-2
25 provides a summary of the major components of the proposed Project and the three
26 build alternatives. Of the proposed Project and three build alternatives, only the
27 Processing PRC 421 Oil at Las Flores Canyon Alternative would require substantially
28 more new construction and involve locations remote from the primary Project area,
29 which would introduce many more impacts compared to the Project and other
30 alternatives (see Section 5.3.4 below).

Table 5-2. Summary of Major Project Components for the Proposed Project and Build Alternatives

Location/Major Project Component	Proposed Project	Project Alternatives		
		No Project Alternative	Reinjection at Platform Holly	Processing PRC 421 Oil at LFC
New railing/wood decking	Pier 421-2 only	Pier 421-2 and 421-1	Pier 421-2 only	Pier 421-2 only ^a
Well and Pier 421-1	Decommissioned	Used for water injection	Decommissioned	Decommissioned ^a
Well 421-2	ESP	ESP	ESP	ESP
Pier 421-2	No major infrastructure required	GLCS and LLCS	GLCS and LLCS	<ul style="list-style-type: none"> - Four (4) 55- to 350-gallon chemical tanks with 100 % leak containment - 10-gallon isokinetic sampler/oil storage bottle If tightlining ^b is not feasible: <ul style="list-style-type: none"> - 1,000-1,500 bbl tank with cone roof vented to a VRU control device with a flare to remove excess gas - Dedicated oil shipping pump
Oil processing	Existing EOF	LLCS on Pier 421-2	LLCS on Pier 421-2	New construction at LFC: <ul style="list-style-type: none"> - Oil dehydration plant - Two 5,000 bbl tanks (oil and water) - Class II Underground Injection well^a
Gas processing	Existing EOF	GLCS on Pier 421-2	GLCS on Pier 421-2	Existing LFC facility
Oil flowline	3" to EOF (0.45 mi.)	2" to Line 96 (0.45 mi.)	2" to Line 96 (0.45 mi.)	None
Water/gas flowline	None	2" to Well 421-1	2" to the 4" utility line to Platform Holly	None ^a
Oil pipeline	Existing Line 96 to PAAPLP	Same as proposed	Same as proposed	New construction: 10.2-mile, 3-phase (oil/gas/water) high pressure pipeline to LFC facility
Oil pipeline leak detection system	Volumetric-based and low pressure switches	Same as proposed	Same as proposed	Low pressure switches only (much less accurate system than Line 96)
Power cable	EOF to Pier 421-2	Same as proposed	Same as proposed	Same as proposed
Communication system	EOF to Pier 421-2	Same as proposed	Same as proposed	Same as proposed

ESP = electric submersible pump; GLCS = Gas-Liquid Cyclone Separator; LLCS = Liquid-Liquid Cyclone Separator; PAAPLP = Plains All American Pipeline, Limited Partners

^a Only if a Class II Underground Injection well can be constructed at LFC. If not, Well 421-1 would be used for water injection, new railing and wood decking would apply to Pier 421-1, and a new produced water pipeline back to Pier 421-1 for injection would be required.

^b Tightlining is the ability to operate the 3-phase pipeline without flow breakage, i.e., tanking production and providing a dedicated oil shipping pump.

1 Sections 5.3.1 through 5.3.4 describe and analyze each of these four alternatives and
2 their associated impacts in relation to the proposed Project. Analysis of the Processing
3 PRC 421 Oil at Las Flores Canyon Alternative includes relevant impacts assessed in
4 the 2011 Ellwood Pipeline Company Line 96 Modification Project EIR (Line 96 EIR) and
5 the 1984 Final EIR for Santa Ynez Unit/Las Flores Canyon Development and
6 Production Plan (SYU/LFC EIR). Relevant impacts and mitigation measures (MMs) from
7 these documents are incorporated by reference as part of this analysis (per State CEQA
8 Guidelines § 15152), and are summarized in this EIR and included in their entirety in
9 Appendix I. Section 6.4 compares the impacts of the proposed Project and alternatives
10 (see Tables 6-2 and 6-3) and identifies the Environmentally Superior Alternative.

11 **5.3.1 No Project Alternative**

12 **Description**

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

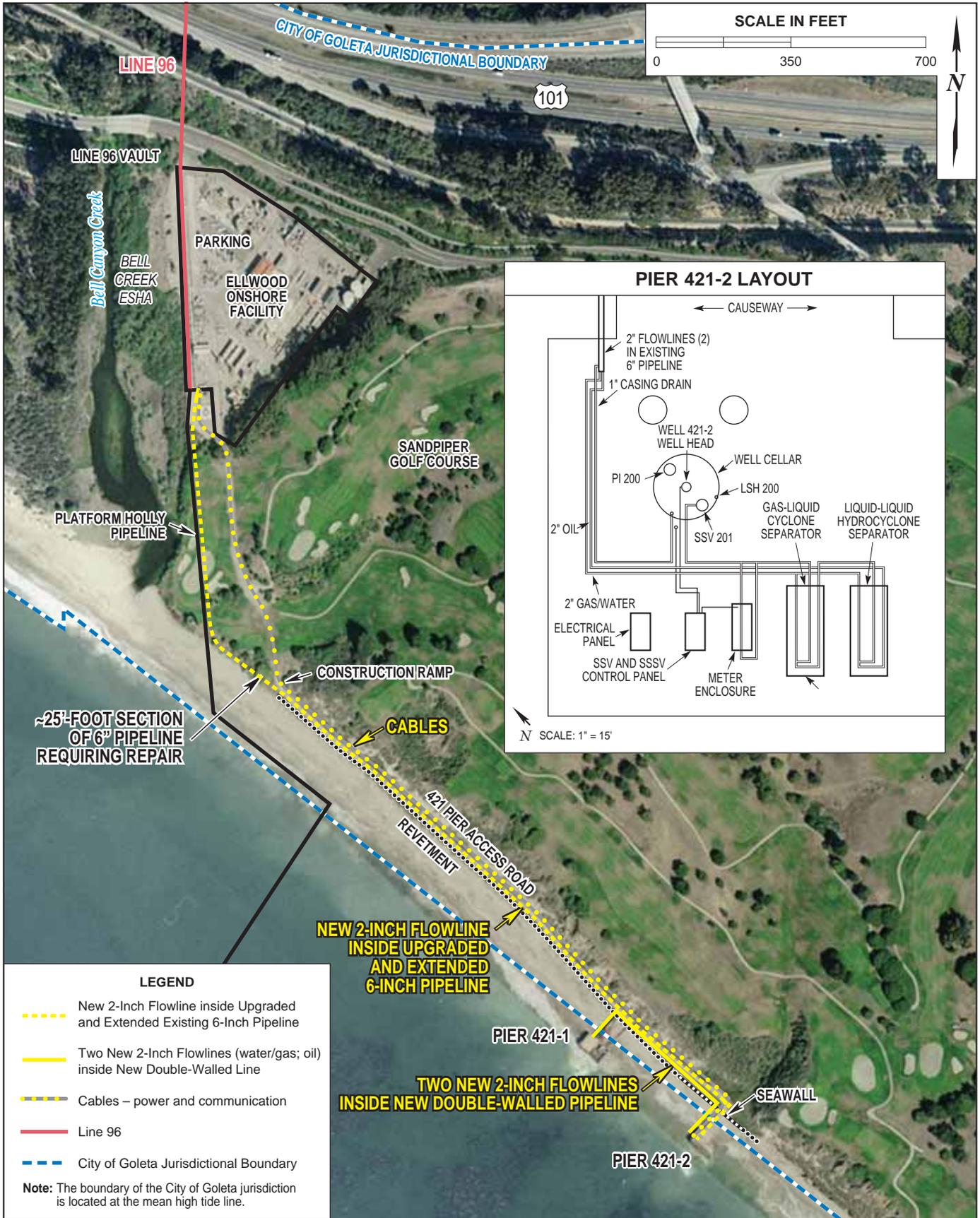
- 20 · The Commission assigned the PRC 421 lease to Venoco in July 1997, which
21 provides Venoco the legal right to produce the lease (lease originally issued in
22 1929; see Table 2-1 for lease history) and
- 23 · When the Commission determines that adequate corrective measures have been
24 taken and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

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

² California Code of Regulations, Title 2, Division 3, section 2121 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.

³ 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 There was no detectable gas production when Well 421-2 produced in 2001 for a short-
2 term period to conduct emergency depressurization. However, the GLCS is designed
3 based on typical properties for California oils at the well depth, for which the gas-oil ratio
4 is estimated to be 100 standard cubic feet per stock tank barrel (SCF/STB). The GLCS
5 is a compact vertical vessel with a tangential nozzle located near the top that subjects
6 incoming fluids to a hydraulically created vortex and centrifugal forces, causing the
7 heavier liquid particles to separate and thus obtaining split liquid and gas streams. The
8 LLCS, which is used to separate out the water, is a similar vessel that would be installed
9 next to the GLCS.

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

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

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

- 1 · Installation of a Lease Automatic Custody Transfer (LACT) system for Well 421
2 oil before introduction to Line 96; and
- 3 · Reactivation of the oil well on Pier 421-2, with projected production as indicated
4 for the Project in Section 2.4.1, Volumes and Throughput.

5 As part of this alternative, the existing 6-inch line would be hydrotested to 100 psig and
6 internally lined with a new plastic coating. The 6-inch line would be protected against
7 external corrosion by enhancing the impressed current cathodic protection system on
8 the Platform Holly pipelines to include the PRC 421 6-inch shipping line. After the
9 upgrades to the 6-inch pipeline preparation are complete, a new 2-inch steel coiled or
10 non-metallic (e.g., fiberglass) flowline would be inserted inside the existing 6-inch line to
11 transport oil to Line 96. Additionally, a double-walled line would replace an existing 2-
12 inch flowline between Well 421-2 and Well 421-1. Two new 2-inch flowlines (one for
13 water and gas, one for oil) would be installed inside the new double-walled line.
14 Electricity would be provided to Pier 421-2 via two cables buried within a 30-inch-deep,
15 12-inch-wide, 2,500-foot-long trench located within the easement through Sandpiper
16 Golf Course and down the dirt access road.

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

25 **Environmental Impact Analysis**

26 The impacts and MMs from the No Project Alternative are similar to the proposed
27 Project, with the exception of those impacts associated with processing oil on Pier 421-
28 2 and returning Pier and Well 421-1 to use as an injection well. Table 5-3 provides a
29 summary of the impact and mitigation measure differences between the two
30 alternatives. As part of the No Project Alternative, there are 12 project impact
31 differences and 14 MMs that would be modified, in response to the production and
32 processing of oil on Pier 421-2 and the disposal of waste water and gas on Pier 421-1,
33 in comparison to the proposed Project. All other project impacts and MMs not identified
34 in Table 5-3 are the same for both the proposed Project and the No Project Alternative.

Table 5-3. No Project Alternative Comparison to the Proposed Project

Impacts of Proposed Project	No Project Alternative	
	Impact Differences	Mitigation Measure (MM) Modifications
Impact GEO-1	Impact includes Pier 421-1 and associated infrastructure	MM GEO-1a MM GEO-1b MM GEO-1c MM GEO-1d MMs modified to include Pier421-1
Impact GEO-3 Impact GEO-4 Impact S-2 Impact S-4	Impacts include Pier 421-1	MM GEO-3 MM GEO-4c MM S-2a MM S-3 MM S-4b MM S-4d MMs modified to include Pier 421-1
Impact S-5	Impact modified for connection to Line 96	
Impact S-8	Impact modified for processing on 421-2 and Line 96 connection	
Impact HAZ-1	Impacts include Pier 421-1	MM HAZ-1a MM modified for PRC 421 Pier operations; no Pier 421-1 decommissioning
		MM HAZ-1c MM modified to remove Pier 421-1 removal/ decommissioning component
		MM HAZ-1d MM modified to remove Pier 421-1 removal/ decommissioning component and adding construction activities for Pier 421-1
Impact HAZ-2	Impact includes Pier 421-1	
Impact WQ-3	Impact includes Pier 421-1	MM WQ-3a MM modified for connection to Line 96
Impact MBIO-1 Impact MBIO-2 Impact TBIO-1	Impact modified to remove decommissioning/removal activities of Pier 421-1	MM MBIO-1 MM modified to remove reference to Pier 421-1 removal
Impact TBIO-3	Impact includes Pier 421-1	
Impact LU-2	Impact includes processing on PRC 421 piers	
Impact LU-3 Impact VR-2	Impacts includes Pier 421-1	

1 *Geological Resources*

2 Impacts related to this alternative would be similar to the Project; however, there would
3 be a combination of new and recommissioned facilities that would be vulnerable to
4 impacts associated with the geologic hazards, including new oil separation equipment
5 on Pier 421-2 and the recommissioned Pier 421-1, as well as flowlines between the two
6 piers. As a result of the additional facilities, Impacts GEO-1, GEO-3, and GEO-4 would
7 be greater than under the Project, but they would remain less than significant with
8 mitigation with the use of the same MMs as the Project (MMs GEO-1a through GEO-1d,
9 GEO-2a through GEO-2c, GEO-3, and GEO-4a through GEO-4d). However, several of
10 these MMs would need to be modified to include Pier 421-1 (see Table 5-3 above).
11 Impact GEO-2 and GEO-5 would remain the same as under the Project.

12 *Safety*

13 This alternative would increase potential safety impacts compared to the project,
14 because of the new and recommissioned facilities, including the new oil separation
15 equipment on Pier 421-2 and the recommissioned Pier 421-1; while the potential
16 impacts related to a spill at the EOF would be reduced from those associated with the
17 Project. Impacts S-1, S-3, S-5, and S-6 would remain the same as under the Project.
18 The risk of fire with this alternative (Impact S-8) would be greater than the Project, as
19 additional infrastructure and oil handling would occur within the surf zone, with greater
20 wave and corrosion exposure increasing the risk of accident and fire.

21 The new and recommissioned facilities associated with this alternative would increase
22 potential impacts related to potential collapse of caisson walls and/or potential release
23 of oil or hazardous materials from Pier 421-2; however, the level of significance
24 associated with these impacts would remain the same as under the Project. Impact S-2,
25 related to a potential collapse of caisson walls, would be greater due to the continued
26 presence of Pier 421-1; however, this impact could be mitigated to a less than
27 significant level with implementation of MM S-2a. MM S-2a would be modified to require
28 design review and wave loading evaluation for Pier 421-1 in addition to Pier 421-2.
29 Improvements to the caisson on Pier 421-1 would be similar to the proposed Project
30 (Figure 2-4). The potential for a release of oil or hazardous materials from Pier 421-2
31 into the marine environment or nearby sensitive habitats, Impact S-4, would increase
32 due to the presence of separation equipment on Pier 421-2, and the potential quantity
33 released would be 12.5 barrels. In addition, produced water would be injected from Pier
34 421-1 over open water. This impact is already considered significant and unavoidable,
35 so the level of significance would remain the same.

36 *Hazardous Materials*

37 Impacts related to this alternative would be similar to the Project, including potentially
38 significant Impacts HAZ-1 and HAZ-2, and would require implementation of the

1 proposed MMs as well as expansion of these measures to cover potential impacts from
2 the continued use of Pier 421-1 as a reinjection facility (see Table 5-3 above). HAZ-1
3 would require the implementation of MMs HAZ-1a through HAZ-1d, to reduce this
4 impact to a less than significant level. MM S-2a would be expanded to include a design
5 review and wave loading evaluation for Pier 421-1 to determine whether this facility
6 would require improvements prior to recommissioning. Improvements to the caisson on
7 Pier 421-1 would be similar to the improvements on Pier 421-2 for the proposed Project
8 (Figure 2-7). These measures would reduce the risk of exposing the public and the
9 environment to hazardous materials due to collapse of the caisson on Pier 421-1 or
10 421-2 such that Impact HAZ-2 would be less than significant with mitigation.

11 *Air Quality and Greenhouse Gases (GHGs)*

12 Emissions would be similar to the Project, with some differences due to the relocation of
13 oil processing and use of Pier 421-1 for reinjection. Operation of separation equipment
14 on Pier 421-2 would result in greater fugitive emissions as compared to the use of
15 existing equipment at the EOF under the Project; however, these increases would be
16 minor and emissions would remain far below the annual threshold of significance of 25
17 tons per year, and impacts associated with operation would remain less than significant.
18 Because Pier 421-1 would remain in place, no construction emissions would be
19 associated with removal of this structure; however, MMs associated with this alternative
20 would require repair of the caisson walls at Pier 421-1. This would produce emissions
21 associated with operation of construction equipment, worker trips, hauling of demolition
22 material, delivery of materials and equipment. MMs AQ-1a through AQ-1e would apply
23 to this alternative to reduce emissions from construction activities. Emissions from
24 construction activities would remain below the threshold of 25 tons per year and would
25 remain less than significant. GHG emissions under this alternative would be similar to
26 the Project and MM AQ-4 would apply.

27 *Hydrology, Water Resources, and Water Quality*

28 Impacts related to this alternative would be greater than for the Project, with potentially
29 significant impacts WQ-1 and WQ-2 and significant Impact WQ-3 being more severe
30 due to additional oil infrastructure in the surf zone and greater potential for accidental
31 releases from the GLCS. As under the Project, implementation of MMs HAZ-1a through
32 HAZ-1d, WQ-1a, WQ-1b, WQ-2, TBIO-1a, TBIO-1b, TBIO-1d, and TBIO-1e would be
33 required and would reduce impacts WQ-1 and WQ-2 to a less than significant level.
34 MMs described in Section 4.2, Safety, would apply to this alternative, and
35 implementation of these measures would reduce the risks of an oil spill that would
36 impact the marine environment and surface water quality. Additionally, MM WQ-3a and
37 WQ-3b would reduce the risk of an oil spill and increase emergency preparedness in
38 the case of a spill. Although the risk of an oil spill is very low, the potential for a release

1 into the marine environment and surface waters still exists and would be greater under
2 this alternative, and therefore Impact WQ-3 would be significant.

3 *Marine Biological Resources*

4 Impacts related to this alternative would be generally more severe than for the Project,
5 with Impacts MBIO-1 through MBIO-6 applying to this alternative. Impacts MBIO-1,
6 MBIO-2, MBIO-3, and MBIO-6 related to construction and kelp harvesting would have
7 the same level of significance as under the Project, both before and after MMs are
8 implemented. Because Pier 421-1 would remain in service, repairs may be required to
9 the caisson walls, as per MM S-3, which would be modified for this alternative (see
10 Table 5-3 above). All MMs that apply to the Project would also apply to this alternative,
11 with some being modified to cover potential caisson repairs at Pier 421-1 in addition to
12 those currently addressed at Pier 421-2. MMs that would need to be modified to include
13 activity at Pier 421-1 are MMs MBIO-1a, MBIO-3a, and MBIO-3b. All other MMs related
14 to marine biological resources that apply to the Project would be implemented in the
15 same manner under this alternative as in the Project, including MMs HAZ-1c, HAZ-1d,
16 WQ-1a, WQ-1b, and NZ-1a through NZ-1c. Resulting impacts after mitigation would be
17 the same as under the Project.

18 However, Impacts MBIO-4 and MBIO-5 related to oil spills would be more severe than
19 under the Project because larger volumes of oil would be present on Pier 421-2 and
20 separation equipment located on the pier would be vulnerable to upset or damage from
21 storms, waves, and corrosion. The risk of a spill in the marine environment is low under
22 either the Project or this alternative; however, any level of risk of an oil spill would be
23 considered significant since impacts from an oil spill would be significant and
24 unavoidable. MMs MBIO-4a and MBIO-4b would apply to these impacts under this
25 alternative. These measures would help to reduce potential impacts associated with an
26 oil spill; however, these impacts would remain significant and unavoidable.

27 *Terrestrial Biological Resources*

28 Impacts related to this alternative would be more severe than for the Project due to oil
29 processing occurring on Pier 421-2, with Impacts TBIO-1 and TBIO-2 applying to this
30 alternative. Impact TBIO-1 would be the same under this alternative as under the
31 Project, and the associate mitigation measures, MMs TBIO-1a through TBIO-1f, would
32 apply to this alternative; these measures would reduce this impact to a less than
33 significant level. Impact TBIO-2 would be considered a significant impact under this
34 alternative, as it is under the Project. This alternative presents a slightly higher risk of an
35 oil spill occurring due to the presence of the separation equipment on Pier 421-2. The
36 risk of a spill in the marine environment is low under either the Project or this alternative;
37 however, the risk would be increased under this alternative and any level of risk of an oil
38 spill would be considered a significant impact since a spill would result in significant and

1 unavoidable impacts. MMs TBIO-2a and TBIO-2b would apply to this alternative, and
2 would help to mitigate impacts associated with an oil spill; however, this impact would
3 remain significant and unavoidable.

4 *Land Use, Planning, and Recreation*

5 Land use impacts from this alternative would be more severe than those associated
6 with the Project, with LU-1 through LU-3 being significant impacts, as under the Project;
7 however, these impacts would be greater due to the increased risk of an oil spill
8 associated with the use of separation equipment that would be located in the surf zone
9 on Pier 421-2. City Policy 10.1 supports County consolidation policies that prohibit the
10 permitting of new oil and gas processing facilities in Goleta. As provided under Impact
11 LU-1 in Section 4.8.6, production from PRC 421 is not defined as “new production”
12 under the County’s consolidation policy, therefore oil production on PRC 421 is not
13 subject to the consolidation policy. This alternative, however, potentially conflicts with
14 Policy LU 10.4 which states that the city does not support recommissioning of PRC 421
15 due to environmental risks and specifically opposes on-pier processing of oil within the
16 tidal zone unless it is demonstrated that there is no feasible and less environmentally
17 damaging alternative. This alternative would conflict with Policy 10.4 in that Impact LU-1
18 would be more severe due to processing on the pier.

19 Impacts LU-2 and LU-3 address potential impacts related to a release of oil from PRC
20 421 to recreation and to sensitive area resources, respectively. These impacts are both
21 significant under the Project, and would remain significant under this alternative. Due to
22 the increased risk of a spill associated with the presence of the separation equipment
23 on Pier 421-2, these impacts would be slightly greater than under the Project.
24 Implementation of MMs outlined in Sections 4.1, Geological Resources; 4.2, Safety; 4.3
25 Hazardous Materials; 4.5, Hydrology, Water Resources, and Water Quality; 4.6, Marine
26 Biological Resources; and 4.7, Terrestrial Biological Resources would reduce the risk of
27 a spill and the resulting impacts if a spill were to occur; however, these impacts would
28 remain significant and unavoidable.

29 *Public Services*

30 Impacts associated with this alternative would be similar to the Project, with both Impact
31 PS-1 and PS-2 and MMs PS-1 and PS-2 applying to this alternative. Both of these
32 impacts would be potentially significant, as under the Project, and could be mitigated to
33 a less than significant level. Presence of the separation equipment on Pier 421-2 may
34 present a slightly higher risk of fire than processing at the EOF; however, the risk would
35 be very low and the increase in risk over the Project would be incremental. Therefore,
36 the impacts associated with this alternative would be consistent with those associated
37 with the Project.

1 *Transportation and Circulation*

2 Transportation impacts associated with this alternative would be similar to the Project,
3 with Impacts TR-1 through TR-3 and MMs TR-1a and TR-1b applying to this alternative.
4 All of these impacts would be less than significant, as under the Project, and would be
5 further reduced through mitigation. Pier 421-1 would not be decommissioned and
6 removed, so there would be no impact associated with this activity; however, caisson
7 walls at Pier 421-1 would be repaired similar to the caisson repairs under the Project
8 (Figure 2-4). This activity, if necessary, would increase construction traffic during the
9 initial construction period; however, impacts would still be of a short duration and would
10 remain less than significant.

11 *Noise*

12 Noise impacts associated with construction under this alternative would be similar to the
13 Project, with Impacts NZ-1 ~~and NZ-2~~ and MMs NZ-1a through NZ-1c applying to this
14 alternative. ~~Both of these~~ This impacts would be less than significant, as under the
15 Project, and ~~with NZ-1 being~~ would be further reduced through mitigation. Pier 421-1
16 would not be decommissioned and removed, so there would be no noise impact
17 associated with this activity; however, caisson walls at Pier 421-1 would be repaired
18 similar to the caisson repairs under the Project (Figure 2-4). This activity, if necessary,
19 would increase construction noise during the initial construction period; however,
20 impacts would still be of a short duration and would remain less than significant.

21 Noise impacts associated with operation of this alternative would be increased from
22 those associated with the proposed Project and discussed under Impact NZ-2 due to
23 the presence of oil processing equipment on Pier 421-2; however, they would remain
24 less than significant. Noise from this equipment has the potential to disturb recreational
25 users in the vicinity of PRC 421-2, including beach users and golfers at Sandpiper Golf
26 Course. The use of a downhole ESP pump would eliminate the need for surface
27 pumping equipment and the noise associated with the above-ground oil pumping
28 equipment. However, occasional gas emissions from the proposed cyclonic separators
29 could create periodic very brief (less than 1 minute) noise levels of up to 85 decibels on
30 the A-weighted scale (dBA) at 50 feet. While these periodic bursts of noise would be
31 noticeable to beach goers and users of Sandpiper Golf Course, their short duration and
32 episodic nature would not noticeably alter ambient noise levels in the Project vicinity.
33 Therefore, long-term noise impacts to recreational users of the beach and surrounding
34 area associated with operation of this alternative would be less than significant.

35 *Aesthetic/Visual Resources*

36 Aesthetics/visual resource impacts associated with this alternative would be somewhat
37 more severe than for the Project. Impact VR-1 and visual resources from construction
38 activities would remain similar to the Project because this alternative would have the

1 same construction period and would be performed in the same general area, although
2 there would not be a second round of construction would occur with decommissioning of
3 Pier 421-1 since PRC 421-1 would not be decommissioned under this alternative. MMs
4 VR-1a through VR-1e would reduce this impact from potentially significant to less than
5 significant. Impact of visual effects due to accidental oil spills, Impact VR-2, would be
6 somewhat more severe as the potential for a spill would be greater under this
7 alternative than under the Project due to the presence of the separator equipment on
8 Pier 421-2. The risk of a spill would be very low; however, potential impacts to visual
9 resources are still considered significant, as under the Project. Implementation of
10 mitigation measures identified in Sections 4.2, Safety; 4.5, Hydrology, Water
11 Resources, and Water Quality; 4.6, Marine Biological Resources; and 4.7 Terrestrial
12 Biological Resources, would reduce potential impacts, but they would still remain
13 significant. Beneficial Impact VR-3, Visual Improvements due to Removal of Pier 421-1,
14 would not occur since this facility would be put back into operation and would not be
15 decommissioned and removed until after PRC 421 production ceases. Impact VR-4
16 related to visual impacts associated with alteration of Pier 421-2 would be less severe
17 due to limited construction on that caisson and would remain less than significant.

18 *Cultural, Historical, and Paleontological Resources*

19 Under this alternative, increased handling of oil on the piers would incrementally
20 increase the risk of a spill; however, as with the Project, MM CR-1 would reduce these
21 impacts to a less than significant level.

22 *Energy and Mineral Resources*

23 Energy requirements for this alternative would be the same as the Project in which
24 expected electricity usage would be approximately 80 kilowatts (kW), or 0.701 gigawatt
25 hours (GWh)/year.

26 *Socioeconomics and Environmental Justice*

27 This alternative would not disproportionately affect minority or low-income populations
28 or result in a substantial disproportionate decrease in the employment and economic
29 base of minority and/or low-income populations in the area. The presence of separation
30 equipment on Pier 421-2 would increase the risk of an oil spill, which could affect the
31 residents of Isla Vista; however, as discussed Section 4.15, the demographics of Isla
32 Vista do not qualify the community as a disadvantaged population within the CSLC's
33 Environmental Justice Policy.

1 5.3.2 No Production/Quitclaim State Oil and Gas Lease PRC 421

2 Description

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

13 CSLC staff indicated that the pressure build-up could potentially cause oil releases into
14 the coastal environment as the increased pressure would place pressure on historic
15 abandoned wells in offshore areas of the reservoir or possibly lead to additional
16 releases of oil from a natural seep. Many of the offshore wells were abandoned in the
17 1940s and 1950s using abandonment and well-capping techniques of that period, which
18 are not adequate by current standards (refer to Section 4.2.1). The structural stability of
19 older abandoned facilities is unreliable and a substantial increase in reservoir pressure
20 could cause a release of oil to the coastal environment.

21 Given current conditions – PRC 421 is shut-in and all other wells that once tapped the
22 reservoir have been abandoned – there is no active well penetrating the reservoir into
23 which pressure-testing equipment can be inserted; consequently, no mechanism
24 currently exists to conduct pressure testing of the reservoir to determine the extent of
25 possible pressure build-up. Additionally, Venoco is under no obligation to pressure test
26 the wells or the reservoir. Thus, if the wells remain shut-in, pursuant to a quitclaim of the
27 lease, and there is a release of oil within the PRC 421 vicinity that causes
28 environmental damage, an oil spill response would occur once the release is reported
29 and an investigation by the State would commence to find the cause. The determination
30 of the cause would occur at the time of a spill and would depend on the facts involved
31 with such an incident. As noted above, possibilities in the event of a release may
32 include oil coming from a natural seep as a result of naturally occurring repressurization
33 or a leak from an old, improperly abandoned well; therefore, it is difficult to monitor such
34 possibilities.

35 The subsequent consequence of this alternative would be a future decommissioning of
36 the PRC 421 infrastructure, following either legislative authorization for the necessary
37 appropriations or the conclusion of litigation requiring payment, including the piers,
38 access road and seawall, and pipelines and any associated required clean up or site

1 remediation. Specifics on decommissioning would be addressed in the Abandonment
2 and Restoration Plan to be prepared and submitted to the CSLC, CCC, and the City of
3 Goleta and would require applicable environmental documentation such as a Mitigated
4 Negative Declaration (MND) or an EIR.

5 **Environmental Impact Analysis**

6 *Repressurization*

7 As noted above and in Section 4.2.1, Safety, the CSLC has concerns about the
8 potential repressurization of the Vaqueros Reservoir, leading to oil leaks from wells that
9 were abandoned in the 1940s and 1950s and the impact of any such releases to marine
10 waters, coastal habitats, recreation, public access and other public trust resources and
11 values. Based upon the thresholds identified in this EIR, any such release of oil into the
12 environment could create potentially significant indirect impacts to affected marine,
13 nearshore, and estuarine environments similar to those identified in Impacts S-4, HAZ-
14 1, WQ-3, MBIO-4, MBIO-6, MBIO-7, TBIO-2, LU-3, VR-2, and CR-2. No leaks from
15 existing abandoned wells have been documented and insufficient data exist to quantify
16 the actual potential for such leaks to occur, their exact location, or the size of such
17 leaks; however, given the possibility of leaks this presents a significant and unavoidable
18 impact. A consequence of the alternative would be that the CSLC may need to contract
19 with an operator to temporarily produce the reservoir in order to conduct pressure
20 testing as described above before final disposition of the facilities.

21 *Geological Resources and Safety*

22 Until all PRC 421 facilities are fully abandoned, potentially significant impacts could
23 occur through partial collapse of the caissons, particularly the non-seaward facing walls
24 of Piers 421-1 and 421-2 which have not been repaired (see Impacts GEO-1, GEO-4;
25 S-2). In addition, while damage to sections of the aging timber bulkhead, or under-
26 engineered portions of the seawall protecting this bulkhead, could be of concern due to
27 the possible release of potentially contaminated soil into the surf, impacts would be less
28 than those identified for the Project as damage to the existing 6-inch line would not have
29 the potential to release oil or produced water into the environment (see Impacts S-3, S-
30 4; and HAZ-2).

31 Project facilities, including the caissons and seawall show signs of weathering, aging
32 and damage typical of structures exposed to continual marine action. Repairs to the
33 seaward-facing caissons of Pier 421-1 in 2004 and Pier 421-2 in 2011 addressed some
34 of these adverse conditions, but not all. Under this alternative, these facilities could
35 potentially remain shut in for an extended period of time and be exposed to continued
36 damage from waves and potential seismic activity. As discussed under Impacts S-2 and
37 S-3 above, age, corrosion, weathering, past caisson collapses and undocumented
38 construction techniques create concerns over the long-term stability of these structures.

1 In addition, the gaps in the seawall and uncertain stability of the aging timber bulkhead
2 may expose these facilities to damage. Possible damage to these facilities over an
3 extended decommissioning process could expose these facilities to damage and the
4 potential for accidental release of contaminated soil, sand and potentially residual oil.
5 The risk of fire with this alternative (Impact S-8) would be lower than under the Project
6 as oil would not be produced or transported, although a potential for fire at the PRC 421
7 piers would remain until such time and decommissioning and proper well abandonment
8 is completed.

9 *Hazardous Materials*

10 This alternative would avoid the potential for contaminated sediment to be encountered
11 during construction activities; potential effects during decommissioning the facilities
12 would be evaluated in a separate analysis. Until PRC 421 is fully abandoned, impacts
13 could occur through the partial collapse of the caissons or damage to the seawall (see
14 Section 4.2.5, Safety). Such a collapse and the subsequent release of contaminated
15 sediment would result in impacts similar to those described for the Project (see Impact
16 HAZ-2), which would be less than significant with mitigation. The decommissioning of
17 PRC 421 would include eventual site investigation and remediation and would be
18 addressed in an Abandonment and Restoration Plan and evaluated in a separate
19 environmental document. However, until decommissioning is complete, Impact HAZ-2
20 would remain.

21 *Air Quality and GHGs*

22 Under this alternative, Venoco would not recommission PRC 421 and there would be no
23 long-term air quality and GHG impacts associated with Project start-up and operation.
24 Specifics on any future decommissioning and related impacts to air quality would be
25 addressed in an Abandonment and Restoration Plan and evaluated in a separate
26 environmental document.

27 *Hydrology, Water Resources, and Water Quality, Marine Biological Resources, and* 28 *Terrestrial Biological Resources*

29 Until PRC 421 is fully decommissioned, potentially significant impacts could occur
30 through damage to the caissons and seawall and subsequent releases of oil or
31 contaminated materials into the marine environment. Both seaward-facing caissons of
32 both Piers 421-1 and 421-2 have now been repaired under emergency permits;
33 however, other aging caisson faces could be subject to collapse or damage. Such
34 impacts would remain similar to that described in Impacts WQ-3, MBIO-2, and MBIO-4
35 (see also Sections 4.2, Safety and 4.3, Hazardous Materials). As noted in Section 4.2.1,
36 the CSLC has concerns about the potential for pressure to build up in the Vaqueros
37 Reservoir, causing oil to escape from wells that were abandoned in the 1940s and
38 1950s. This concern is based on observations following the 1994 shut-in of the PRC

1 421 wells. The potential for unquantified and uncontrolled releases from previously
2 abandoned wells is of concern because the releases would directly impact marine
3 waters and coastal habitats. Based upon the thresholds identified in this EIR, any such
4 release of oil into the environment could create significant and unavoidable impacts,
5 similar to those identified in Impact WQ-3. Although it is not possible to precisely
6 quantify the potential for such leaks to occur, their exact location or the size of such
7 leaks, any release of oil into the environment would be considered an unavoidable and
8 significant impact.

9 *Land Use, Planning, and Recreation*

10 Under this alternative, Venoco would not recommission PRC 421. The PRC 421 wells
11 would remain shut-in until the supporting infrastructure could be decommissioned (the
12 potential effects of decommissioning would be analyzed in a separate evaluation). Until
13 the PRC 421 is fully abandoned, potentially significant impacts could occur through
14 collapse of the caissons, which would result in impacts similar to those of the Project
15 (see Impacts LU-1, LU-2, S-2). In addition, while damage to sections of the aging timber
16 bulkhead or under-engineered portions of the seawall protecting this bulkhead could be
17 of concern due to the possible release of potentially contaminated soil into the surf,
18 impacts would be less than those identified for the Project as damage to the existing 6-
19 inch line would not have the potential to release oil or produced water into the
20 environment (see Impact S-3). Although quitclaiming the lease and decommissioning of
21 the structures under this alternative would be consistent with the City Policy LU 10.4,
22 Venoco has a current and valid lease and a vested right to produce PRC 421.

23 *Public Services*

24 Because the PRC 421 would not be recommissioned, this alternative would not result in
25 the need for a fire prevention plan or an incremental addition to the demand for SBCFD
26 services. Therefore, there would be no impacts to publicly provided fire prevention and
27 emergency services.

28 *Transportation and Circulation and Noise*

29 Because the PRC 421 would not be recommissioned, this alternative would avoid the
30 majority of impacts associated with production, transfer, and transport of crude oil
31 produced from PRC 421. No construction activities associated with the Project would
32 occur; therefore no related traffic and noise would be generated and there would be no
33 impact to transportation resources and noise. Traffic and noise generated from
34 decommissioning activities is unquantified and would be analyzed in a future
35 environmental document. If there was a leak from abandoned wells in the vicinity due to
36 repressurization of the Vaqueros Reservoir, both on- and off-shore traffic and noise
37 would increase during cleanup. Given uncertainty over volumes and locations of leaks,

1 it is not possible to identify traffic and noise impacts, which would likely involve a limited
2 number of auto and marine vessel trips over the short term.

3 *Aesthetic/Visual Resources*

4 Until the PRC 421 is fully abandoned, potentially significant impacts could occur if
5 damage to the caissons occurred (see Section 4.2.5, Safety). Such damage and any
6 subsequent release of oil contaminated sands onto area beaches and potentially into
7 the ocean would result in impacts similar to those of the Project (see Impact VR-2).
8 Insufficient data exist to quantify the actual risk that repressurization poses to the area
9 offshore of Goleta; however, the probability that an oil leak could occur, due to
10 repressurization, and the associated changes to visual resources associated with
11 released oil would be considered unavoidable and significant, similar to those of the
12 Project (see Impact VR-2). The eventual removal of components of PRC 421 would be
13 considered a beneficial impact since removal of the piers would allow a greater view of
14 the Pacific Ocean and other sensitive view sheds of the Ellwood-Devereux Coast. If the
15 structural components of PRC 421 are left in place, no change would occur to the
16 existing visual setting. Therefore, there would be no impacts to visual resources.
17 Potential effects of decommissioning would be evaluated in a separate analysis.

18 *Cultural, Historical, and Paleontological Resources*

19 This alternative would avoid the majority of impacts associated with production, transfer,
20 and transportation of crude oil produced from PRC 421. Because no production would
21 occur, the risk of an oil spill would be limited to seepage from inadequately abandoned
22 wells and natural seeps following reservoir repressurization. Although insufficient data
23 exist to quantify the actual potential for such leaks to occur, their exact location or the
24 size of such leaks, impacts associated with any such leaks to cultural resources
25 associated with released oil would be considered less than significant, similar to those
26 of the Project (see Impact CR-2). Impacts associated with any future decommissioning
27 of PRC 421 would be analyzed in a separate document.

28 *Energy and Mineral Resources*

29 The Project would develop an energy resource that would otherwise remain unavailable
30 if the lease is quitclaimed and commercial production does not occur.

31 *Socioeconomics and Environmental Justice*

32 This alternative would not disproportionately affect minority or low-income populations
33 or result in a substantial disproportionate decrease in the employment and economic
34 base of minority and/or low-income populations in the area.

1 **5.3.3 ReInjection at Platform Holly**

2 **Description**

3 Under this alternative, production would resume at PRC 421 as described under the No
4 Project Alternative; however, produced water and gas would be sent to Platform Holly,
5 via a 4-inch utility pipeline, for reinjection, and Venoco would decommission Well 421-1,
6 its caisson, and pier on an accelerated schedule. This alternative would also entail
7 installing a 2-inch pipeline that extends from Well 421-2 to Line 96. The new ESP in
8 Well 421-2 would provide enough pressure to inject oil into Line 96 at up to 1,440 psig.
9 A new 2-inch pipeline for transport of water and gas to the 4-inch utility pipeline would
10 be installed within the 6-inch pipeline along with the 2-inch oil pipeline. A 4-inch sub-sea
11 utility pipeline currently extends from the EOF to Platform Holly and is used to provide
12 California Public Utilities Commission (PUC)-grade gas to the platform for use as the
13 flare purge and pilot fuel and fuel for the three Holly drilling generators. Under this
14 alternative, this pipeline would instead be used to ship produced water and gas for
15 disposal at Platform Holly. Therefore, initial disposal of produced water at Platform Holly
16 would require Venoco to cease using the utility line for natural gas and instead use
17 annulus gas produced at Platform Holly which has higher sulfur content than PUC gas.
18 To accommodate the use of (or sweeten) the annulus gas, Venoco would need to install
19 new equipment (H₂S scrubbers) and implement operational changes at Platform Holly
20 subject to review and approval by the Santa Barbara County Air Pollution Control
21 District (APCD) and other regulatory agencies. Presuming use of the existing line, this
22 alternative would require that Venoco use gas produced at Platform Holly to power
23 equipment locally. Because this gas has higher sulfur content than the gas currently
24 used at the platform, new equipment (H₂S scrubbers) and operational changes would
25 be required at Platform Holly.

26 The following improvements would be required under this alternative:

- 27 · Installation of new decking and railings on Pier 421-2;
- 28 · Installation of a downhole ESP, stainless steel equipment enclosures, and new
29 oil separation equipment (GLCS and LLCS) on Pier 421-2;
- 30 · Installation and operation of two new 2-inch pipelines, one to transfer oil to Line
31 96 and one to transfer produced water and gas to the 4-inch utility line for
32 reinjection at Platform Holly;
- 33 · Installation of H₂S scrubbers on Platform Holly;
- 34 · Upgrades to the existing 6-inch line from Pier 421-2 to Line 96;
- 35 · Installation and operation of buried power cables to Pier 421-2 to operate the well
36 and associated control systems;
- 37 · Installation of a communication system between Well 421-2 and the EOF;

- 1 · Installation of surveillance cameras on Pier 421-2 that would monitor the pier and
- 2 provide a live video feed that would be displayed in the EOF Control Room;
- 3 · Installation of a LACT system for PRC 421 oil before introduction to Line 96;
- 4 · Reactivation of the oil well at Pier 421-2, with projected production as indicated
- 5 for the Project in Section 2.4.1, Volumes and Throughput; and
- 6 · Decommissioning of Pier 421-1 as described for the Project (see Section 2.6,
- 7 Decommissioning and Removal of Pier 421-1).

8 **Environmental Impact Analysis**

9 The impact analysis for the Reinjection at Platform Holly Alternative would essentially
10 be the same as those described under the No Project Alternative with regards to
11 processing the oil on Pier 421-2, which would incrementally increase impacts compared
12 to the Project due to increased risk of an oil spill in the surf zone. This increased impact
13 would include the following issue areas:

- 14 · Hazardous Materials
- 15 · Hydrology, Water Resources, and Water Quality
- 16 · Marine Biological Resources
- 17 · Land Use, Planning, and Recreation
- 18 · Aesthetic/Visual Resources

19 Impacts from decommissioning Pier 421-1 would be the same as the Project, although
20 with the transport of separated water and gas to the 4-inch sub-sea utility pipeline for
21 injecting at Platform Holly would incrementally increase impacts offshore compared to
22 the Project due to a possible leak or rupture of the 4-inch pipeline.

23 **5.3.4 Processing PRC 421 Oil at Las Flores Canyon**

24 **Description**

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

1 The pipeline from the EOF to LFC would run parallel to and north of Hwy 101 and
2 existing Line 96 along Calle Real, which traverses many private parcels. The emulsion
3 produced at PRC 421 would remain in a three-phase state (oil/gas/water) before being
4 processed at LFC. As such, the existing Line 96 pipeline could not be used to transport
5 the PRC 421 emulsion product as it would be incompatible with the processed oil
6 currently transported from the EOF to the PAAPLP Coastal Pipeline for distribution.⁴
7 This alternative would also require additional infrastructure both at PRC 421 and at LFC
8 to enable pumping of the PRC 421 emulsion product to LFC, processing of the product
9 at the LFC facility, and disposal of produced water. The following detailed description
10 was provided by Venoco in consultation with ExxonMobil due to the required
11 infrastructure needs at LFC.

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;
- 20 · Decommissioning and abandonment of Pier 421-1 and Well 421-1 (refer to
21 Section 2.6, Decommissioning and Removal of Pier 421-1);⁵
- 22 · Installation of a new 3.826-inch pipeline with cathodic protection extending
23 approximately 0.5 mile between PRC 421 and the tie-in adjacent to the EOF, with
24 the existing 6-inch pipeline abandoned in place or removed;
- 25 · Installation of a new 3.826-inch pipeline with cathodic protection from the tie-in
26 south of and adjacent to the EOF extending approximately 8.4 miles parallel to
27 and north of Hwy 101 to reach LFC, and 1.3 miles north within the LFC/
28 ExxonMobil property along Corral Canyon Road to the Receiving Station at LFC;
- 29 · Construction of a new oil dehydration plant and oil and water storage tanks at
30 LFC; and
- 31 · Construction of a Class II Underground Injection well at LFC.⁶

⁴ 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.

⁵ This assumes that a Class II Underground Injection well can be constructed at LFC.

⁶ In the event that an injection well cannot be constructed at the LFC a water disposal pipeline from the LFC back to the EOF or PRC 421 could also be required.



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

4 *Reactivation of Pier 421-2 and Well 421-2*

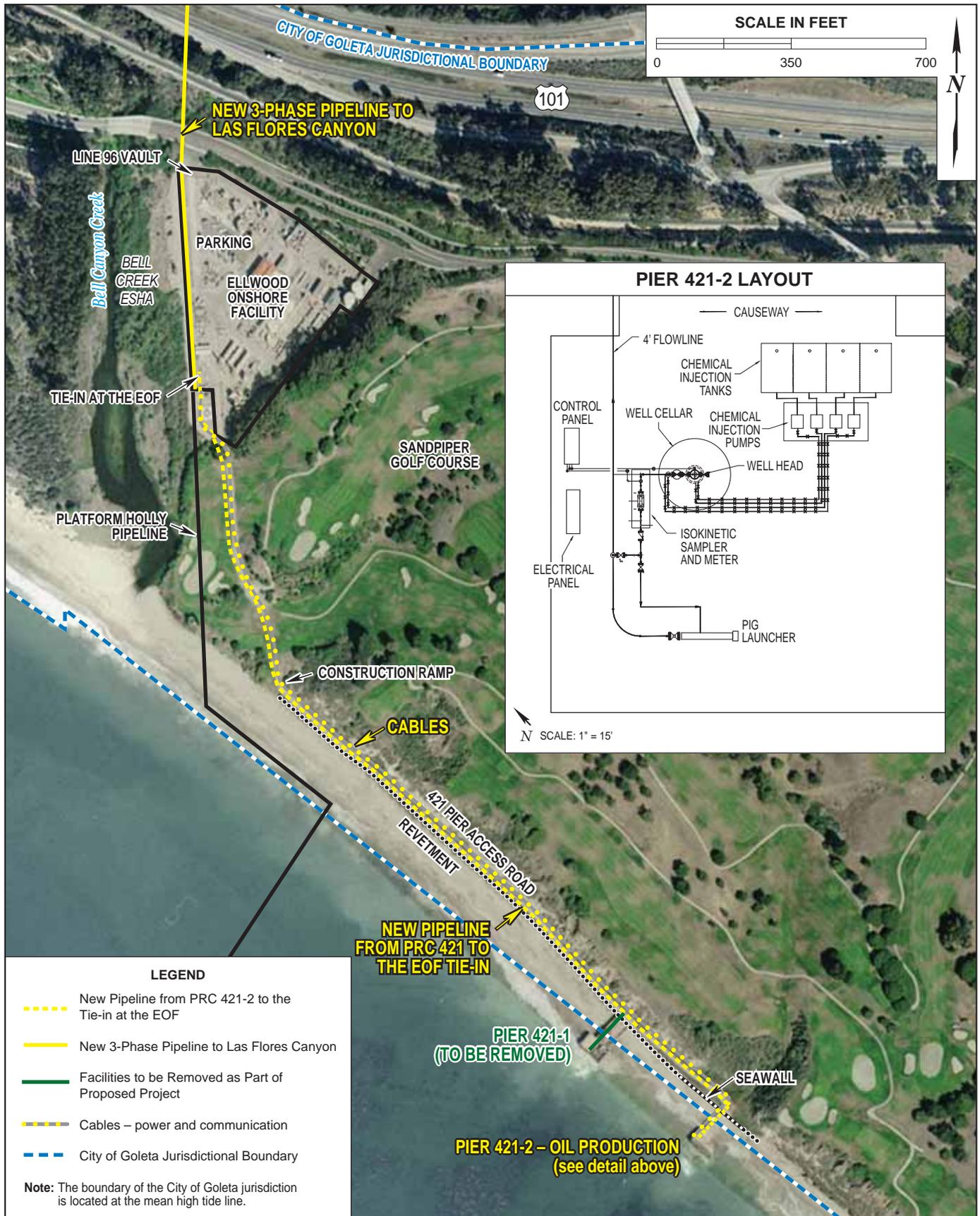
5 Well 421-2 would be returned to service as an oil production well as provided in Section
6 2.2, Proposed Project, and includes the installation of:

- 7 · A new ESP deep inside (approximately 2,000 feet below ground level) the casing
8 of Well 421-2 and associated stainless steel equipment enclosures;
- 9 · A new power cable from the EOF to the ESP;
- 10 · A new power cable from the EOF to Pier 421-2 to power metering, well
11 instrumentation, and control systems;
- 12 · Well safety equipment;
- 13 · Connecting piping and a pig launcher connection;
- 14 · Provisions for process monitoring and control between Pier 421-2 and the EOF;
- 15 · New wood-plank decking and replacement railings on around the perimeter of
16 the Pier 421-2 deck for safety and aesthetic purposes;
- 17 · A communication system, including a cable between Pier 421-2 and the EOF;
- 18 · A surveillance camera mounted on Pier 421-2 that would monitor the piers and
19 would provide live video feed displayed in the EOF Control Room; and
- 20 · Reactivation of Well 421-2.

21 Under this alternative, several other modifications and additional infrastructure at Pier
22 421-2 and Well 421-2 would be required compared to the Project (Figure 5-3) and
23 include the following:

- 24 · A larger ESP would be required to be used for both drawing produced
25 oil/gas/water emulsion to the surface as well as pumping the product
26 approximately 10.2 miles from Pier 421-2 to the LFC Receiving Station.
27 Additionally, the ESP would need to operate at a higher discharge pressure of
28 approximately 700 psig, as opposed to 100 psig with the Project, in order to
29 minimize gas breakout and slugging in the pipeline.⁷ This increased pressure
30 would require an approximately 42 percent increase in brake horsepower.
31

⁷ Slugging is the accumulation of a water, oil or condensate in a gas pipeline. Liquids tend to settle on the bottom of the pipeline, while gases occupy the top. Under certain operating conditions gas and liquid are not evenly distributed throughout the pipeline, but travel as large plugs with mostly liquids or mostly gases through the pipeline. These large plugs are called slugs.



- 1 · Installation of a 10-gallon isokinetic sampler and oil storage bottle adjacent to the
2 wellhead at Well 421-2 to obtain representative samples of a flowing three-phase
3 stream (i.e., oil, gas, water) to facilitate accurate analysis of the produced fluid
4 compensation prior to transportation through the new pipelines to LFC.
- 5 · Installation of a check meter to collect initial measurements of wellhead
6 production, although three-phase mode (oil, water, and gas) production would
7 limit accurate metering.
- 8 · Four chemical tanks ranging from 55 to 350 gallons with 100-percent leak
9 containment to permit injection of chemicals into produced emulsion at Well 421-
10 2 and to accommodate operation and maintenance of the new three-phase
11 pipeline. Chemical injection would help offset the effects of cooling of emulsion
12 along the pipeline route, with subsequent drop-out of asphaltines and paraffin
13 and emulsion tightening, and to provide for pipeline corrosion protection.⁸

14 The above configuration assumes that the new pipeline to LFC would operate with the
15 three-phase emulsion product (also known as “tightlining”). The ability to tightline is
16 dependent on several factors, including the gas/oil ratio (GOR), water cut (i.e., the water
17 content in the emulsion), and the type and density of the oil/gas/water emulsion. These
18 variables are currently uncertain and may vary over the productive life of the well. If
19 tightlining is not possible, gas would need to be separated out of the emulsion prior to
20 transportation through the pipeline, which would require the following infrastructure:

- 21 · A 1,000 to 1,500-barrel cone roof breakout tank vented to a vapor recovery unit
22 (VRU) control device on Pier 421-2.
- 23 · Installation of a flare with a propane fuel supply in order to burn off the gas that is
24 separated from the emulsion.
- 25 · An oil shipping pump installed on Pier 421-2 in order to pump the remaining
26 oil/water emulsion from the breakout tank through the new pipeline to LFC.

27 *Decommissioning of Pier 421-1 and Well 421-1*

28 Once production has begun at Well 421-2 and is being processed at LFC, Well 421-1
29 would be decommissioned and Pier 421-1 would be removed, as provided in Section
30 2.6, Decommissioning and Removal of Pier 421-1, of the proposed Project. In the event
31 that produced water cannot be disposed of at LFC through the constructed Class II
32 Underground Injection well (see *Construction of a Class II Underground Injection Well at*
33 *LFC* below), produced water would be routed back to PRC 421 via another pipeline for
34 disposal at Well 421-1. If this were to occur, decommissioning would not occur and the
35 facilities at Pier 421-1 would return to service for water disposal.

⁸ Chemicals may include a scale inhibitor and emulsion breaker (both injected downhole through capillary strings); an anti-waxing agent and an emulsion breaker.

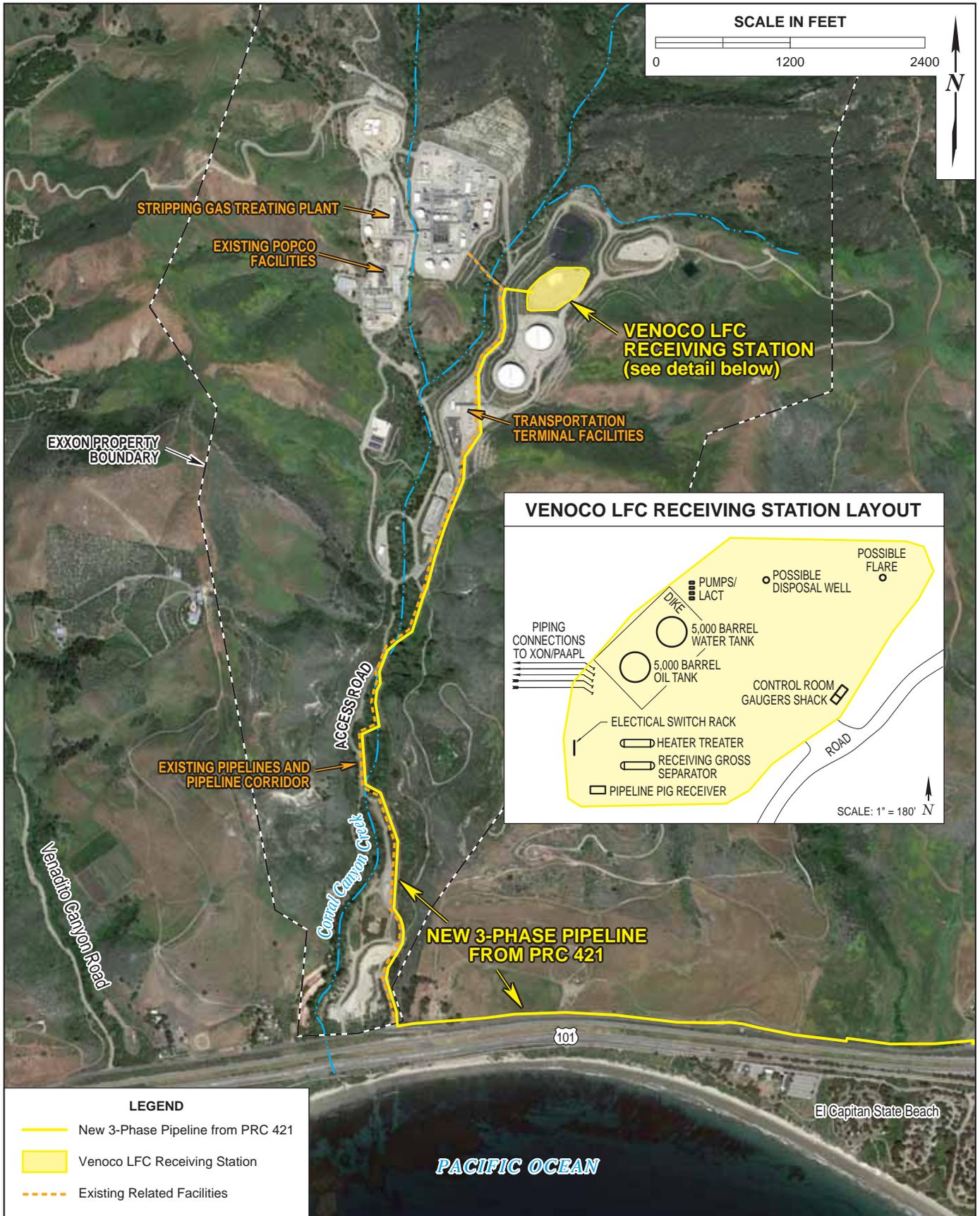
1 *Installation of a New Pipeline between PRC 421 and the Tie-in Adjacent to the EOF*

2 This alternative would require construction of a new 3.826-inch inside diameter and 4.5-
3 inch outside diameter pipeline between PRC 421 and the existing tie-in adjacent to the
4 EOF. The pipeline would need to have at least a 3.826-inch inside diameter to
5 accommodate the pressure drop at the tie-in. Upgrade, extension, and lining of the
6 existing 6-inch pipeline, as proposed under the Project, would not be sufficient since the
7 existing pipe could not reliably support a 3.826-inch lining. Additionally, use of a lining
8 between PRC 421 and the tie-in would hinder the use of cathodic protection for the
9 pipeline between the tie-in and LFC. Therefore, a new underground line would be
10 constructed along the existing access road, ~~following the route of the existing 6-inch~~
11 ~~pipeline and starting from the existing tie-in adjacent to the EOF,~~ extending past Pier
12 421-1 on to Pier 421-2. The new 3.826-inch line would be cathodically protected to
13 reduce potential pipeline corrosion.

14 *Proposed New Pipeline Route to LFC*

15 Pipeline Route and Design: This alternative includes installation of a new three-phase,
16 nominal high-pressure pipeline with a 3.826-inch inside diameter and 4.5-inch outside
17 diameter to transport oil/gas/water emulsion from PRC 421 to the Receiving Station at
18 LFC. The presence of entrained gas will require that this line is operated under high
19 pressure (nominal 700 psig) to reduce break-out of gas and resultant “slugging” of flow.
20 Because the line would have to be operated in three-phase mode, volumetric-based
21 leak detection capability would not be possible; therefore, primary leak detection would
22 be based upon low pressure switches. This new pipeline would run parallel to the
23 existing Line 96 along the north side of Hwy 101, including a northern leg extending up
24 LFC to the ExxonMobil consolidated facility and the proposed Receiving Station
25 (Figures 5-2 and 5-4).

26 The new line would extend approximately 8.4 miles from the tie-in adjacent to the EOF
27 to the entrance of LFC, and approximately 1.3 miles up canyon to the proposed
28 Receiving Station for a total linear distance of approximately 9.7 miles. The specific
29 location of the pipeline within the right-of-way (ROW) north of Hwy 101 would vary,
30 depending on ROW clearances, access for construction easements, and site-specific
31 constraints (e.g., existing trees, fencing, underground utilities, property owner
32 considerations, access, etc.) For much of the route, the new pipeline would be located
33 immediately north (inland) of the existing Line 96, as this pipeline is located adjacent to
34 the Southern California Gas Company and/or Hwy 101 ROW. Subject to Ellwood
35 Pipeline Inc., landowner, and PUC approvals, the new pipeline would be located within
36 the same ROW as Line 96. If feasible, the new pipeline centerline would be preferably
37 located a minimum of 3 feet from the existing centerline of Line 96. This alternative
38 includes a minimum 10-foot pipeline ROW and temporary construction easements of up



1 to 100 feet in width to allow for equipment access, staging, and construction activities.
2 The pipeline would be installed with a minimum of 3 feet of cover.

3 However, several locations along the pipeline route have inadequate room for preferred
4 spacing between the existing Line 96 and the new pipeline; therefore, construction
5 activity may require exposing the existing Line 96 pipeline for safety and to permit
6 minimum separation. Where feasible, the pipeline would be placed largely within
7 existing streets or road ROWs. Approximately 2.7 miles of the pipeline route passes
8 through existing orchards or fallow fields. Wherever possible, the pipeline route would
9 follow existing orchard service roads to minimize impacts to existing orchards and
10 farmland. (Impacts to Agricultural Resources associated with this alternative are
11 discussed under the *Land Use, Planning and Recreation* impacts discussion below).

12 The pipeline would enter the LFC/ExxonMobil property on Corral Canyon Road, and
13 then intersect and run parallel to the existing ExxonMobil pipe bundle for 1.3 miles to
14 the first empty pad, which is the proposed location of the Receiving Station (Figure 5-4).
15 The proposed pipeline would transition to above-ground pipe sleeper (rack) supports
16 before transitioning back to below ground in several places similar to existing pipelines,
17 primarily to avoid disturbance of sensitive resources.

18 Pipeline Leak Detection and Prevention: Low pressure switches would be installed
19 outside of the EOF and at the Receiving Station in LFC in order to detect leaks by
20 monitoring for low pressure in the pipeline (Figure 5-2). In the event of a substantial loss
21 of pressure at either end, the pipeline would be automatically shut down and blocked in.
22 Because the pipeline would carry three-phase oil/gas/water emulsion, the actual
23 properties of the fluid (e.g., density, temperature, bulk modulus, etc.) are expected to
24 change along the pipeline route due to temperature and flow pressure changes.
25 Elevation changes may also result in slug flows as heavier materials such as water
26 accumulate at low points and are later pushed through the pipeline. Additionally, the
27 emulsion delivered to the pipeline is expected to have an ever-changing profile of oil,
28 water, and gas. Consequently, the pipeline pressure would be variable. As such, the
29 accuracy of the leak detection system would be only +/- 15 percent over a 4-hour
30 period. Flow upsets could further reduce accuracy to +/- 40 percent until flow equilibrium
31 is reestablished.⁹

32 Mainline Block Valves (MBV) would be installed at both ends of the new pipeline.
33 Additional block valves would be located on the east side of Eagle Canyon Creek, on
34 the east side of Dos Pueblos Creek, near the intersection of Rancho Cañada and El

⁹ The leak detection system would compare the volume of material that goes in and out of the pipeline. Field measurements would be corrected for pressure, temperature, and density, and then compared to measurements at the Receiving Station. With an oil/water emulsion, accuracy of +/- 5 percent over a 4-hour period is possible, but gas makes the system “spongy” and results in occasional slug flows, which reduce accuracy. Accuracy of the existing Line 96 is +/- 5 percent over a 4-hour period.

1 Capitan Ranch Road, and near the intersection of Calle Real and Corral Canyon Road.
2 Check valve stations would be installed to prevent reverse flow in the pipeline and
3 guard against release of product to the environment in case of catastrophic failure or
4 dig-in damage at certain low points. Check valves would be located on the west side of
5 Eagle Canyon Creek, the west side of Dos Pueblos Creek, the west side of Las Llagas
6 Canyon, and near the departure point out of Calle Real near the delivery facility. MBVs
7 and check valves would be accessible from the EOF in approximately 20 to 30 minutes.

8 In order to reduce potential corrosion of the pipeline, a cathodic pipeline rectifier and
9 associated anodes would be installed at the Receiving Station to provide cathodic
10 protection to the entire length of the new pipeline.¹⁰

11 Pipeline Construction: Pipeline construction activities would include excavation, pipeline
12 installation, welding, pipefitting, pipeline coating, carpentry, electrical, and general labor,
13 and would be performed using one construction "spread" that groups construction
14 equipment (e.g., backhoes and track hoes) to move sequentially along the pipeline
15 route, clearing, trenching, laying in pipe, backfilling, and cleaning up. Highway, railroad,
16 and creek/drainage crossings, block valve installation, and major street intersections
17 would be accomplished by construction crews supporting the spread.

18 The pipeline trench would generally be 2 feet wide and 6 feet deep, accommodated
19 within an approximately 100-foot wide construction corridor. Pipe handling would be
20 performed using pipe-string trucks and side-boom tractors to transport and place the
21 pipeline segments. Pipes would be bent, welded, and coated at joints as required to
22 follow the proposed pipeline alignment. Pipes would then be lowered into the trench
23 using side-boom tractors, and the ditch would be backfilled with trench spoils and
24 compacted using a roller or hydraulic tamper. All welds would be visually and x-ray
25 inspected prior to pipeline burial, and hydrostatic testing of the pipeline would be
26 performed after construction and prior to startup.

27 The proposed pipeline to LFC would:

- 28 · Cross 19 creeks and drainages that drain into creeks or the ocean; and
- 29 · Require four HDDs and two horizontal slick bores to cross beneath six
30 creeks/drainages (refer to Table 5-4 and Figure 5-2).

¹⁰ Cathodic protection is a method of protection that connects protected metal to a more easily corroded "sacrificial metal" to act as the anode. The sacrificial metal then corrodes instead of the protected metal.

Table 5-4. Location, Type, and Length of Anticipated Bore Holes

ID*	Location	Type of Bore	Length
1	Bell Creek	Horizontal Directional Drill	522 feet
2	Eagle Canyon Creek	Horizontal Directional Drill	808 feet
3	Dos Pueblos Creek	Horizontal Directional Drill	743 feet
4	Unnamed drainage	Horizontal Directional Drill	905 feet
5	Unnamed creek	Slick Bore	86 feet
6	Unnamed drainage	Slick Bore	322 feet

* The identification (ID) number is used to show the location of the bore in Figure 5-2.

1 Most drainages would be crossed by placing the pipe within existing roadbed or earth
2 above an existing drainage structure, avoiding the need for boring beneath the
3 creek/drainage. HDDs and slick bores under creeks would require entry and exit pits for
4 each bore, work areas at either end of the bore, and the use of drilling fluid. Entry and
5 exit pits for HDDs would be approximately 10 to 15 feet wide by 10 to 30 feet long and a
6 maximum of 6 feet deep. The work areas would be approximately 0.5 acre in size for
7 the entry pit and a 0.25 acre for the exit pit. For slick bores, entry pits would be 15 feet
8 wide by 35 feet long and exit pits would be 10 feet wide by 10 feet long; these pits
9 would be 10 to 20 feet deep. The work areas would be highly disturbed by heavy
10 equipment, including a drilling rig, construction equipment, and vacuum trucks to handle
11 drilling fluids. Drilling fluids would be used during both HDD and slick boring in order to
12 lubricate the drill stem and carry cuttings to the surface. The entry pits would double as
13 capture pits for drilling fluid that returns from the bore hole.

14 Within the ExxonMobil property, the new pipeline would primarily follow the existing
15 pipeline route, including sections that are elevated above the ground to avoid sensitive
16 areas underground. Due to the relatively small (4.5-inch) outer diameter of the proposed
17 pipeline, additional pipe supports (above and beyond what is provided by ExxonMobil)
18 may be installed to support the pipe within acceptable span limits. Geotechnical
19 investigations and drilling of new caissons for the new supports would likely be required.
20 Drilling of caissons would entail the use of a drilling rig for soil borings and drilling and
21 setting of sono tubes. These tubes are expected to be approximately 10 to 12 inches in
22 diameter and placed at about four to eight feet in depth.

23 Because pipeline construction would occur predominantly adjacent to paved streets, no
24 extensive grading would be proposed and no construction of roads or bridges would be
25 anticipated. Temporary diversion of streams or stabilization of soil to support heavy
26 equipment is not expected to be required at any of the crossings. Where in-street work
27 is required, preparation would include breaking and removing pavement with concrete
28 saws, pavement breakers, and where necessary, with jack hammers. The broken debris
29 would be hauled off to approved landfill sites or to a crusher plant using dump trucks.
30 Construction would generally take place in off-peak periods, including night construction

1 where permitted, to minimize impacts to traffic and industrial or commercial business
2 activities. Temporary alternative vehicle and pedestrian access would be established.

3 *Construction of a New Oil Dehydration Plant at LFC*

4 Due to lack of capacity at existing LFC facilities, this alternative would include
5 construction of a new oil dehydration plant at the Receiving Station in LFC (Figure 5-
6 4).¹¹ This plant would include a FWKO unit of roughly 3 by 5 feet in diameter for
7 removal of free water and gas. Oil emulsion would then be routed to a small heater-
8 treater for emulsion breaking and final separation of water. The heater-treater would be
9 heated using an exchange medium, fired using natural gas. Produced water separated
10 from the emulsion would be routed to a water polishing process, where entrained gas
11 and oil would be further separated from the water. This process may additionally require
12 heat in order to accomplish final separation.

13 Oil that is separated during this process would be stored, tested, and then injected into
14 the PAAPLP Coastal Pipeline for transfer. The oil would first be deposited and stored in
15 a 5,000 barrel capacity tank at the Receiving Station. The oil would then run through a
16 LACT unit to measure the volume and quality of the oil. If the oil does not meet the
17 specifications for basic sediment and water (BS&W), it would be processed a second
18 time through the dehydration plant or batch treated until it passes these composition
19 inspections. Once the oil meets specified standards it would be transferred to the
20 transportation terminal facility via a new pipeline that would be routed alongside existing
21 ExxonMobil pipelines to the PAAPLP pump station, and then directly injected into the
22 PAAPLP Coastal Pipeline.

23 Oil dehydration would generate a small and widely variable produced gas stream. Gas
24 produced is expected to be sweet, with only trace amounts of H₂S. Although activation
25 of PRC 421 is expected to produce as much as 200 thousand standard cubic feet per
26 day (MSCFD), production would be variable since it is subject to significant “slug” flows
27 inherent from three-phase operation of the approximately 10.2-mile-long pipeline
28 system from PRC 421 to the Receiving Station. During the initial operation,
29 instantaneous flow rates may be higher, reaching as high as 1,500 MSCFD. A new
30 compressor would be used to compress this gas for metering into the ExxonMobil
31 produced gas stream, approximately 1,100 psig. The produced gas would be
32 transferred to the ExxonMobil gas processing facility via a new pipeline, and then
33 admitted into this system for treatment and distribution.

¹¹ The LFC facility is owned and operated by ExxonMobil. The Applicant contacted ExxonMobil to discuss potential commingling of production. ExxonMobil responded that they have capacity to allow for PRC 421 gas to be commingled and processed along with their production; however, they lack processing capacity to admit additional wet crude oil into their dehydration plant.

1 The oil dehydration plant, oil storage tanks, and LACT unit, as well as any additional
2 ancillary structures would be constructed on the Receiving Station at LFC. These new
3 facilities would require a minimum of 1 to 1.5 acres. Anticipated construction activities
4 would entail operation of heavy equipment such as bulldozers, backhoes, and rollers to
5 construct new mat foundations, utility infrastructure, and support buildings for wet oil
6 processing at LFC. Additionally, new pipelines would be constructed to transfer gas and
7 processed oil to facilities within LFC. Construction activities would include potential
8 trenching for installation of below-ground pipes and drilling for construction of caissons
9 to support above-ground pipes.

10 *Construction of a Class II Underground Injection Well at LFC*

11 Produced water disposal would be required for all process water that is removed from
12 the oil/gas/water emulsion at the new LFC dehydration plant. Existing disposal of
13 produced water from LFC is performed offshore at Platform Harmony under U.S.
14 Environmental Protection Agency (USEPA), Region 9 National Pollutant Discharge
15 Elimination System (NPDES) General Permit No. CAG280000; however, this permit
16 does not allow for disposal of produced water from PRC 421 production.¹²

17 Due to these restrictions, produced water would be disposed via a new Class II
18 Underground Injection well at LFC. Construction of the well would be subject to the
19 underlying hydrogeology and its suitability for accommodating produced water injection
20 and would require permitting and approval by Santa Barbara County prior to
21 construction. Additional studies would need to be performed prior to construction and
22 permitting of the well to determine if the geology could support operation of the well.

23 In the event that the underground injection well at LFC was not approved, water would
24 be pumped back to PRC 421 for reinjection at Well 421-1. This would require that an
25 additional pipeline be constructed from LFC to PRC 421 in order to transport process
26 water approximately 10 miles back to the existing injection well on Pier 421-1. This
27 produced water pipeline would be constructed parallel to and within the same trench as
28 the new oil emulsion pipeline described above. Continued use of Well 421-1 and Pier
29 421-1 would require that these facilities remain in operation for the life of the Project and
30 would not be decommissioned.

¹² NPDES General Permit No. CAG280000 specifically states “This permit does not authorize discharges from facilities discharging to or in territorial seas of California or from facilities defined as “coastal”, “onshore”, or “stripper” (see 40 Code of Federal Regulations [CFR] Part 435, Subparts C, D, and F).” Because the produced water which is separated from PRC 421 oil comes from State Leases, it is not possible to provide for offshore disposal in Federal waters using the existing NPDES permits; unless such permit can be opened and formally amended to permit such disposal.

1 *Operations*

2 Operations would remain similar to the Project, with primary monitoring, control and
3 emergency response provided by the EOF which is manned by a minimum of four
4 personnel, 24 hours per day. Specific operational controls at the LFC Receiving Station
5 would include video monitoring and a flow metering station. Venoco would provide daily
6 visual inspection of the facility from personnel operating out of the EOF and the
7 Receiving Station would be fenced to ensure added security. Regular facility inspections
8 would be performed by County personnel. The proposed EOF to LFC pipeline would be
9 monitored from the EOF and the Supervisory Control and Data Acquisition (SCADA)
10 alarm systems would also be monitored from the EOF. The pipeline route would be
11 inspected 26 times per year in accordance with State regulations.

12 *Additional Potential Infrastructure Needs*

13 This alternative may also result in the need for additional infrastructure to support
14 increased power demand and fire protection needs associated with processing PRC
15 421 output at LFC. If additional power demand cannot be met directly by ExxonMobil,
16 this alternative may require a commitment from Pacific Gas and Electric (PG&E) and
17 possible addition of new service lines into LFC in order to meet the anticipated electrical
18 demand. Also, with the expansion of operations at LFC, additional water storage for fire
19 protection would be required onsite. Minor improvements to the existing ExxonMobil fire
20 system may be possible; however, if expansion of the existing system is not possible,
21 then construction of new water wells, pumps, and tanks, and/or new water mains to
22 connect with existing utility systems would be required.

23 **Environmental Impact Analysis**

24 *Introduction to Alternative Impact Analysis*

25 Due to the Processing PRC 421 Oil at Las Flores Canyon Alternative being substantially
26 different from the other alternatives, the analysis for this alternative has been partitioned
27 to address each of the three primary impact areas:

- 28 1. PRC 421 Vicinity Impacts: Construction and operation activities in the vicinity of
29 PRC 421 and the EOF, including reactivation of PRC 421-2, and construction
30 and improvements of related infrastructure;
- 31 2. EOF to LFC Pipeline Impacts: Construction and operation of the new three-
32 phase pipeline from the EOF to LFC; and
- 33 3. LFC Vicinity Impacts: Construction and operation of new facilities at LFC to
34 receive, process, and distribute production from PRC 421.

35 PRC 421 Vicinity Impacts: Under this alternative, potential impacts related to
36 construction and operation in the vicinity of PRC 421 and the EOF would be similar to

1 those identified for the Project due to the similarity of these activities to the Project,
2 including: reactivating PRC 421-2; performing upgrades to Pier 421-2 and Well 421-2;
3 installing process monitoring, facility control, and power components; installing an ESP
4 in Well 421-2; installing new infrastructure on Pier 421-2 (e.g., pig launcher, check
5 valve, safety equipment); constructing power and communication cables between Pier
6 421-2 and the EOF; and decommissioning and abandoning Pier 421-1 and Well 421-1.
7 The primary differences between the Project and this alternative involve the
8 construction of a new 3.826-inch pipeline from PRC 421-2 to the EOF (as opposed to
9 repair, extension, and lining of the existing 6-inch pipeline); installation of additional
10 infrastructure on Pier 421-2 (e.g., chemical tanks, isokenetic sampler, etc.); increased
11 size of the ESP that would be installed in Well 421-2; and transporting oil/gas/water
12 emulsion directly to LFC instead of using the EOF for processing of oil. Therefore, under
13 this alternative, impacts for construction and operation in the vicinity of PRC 421 would
14 generally be similar to the Project; however, impacts associated with use of the EOF
15 would be reduced or eliminated and impacts at PRC 421-2 would incrementally change.
16 Therefore, the analysis for this portion of the alternative relies primarily on the analysis
17 in this EIR for the Project and includes a discussion of how potential impacts would be
18 different for this alternative.

19 EOF to LFC Pipeline Impacts: Construction and operation of the proposed 8.4-mile-long
20 portion of the pipeline from the EOF to the mouth of LFC would have similar impacts to
21 construction and operation of the Line 96 Pipeline Modification Project, which was
22 completed in January 2012. The new pipeline from the EOF to LFC would primarily
23 traverse the same ROW that was analyzed for the Line 96 pipeline in the Line 96 EIR,
24 would require similar construction and operational activities, and would result in similar
25 impacts. Therefore, this analysis summarizes, expands upon as needed, and
26 incorporates by reference impacts and associated mitigation measures from the Line 96
27 EIR for the 8.4 miles of pipeline from the EOF to the mouth of LFC consistent with State
28 CEQA Guidelines section 15152. However, the proposed northern extension of this
29 pipeline that would run for 1.3 miles up LFC along Corral Canyon Road would not follow
30 a route addressed in the Line 96 EIR. Impacts associated with the LFC pipeline to the
31 Receiving Station are addressed in greater detail (see discussion for LFC below).
32 Potential adverse impacts associated with construction of the Line 96 pipeline, as
33 identified in the Line 96 EIR, are summarized in Table 5-5. Findings from the Line 96
34 EIR, including potential impacts and associated mitigation measures, are contained in
35 Appendix I. The full Line 96 EIR is available on the County of Santa Barbara's website
36 at <http://www.sbcountyplanning.org/energy/projects/VenocoLine96.asp>.

Table 5-5. Line 96 EIR Previously Identified Adverse Impacts Relevant to Constructing and Operating a New Pipeline to LFC

Type of Impact	Number of Impacts	Resource Areas Potentially Impacted
Class I: Significant adverse impact that remains significant after mitigation.	5	<ul style="list-style-type: none"> • Hazards and Hazardous Materials • Hydrology, Water Resources, and Water Quality • Biological Resources • Land Use, Planning, and Recreation • Public Services
Class II: Significant adverse impact that can be eliminated or reduced below an issue area's significance criteria.	17	<ul style="list-style-type: none"> • Cultural, Historical, and Paleontological Resources (5) • Geological Resources (3) • Hydrology, Water Resources, and Water Quality (2) • Biological Resources (2) • Agricultural Resources (2) • Transportation and Circulation • Noise • Aesthetics/Visual Resources
Class III: Adverse impact that does not meet or exceed an issue area's significance criteria.	16	<ul style="list-style-type: none"> • Aesthetics/Visual Resources (4) • Public Services (3) • Cultural, Historical, and Paleontological Resources (2) • Agricultural Resources (2) • Geological Resources • Air Quality • Hydrology, Water Resources, and Water Quality • Noise • Energy and Mineral Resources

Source: Line 96 Modification Project EIR

1 The analysis of the proposed pipeline from the EOF to LFC also accounts for lessons
2 learned from environmental monitoring of construction and drilling operations conducted
3 for completion of Line 96 in October 2011. In particular, construction of the new pipeline
4 from the EOF to the mouth at the LFC would involve HDD at four sites and slick bores
5 at two sites in order to run the pipeline under major drainages and other features.
6 Despite inclusion of multiple mitigation measures, during construction of Line 96,
7 several spills, releases of fluids, and “frack-outs” occurred. Details of these releases,
8 clean up, and mitigation responses are included in Appendix J. Construction of the new
9 pipeline may result in similar challenges, especially with regard to HDD at the same
10 locations. Therefore, this past experience was considered during the analysis for this
11 alternative and is included in the discussions for relevant resource areas.

12 LFC Vicinity Impacts: This alternative also includes construction of new facilities within
13 LFC, including 1.3 miles of pipeline and a 1- to 1.5-acre Receiving Station. These new
14 facilities were not considered under the Project or in the Line 96 EIR. Therefore, this
15 alternative has the potential to result in additional impacts at LFC that were not
16 previously identified. Construction and operation of an oil dehydration plant with a
17 FWKO unit, heater-treater, and water polishing unit, 3,000 to 5,000 barrel oil storage
18 tank and several pipelines, a compressor station, a produced water injection well and

1 supporting facilities would all create potential impacts. Construction would require use of
2 heavy equipment and result in ground disturbance within the 1- to 1.5-acre Receiving
3 Station and along the pipeline corridors. Major construction activities at LFC, including
4 mass grading, trenching, and facility construction, as well as operations were analyzed
5 in the SYU/LFC EIR. While these documents were consulted as part of this analysis,
6 distinct impacts were identified based on the description of the alternative and existing
7 conditions at LFC.

8 Analysis of construction and operational impacts of this alternative includes transporting
9 an oil/water/gas emulsion through the new pipeline to LFC (tightlining) and produced
10 water injection at LFC. However, this analysis does not address potential impacts
11 related to additional changes that would need to occur if these elements of the
12 alternative are not possible (e.g., transporting process produced water back to PRC
13 421-1 via pipeline for injection disposal). Therefore, additional analysis would need to
14 be performed prior to implementation of this alternative if tightlining or produced water
15 injection at LFC is not possible.

16 *Geological Resources*

17 PRC 421 Vicinity Impacts: Geologic hazards related to reactivation of PRC 421-2,
18 decommissioning and removal of PRC 421-1, and installation of new power and
19 communication cables between Pier 421-2 and the EOF would be similar to the Project.
20 However, under this alternative, four chemical tanks ranging from 55 to 350 gallons and
21 an isokinetic sampler with a 10-gallon oil storage bottle would be located on Pier 421-2.
22 These new facilities would be potentially vulnerable to impacts associated with geologic
23 hazards, particularly from a seismic event. Therefore, Impacts GEO-1, GEO-3, and
24 GEO-4 would be incrementally more severe than under the Project, but they would
25 remain less than significant with inclusion of MMs GEO-1a through GEO-1d, MMs GEO-
26 2a through GEO-2c, MM GEO-3, and MMs GEO-4a through GEO-4d. Impacts GEO-2
27 and GEO-5 would remain the same as under the project at MMs GEO-2a through GEO-
28 2c would still apply. In the event that use of tightlining to transport the oil/water/gas
29 emulsion from the EOF to LFC is not possible, an additional 1,000 to 1,500-barrel
30 breakout tank, VRU control device, flare, and oil shipping pump would also be located
31 on Pier 421-2, with similar impacts and mitigation measures described above.

32 EOF to LFC Pipeline Impacts: Geologic hazards related to construction of a pipeline
33 between the EOF and LFC would be similar to those identified in the Line 96 EIR,
34 including slope stability, erosion and sedimentation, expansive soils, and faulting and
35 seismic activity , as discussed below.

36 Although most of the proposed pipeline route would traverse gently to moderately
37 sloped terrain and follow existing roads wherever possible, it would cross steep creek
38 banks and limited human-made embankments. Use of directional drilling would

1 minimize grading of steep slopes and sedimentation of creeks and drainages. Impacts
2 under this alternative would be similar to Impact GEO-1 of the Line 96 EIR with potential
3 for ground-disturbance from pipeline construction and/or oil spill remediation to cause
4 localized slumping or erosion of unconsolidated soils. This impact would be less than
5 significant since slumping or erosion would likely be shallow and localized, and would
6 likely not affect the integrity of existing infrastructure.

7 Potential impacts associated with sedimentation of creeks and drainages that cross the
8 pipeline route previously identified in Impact GEO-2 in the Line 96 EIR would be
9 potentially significant, but mitigable with implementation of MM GEO-2, Erosion Control
10 Measures. Under this Alternative, the proposed EOF to LFC pipeline would cross soils
11 with moderate to high expansion potential, which could compromise pipeline structural
12 integrity. This would result in potentially significant impacts similar to Impact GEO-3
13 from the Line 96 EIR. Application of MM GEO-3, Expansive Soil Control Measures, to
14 this Alternative would reduce this impact to less than significant.

15 As discussed in the Line 96 EIR, the proposed pipeline would be constructed in a
16 seismically active region proximate to a number of earthquake faults, but would not be
17 located within an Alquist-Priolo fault rupture hazard zone.¹³ Additionally, no known
18 active or potentially active faults trend towards or traverse the proposed pipeline
19 alignment. Under this alternative, seismic impacts would be similar to those identified
20 under Impact GEO-4 from the Line 96 EIR, and would be potentially significant, but
21 subject to feasible mitigation, including implementation of MM GEO-4a, Implementation
22 of Site-Specific Geotechnical and Seismic Studies Results, MM GEO-4b, Seismic
23 Resistant Design, and MM GEO-4c, Seismic Inspection. MMs GEO-4b and 4c from the
24 Line 96 EIR would help reduce this impact to a less than significant level. MM GEO-4a,
25 Completion of a Site-Specific Geotechnical and Seismic-Hazard Study, and
26 implementation of recommended measures, would be modified to include additional
27 study for the LFC portion of the pipeline, not previously studied and implementation of
28 all recommendations from both studies.

29 LFC Vicinity Impacts: This alternative includes construction of new facilities and
30 increased processing of oil and gas at LFC, within facilities located generally on existing
31 graded pads located approximately 8.4 miles west of PRC 421 and the EOF. The new
32 oil processing and transport facilities, as well as existing gas processing facilities that
33 would support increased throughput, could be susceptible to geological hazards.

34 Installation of a new 1.3-mile pipeline up LFC via Corral Canyon Road and construction
35 of oil processing facilities on up to 1.5 acres on an existing graded Pad in the upper
36 canyon could expose these new facilities to seismic, slope stability and soil hazards.

¹³ Seismic activity is relatively common in the project area. For example a 4.6-magnitude earthquake occurred on May 29, 2013, off the coast of Santa Barbara with the epicenter estimated to be approximately 1.5 miles from the EOF (USGS 2014).

1 Regional active faults in the vicinity, such as the San Andreas, Santa Ynez and Red
2 Mountain Faults, could cause groundshaking with potential damage to proposed
3 facilities. Proposed facilities within LFC could also be exposed to damage hazards, such
4 as expansive soils, landslides, mudflows, and deep creep, particularly along sections of
5 the proposed pipeline corridor. Trenching and grading could also expose soils to
6 erosion with potential for sedimentation into Corral Canyon Creek. These impacts would
7 be considered less than significant with the application available Best Management
8 Practices (BMPs) for erosion control, mitigation measures and construction practices
9 consistent with the California Uniform Building Code and industry standards as set forth
10 in MM GEO-4a (Implementation of Site-Specific Geotechnical and Seismic Studies
11 Results), MM GEO-4b (Seismic Resistant Design), and MM GEO-4c (Seismic
12 Inspection) from the Line 96 EIR.

13 *Safety*

14 PRC 421 Vicinity Impacts: Safety impacts related to this alternative would be more
15 severe than the Project. The existing 6-inch pipeline from Pier 421-1 to the EOF and
16 Line 96 would not be used to transfer oil, and there would be no processing of oil and
17 gas at the EOF as part of this Alternative; therefore, Impacts S-1, S-6, and S-7 and
18 associated mitigation measures would not apply.

19 Safety impacts related to the caisson at Pier 421-2 and the existing timber bulkhead or
20 rip-rap seawall would remain the same; Impacts S-2 and S-3 would remain the same as
21 under the Project. These impacts would remain potentially significant but subject to
22 mitigation through implementation of MM S-2a, MM S-3a, and MM S-3b. Impact S-4
23 would be incrementally more severe and would remain significant and unavoidable due
24 to added potential for release from new facilities at Pier 421-2 (e.g., chemical tanks);
25 implementation of MM S-4a through S-4e would reduce, but not eliminate these
26 impacts. Impact S-5 (potential release from the 3-inch flowline) would remain similar to
27 the Project due to installation of a 3.826-inch pipeline from PRC 421-2 to the EOF, with
28 potential risks and safety impacts. Application of MM S-5a through S-5c, which require
29 pipeline warning markers, development of an Emergency Action Plan (EAP), and safety
30 inspection and maintenance of pipeline, updated to apply to the new pipeline, would
31 reduce these impacts to less than significant. Increased fire hazards identified in Impact
32 S-8 at PRC 421-2 would remain similar to the Project, while those at the EOF would be
33 eliminated, and MM S-8 (Fire Prevention and Suppression) would continue to apply.

34 EOF to LFC Pipeline Impacts: A low frequency risk associated with spills of the
35 oil/water/gas/emulsion from the new EOF to LFC pipeline would be similar to but more
36 severe than Impact S-6 (see also Line 96 EIR Impact H-3) and would be considered an
37 significant and unavoidable impact. Impact severity would be incrementally increased as
38 transport of the three-phase emulsion product would prohibit use of a volumetric-based
39 leak detection system and instead rely upon low pressure leak detectors, which would

1 reduce the effectiveness of leak detention and prevention measures. Application of
2 MMs similar to HM-3 from the Line 96 EIR, which requires installation of automated
3 block valves and check valves, would reduce the severity of this impact, but would not
4 completely eliminate its potential. In addition, increased risk of fire hazards identified in
5 Impact S-8 associated with transport of the oil/water/gas emulsion to LFC would remain
6 similar to the Project, with the addition of a new smaller pipeline along the Line 96
7 corridor. This new pipelines would incrementally increase risk of fire hazards to uses
8 such as Ellwood School and residential areas. MM S-8 (Fire Prevention and
9 Suppression) would need to be modified to ensure that the existing Fire Suppression
10 and Preparedness Plan address the new EOF to LFC pipeline.

11 LFC Vicinity Impacts: Construction and operation of new facilities and increased
12 throughput at existing facilities at LFC would incrementally increase safety risks at LFC
13 associated with a potential oil spill or fire. Under this alternative, new oil processing and
14 conveyance facilities would be constructed within LFC to process the oil/gas/water
15 emulsion from PRC 421. Gas separated from this emulsion would be transferred to
16 ExxonMobil's POPCO facility for processing, thereby increasing throughput at this
17 facility. Although these existing facilities would continue to be operated consistent with
18 industry standards and local, state, and federal regulations, additional processing at
19 LFC would incrementally increase the risk of a release of oil or other hazardous
20 materials at LFC with subsequent release into the environment. Although the probability
21 of an environmental release of oil or other hazardous materials during operations is
22 extremely low, the probability is not zero; therefore, this impact would be significant and
23 unavoidable.

24 Increased processing and associated storage and transportation of hazardous
25 materials, such as liquid natural gas, would increase potential risks related to fire. The
26 severity of this impact could be reduced by developing an EAP to specify measures to
27 be taken in emergency scenarios for the new facilities at the Receiving Station at LFC,
28 as well as an Oil Spill Contingency Plan (OSCP) including site-specific procedures for
29 response to a release from the Receiving Station at LFC, in accordance with applicable
30 State and Federal regulations. Additionally, performance of daily facility inspections to
31 ensure proper function of oil processing and transfer facilities and associated safety
32 mechanisms would further reduce this impact, including immediate clean up or repair of
33 any detected leaks to prevent public exposure to any hazards, as well as installation of
34 spill containment berms at the Receiving Station that could limit releases into the
35 environment, particularly Coral Canyon Creek. Finally, a measure that requires
36 preparation of a Fire Prevention and Preparedness Plan for the new Receiving Station
37 at LFC would be necessary to reduce the risks associated with fires at the new facility.
38 These MMs would reduce potential impacts such that they would be less than
39 significant.

1 *Hazardous Materials*

2 PRC 421 Vicinity Impacts: Potential hazardous materials impacts in the vicinity of PRC
3 421 related to contaminated sediments along the access road at PRC 421-2 or that
4 could be released with decommissioning of PRC 421-1 would be similar to the Project
5 as described in Impacts HAZ-1 (Exposure of the Public or Environment to Hazardous
6 Materials). Application of MM HAZ-1a through HAZ-1e would apply to this Alternative
7 and would reduce impacts to a less than significant level. Impact HAZ-2 (Release of
8 Contaminated Sediment for PRC 421-2 Caisson during Project Operation) would remain
9 similar to the Project under this Alternative and application of MM GEO-4a, MM GEO-
10 4d, MM S-2a, and MM HAZ-1b would reduce this impact to less than significant.

11 EOF to LFC Pipeline Impacts: Construction of the pipeline from the EOF to LFC would
12 require the use of heavy equipment with the potential for accidental release of fuels,
13 oils, and other hazardous materials during construction, as addressed in Impact WQ-2
14 in the Line 96 EIR. Implementation of MMs requiring proper personnel training, as well
15 as development, approval, and implementation of a Spill Prevention Control and
16 Countermeasure Plan (SPCCP), would reduce these impacts to a less than significant
17 level. Potential impacts of spill related to pipeline transportation of the oil/water/gas
18 emulsion are addressed in Safety above.

19 LFC Vicinity Impacts: This alternative includes construction of new facilities and
20 increased processing of oil and gas at LFC, which has the potential to result in a spill of
21 hazardous materials at LFC through routine transport, use, or disposal of such
22 materials, including oils and lubricants during construction activities. Construction under
23 this alternative would require use of heavy construction equipment, such as excavators
24 and backhoes with potential for accidental release of fuels, oils, and other hazardous
25 materials during construction. A release of hazardous materials in LFC may
26 contaminate Corral Canyon Creek, a sensitive water body. Such spills during
27 construction are considered low probability, so while malfunctions or accidents could
28 lead to release of hazardous materials, the incident would be minor and localized. With
29 implementation of applicable MMs such as proper training of personnel and preparation
30 of a Construction Phase SPCCP, which would mandate storage and construction site
31 housekeeping practices, identify parties responsible for monitoring and spill response,
32 and set forth actions required if a spill occurs, impacts would be less than significant.

33 Operation of this alternative would entail increased processing of oil and gas at LFC, as
34 well as associated storage and pipeline transportation of these materials in and
35 between onsite facilities. Potential impacts of spill related to pipeline transportation of
36 the oil/water/gas emulsion are addressed in Safety above.

1 *Air Quality and GHGs*

2 PRC 421 Vicinity Impacts: Potential Air Quality would be similar to the Project in the
3 vicinity of PRC 421 and Impacts AQ-1 through AQ-4 would remain essentially the same;
4 associated mitigation measures (MMs AQ-1a through AQ-1e and MM AQ-4) would
5 continue to apply. Construction of the new 3.826-inch pipeline from PRC 421-2 to the
6 EOF tie-in could require incremental increases in construction beyond the Project with
7 slightly higher air emissions. However, short-term construction emissions addressed in
8 Impact AQ-1 remain less than significant and the same MMs apply.

9 Operational emissions under this Alternative would be similar to or slightly greater than
10 the Project; reductions in emissions from discontinuing processing at the EOF would be
11 offset by increased emissions from processing at LFC. The larger and more powerful
12 ESP at Pier 421-2 would incrementally increase local air emissions from power plants
13 generally outside of the local air basin. Therefore, under this alternative, operational
14 emissions remain similar to the Project and Impact AQ-2 would remain less than
15 significant.

16 Under this alternative, potential odor impacts would be reduced in the vicinity of PRC
17 421 as oil would not be processed at the EOF and potential increased odor impacts to
18 nearby residents would be eliminated. Although minor odors associated with production
19 at PRC 421-2 and transportation from PRC 421 to LFC may occur, Impact AQ-3 would
20 remain less than significant in the PRC-421 vicinity

21 GHG emissions would incrementally increase under this alternative due to operation of
22 a more powerful ESP at Pier 421-2, substantial new construction with associated heavy
23 equipment emissions from installation of the new pipeline and additional facilities at
24 LFC, and the ongoing operation of the new facilities. Under a “zero net increase”
25 threshold for GHG emissions, impacts would be potentially significant. However, this
26 potential impact is addressed by Impact AQ-4 and associated MM AQ-4 (Greenhouse
27 Gas Monitoring and Reduction Strategies) would apply to reduce this impact to less
28 than significant.

29 EOF to LFC Pipeline Impacts: Construction of the new EOF to LFC pipeline would
30 increase emissions due to operation of construction machinery and increased
31 construction traffic. Impact AQ-1 from the Line 96 EIR identified such construction
32 emissions as less than significant and the new pipeline would result in similar
33 emissions, which would not exceed the significance threshold of 25 tons (Table 5-6).
34 MMs AQ-1a (Measures to Reduce Dust Emissions) and AQ-1b (Measures to Reduce
35 NO_x Emissions) from the Line 96 EIR would apply, reducing NO_x emissions by
36 approximately 65 percent.

Table 5-6. Line 96 and EOF to LFC Pipelines Construction Emissions¹

	Annual Emissions (tons/year)				
	CO	ROC	NO _x	SO ₂	PM ₁₀
Line 96 Pipeline Construction	73.49	3.97	20.59	0.49	4.38
Exceeds Significance Threshold of 25 Tons?	N/A	No	No	No	No
New EOF to LFC Pipeline Construction	83.87	4.53	23.50	0.56	5.00
Exceeds Significance Threshold of 25 Tons?	N/A	No	No	No	No

¹ Emissions Calculations for the EOF to LFC pipeline in Table 5-5 include the 1.3-mile extension up LFC.

1 **LFC Vicinity Impacts:** This alternative would create new construction emissions from
2 facility development at LFC, including trenching, grading and excavation, as well as
3 construction of new facilities, such as pipelines, storage tanks and processing
4 equipment. Because overall construction under this alternative would require more
5 construction than the Project, total construction emissions could exceed 25 tons of NO_x
6 emissions in the first year. However, compliance with Rule 804 and implementation of
7 offsets would reduce the impact to less than significant levels. For all other criteria
8 pollutants, construction emissions anticipated in Impact AQ-1 would remain well below
9 25 tons per year. MM AQ-1a and MM AQ-1b would further reduce this impact to a less
10 than significant level.

11 Operational emissions at the LFC under this alternative would be similar to those
12 identified in Impact AQ-2 that would occur at the EOF under the Project, but they would
13 occur at the LFC, an industrialized oil production area removed from urban populations,
14 rather than at the EOF. Therefore, operational emissions impacts at the LFC Facility
15 would be less than significant. Impacts associated with GHG emissions would
16 incrementally increase as discussed above. Under a “zero net increase” threshold for
17 GHG emissions, impacts would be potentially significant. However, this potential impact
18 is addressed by Impact AQ-4 and associated MM AQ-4 would apply to reduce this
19 impact to less than significant.

20 *Hydrology, Water Resources, and Water Quality*

21 **PRC 421 Vicinity Impacts:** Impacts to hydrology and water quality would be similar to
22 the Project, with an incremental increase associated with trenching for construction of
23 the 3.826-inch line between Pier 421-2 and the EOF, and associated temporary
24 construction impacts to marine water quality (Impact WQ-1) and wetlands (Impact WQ-
25 2) would apply. These impacts would remain less than significant with implementation of
26 MM HAZ-1a through HAZ-1d (Personnel Training, Phase I Environmental Site
27 Assessment, Sediment Sampling, Removal Action Plan, Performance Security), WQ-1a
28 (Silt Curtain), and WQ-1b (Water Quality Certification) for Impact WQ-1, and MM WQ-2
29 (Wetland Avoidance) and TBIO-1a through TBIO-1d (Locate Power Cable and Pipelines
30 Outside Wetland Areas, Project Biological Monitors, Restoration Plan, and Protect
31 Stockpiles of Excavated Material) for Impact WQ-2.

1 Impact WQ-3 (Oil Spill Impacts to Surface and Marine Water Quality) would remain
2 similar to the Project due to potential for spills from restarting Well 421-2 and from
3 transporting oil/gas/water emulsion to the EOF through a new 3.826-inch pipeline. While
4 these new facilities would have a low level of risk for leaks or rupture, they are located
5 in close proximity to the marine environment where any size spill has the potential to
6 adversely affect sensitive marine species. As result, impacts would remain significant
7 and unavoidable and MMs WQ-3a (Pipeline Monitoring) and WQ-3b (Storm Water
8 Pollution Prevention Plan) would continue to apply.

9 EOF to LFC Pipeline Impacts: The new EOF to LFC pipeline could impact onshore
10 waterways during construction (e.g., HDD), as well as during operation due to potential
11 leaks. Construction impacts under this alternative would remain similar to those
12 identified under Impact WQ-2 from the Line 96 EIR, including potential sedimentation
13 and impacts to creek water quality and downstream impacts to the marine environment.
14 Impacts would remain potentially significant and mitigation measure WQ-2a
15 (Construction Storm Water Pollution Prevention Program) from the Line 96 EIR would
16 apply. Similarly, construction related impacts to water quality from HDD for the new
17 EOF to LFC pipeline would be similar to those associated with Impact WQ-3 from the
18 Line 96 EIR, as drilling would occur in the same locations and mitigation measure WQ-
19 3b (Frack-Out Contingency Plan) would apply.¹⁴ However, based on experience with
20 installation of Line 96 (e.g., releases into Bell Canyon Creek and sensitive species
21 impacts) and other directional drilling operations, incidents of hazardous material spills
22 or environmental releases of drilling fluids are considered to be reasonably foreseeable
23 and not subject to full mitigation (see Appendix J for details of Line 96 spills). Therefore,
24 under this alternative, Impact WQ-3 would be considered significant and unavoidable
25 and MM WQ-3a would be updated to require a review of the monitoring reports from the
26 construction of Line 96 during development of the frack-out contingency plan.

27 Operation of the new EOF to LFC pipeline would have the potential for rupture or leak
28 and resulting release of oil into the environment, possibly degrading surface and
29 groundwater quality. Therefore, Impact WQ-4 from the Line 96 EIR would apply to this
30 Alternative and MMs WQ-4a (Implementation of a Storm Water Pollution Prevention
31 Plan) and WQ-4b (Non-Point Source Runoff Water Quality Testing) from the Line 96
32 EIR would apply; however, impacts would remain significant and unavoidable.

33 LFC Vicinity Impacts: Construction of 1.3 miles of pipeline and the new oil processing
34 facilities and an injection well at the 1- to 1.5-acre Receiving Site, and operation of
35 these facilities within LFC could adversely affect hydrology, water resources, and water
36 quality along Corral Canyon Creek and within the groundwater basin. Trenching,
37 excavation, and grading for the new pipeline that would closely parallel and cross Corral

¹⁴ During normal drilling operations, drilling fluid travels up the borehole into a pit. When the borehole becomes obstructed or the pressure becomes too great inside the borehole, the ground fractures and fluid escapes to the surface. This is referred to as a "frack-out."

1 Canyon Creek and for the Receiving Station proximate to the creek could lead to
2 sedimentation and potential for polluted runoff to impact creek water quality, particularly
3 where the pipeline closely parallels and crosses the creek. These impacts would be
4 consider potentially significant, but subject to feasible mitigation through application of
5 BMPs identified in MM WQ-3b (Construction Storm Water Pollution Prevention Plan)
6 and MM MBIO-4a (Oil Spill Contingency Plan), which would reduce potential water
7 quality impacts to be less than significant.

8 Operational impacts to creek water quality under this alternative could occur due to
9 accidental spills of oil or other hazardous materials during processing or storage of oil at
10 the Receiving Station or during pipeline transport within LFC, with potential to enter
11 Corral Canyon Creek. The severity of this impact could be reduced by: requiring
12 personnel training; installation of spill containment berms at the Receiving Station that
13 could limit releases into the environment, particularly Coral Canyon Creek; and
14 development and implementation of a SPCCP for new operations at LFC. Although
15 these measures would reduce potential impacts, they would still remain significant and
16 unavoidable due to the presence of sensitive habitat in close proximity to these facilities.

17 Under this alternative, a produced water injection well would be constructed at the
18 Receiving Station in LFC and used to inject the produced water into the groundwater
19 basin. The potential depth of this well is unknown, although in order to provide
20 separation from productive groundwater resources, it is likely to be deep. The Vaqueros
21 and Sespe Formations are important aquifers underlying Corral Creek Canyon and LFC
22 with shallow alluvium also historically providing irrigation water (Science Applications,
23 Inc. 1984). While detailed information on well depth and deeper groundwater
24 characteristics are unknown, produced water injection to the groundwater under this
25 alternative may create potentially significant impacts to groundwater resources. In order
26 to mitigate such impacts, prior to construction, the Applicant would be required to
27 prepare and complete a geologic analysis of underlying geologic formations to
28 determine suitability for injection and possible impacts to groundwater resources. If
29 impacts cannot be avoided or mitigated, groundwater injection would be prohibited. In
30 the event that produced water injection at the Receiving Station is not possible, a
31 produced water pipeline would likely need to be constructed from LFC back to Pier 421-
32 1 for reinjection at Well PRC 421-1. This would require reactivation of PRC 421-1 rather
33 than decommissioning, with this facility remaining in operation for the next 20 or more
34 years.

35 *Marine Biological Resources*

36 PRC 421 Vicinity Impacts: Potential marine biological resource impacts in the vicinity of
37 PRC 421 would be similar to the Project as identified in Impacts MBIO-1 through MBIO-
38 6 related to similar surf zone construction and potential for release of hazardous
39 materials or oil during operations. Potential impacts to grunion spawning would remain

1 similar and application of MM MBIO-1 (Avoid Grunion Spawning Season/Use of
2 Biological Monitor) would reduce this impact to less than significant. Construction-
3 related turbidity and disturbance impacts to invertebrates and other marine organisms
4 identified in Impact MBIO-2 would remain less than significant with application of MM
5 WQ-1a (Silt Curtain), MM WQ-1b (Water Quality Certification), MM HAZ-1c (Removal
6 Action Plan), and MM HAZ-1d (Performance Security). Noise impacts to marine life
7 during construction would remain similar to those identified in Impact MBIO-3 as the
8 same types of construction would occur and would remain less than significant.
9 Operational impacts associated with release of oil to the marine environment as
10 identified in Impacts MBIO-4 through MBIO-6 would remain similar under this alternative
11 due to the similar potential for releases of oil and resultant severity of impacts, with
12 MBIO-4 and MBIO-5 remaining significant and unavoidable and MBIO-6 remaining less
13 than significant. Although backup containment mechanisms are provided, potential
14 release of chemicals from storage tanks on PRC 421-2 may incrementally increase the
15 severity of impacts to marine biological resources associated with accidental releases
16 under this alternative. MM MBIO-4a (Oil Spill Contingency Plan) and MM MBIO-4b (Bird
17 Island Protection Plan), as well as relevant contingency planning and spill response
18 mitigations contained in Sections 4.2, Safety; 4.5, Hydrology, Water Resources, and
19 Water Quality; and 4.7, Terrestrial Biological Resources, would remain applicable to this
20 alternative.

21 EOF to LFC Pipeline Impacts: The new EOF to LFC pipeline would have limited
22 potential for direct impacts to marine biological resources due to its inland location.
23 However, accidental environmental releases or oil spills into creeks due to construction
24 or operation of this alternative as identified in Impacts BIO-2, BIO-3, and BIO-4 from the
25 Line 96 EIR, and releases into the marine environment as discussed in Impact MBIO-4
26 and MBIO-5 could impact marine biological resources located offshore of the 19 creeks
27 and drainages crossed by this potential pipeline. MM MBIO-4a (Oil Spill Contingency
28 Plan) and Line 96 EIR MM BIO-2a (Native Habitat and Special Status Species
29 Protection Plans) and Line 96 EIR MM BIO-2b (Prepare Native Habitat Restoration
30 Plans) would help reduce, but not eliminate potential impacts which would remain
31 significant and unavoidable.

32 LFC Vicinity Impacts: Construction and operation of new oil processing facilities and the
33 proposed 1.3-mile-long pipeline in LFC would generally be well removed from the
34 marine habitats, with the Receiving Station located 1.5 miles from the shoreline.
35 However, all new LFC facilities border or are near to Corral Canyon Creek, which drains
36 to the Pacific Ocean. As such, construction and operational activities at LFC may result
37 in indirect impacts to marine biological species. During construction of the Receiving
38 Station and pipeline, trenching and excavation may expose soils to erosion and
39 operation of heavy equipment may lead to accidental spills with sediment or
40 contaminated runoff moving into Corral Canyon Creek and receiving downstream ocean
41 waters. Such impacts would be considered less than significant with inclusion of BMPs

1 for erosion control, MM WQ-3b (Storm Water Pollution Prevention Plan), and MM TBIO-
2 1d (Protect Stockpiles of Excavated Material).

3 In addition, during project operation, accidental release of oil or other materials from the
4 pipeline or Receiving Station could enter Corral Canyon Creek and potentially reach
5 receiving marine habitats. The pipeline corridor within LFC would run north along
6 Canyon Creek for 1.3 miles and cross the creek four times with most of the pipeline
7 located within 100 feet of the creek. In addition, the Receiving Station is located on a
8 bluff above the creek. Although releases or spills are a low probability, oil or other
9 released materials could be carried downstream into the marine environment. Impacts
10 to marine biological resources would be considered less than significant due to the
11 small quantities likely released, the distance from the shoreline, and the application of
12 MMs WQ-3b (Storm Water Pollution Prevention Plan), MBIO-4a (Oil Spill Contingency
13 Plan), TBIO-2a (Oil Spill Contingency Plan, Biological Resource Protection), and TBIO-
14 2b (Oil Spill Contingency Plan, Habitat Restoration)

15 *Terrestrial Biological Resources*

16 PRC 421 Vicinity Impacts: Potential construction and operational impacts to terrestrial
17 biological resources in the vicinity of PRC 421 would be similar to the Project due to
18 similar effects associated with the reactivation of Pier 421-2 and decommissioning of
19 Pier 421-1. Impact TBIO-1 and construction-related impacts to terrestrial biological
20 resources, particularly wetlands located along the access road, would remain the same
21 as under the Project and would be less than significant with implementation of MM
22 TBIO-1a through TBIO-1f (Locate Power Cable and Pipelines Outside Wetland Areas;
23 Project Biological Monitors; Restoration Plan; Protect Stockpiles of Excavated Material;
24 Equipment Use, Storage, and Maintenance; and Biological Enhancement Activities).
25 These measures would ensure avoidance of Environmentally Sensitive Habitat Areas
26 (ESHA); biological monitoring during construction; and protection, restoration and
27 enhancement of native habitats as part of construction.

28 Operational impacts would also be similar to the Project, with potential for oil spills
29 originating from the PRC 421-2 well, caisson, or vicinity pipelines to impact terrestrial
30 biological resources; however, potential for chemicals to spill from new storage tanks on
31 PRC 421-2 could incrementally increase impact severity. Impacts would remain
32 significant and unavoidable as identified in Impact TBIO-2, with potential impacts to
33 sensitive species, such as the western snowy plover, California least tern, and sandy
34 beach tiger beetle, and sensitive coastal wetlands, such as the Devereux Slough and
35 Bell Canyon Creek Estuary in the vicinity of PRC 421. Although spills are forecast to be
36 small (e.g., 1.7 barrels), MM TBIO-2a (Oil Spill Contingency Plan, Biological Resource
37 Protection) and MM TBIO-2b (Oil Spill Contingency Plan, Habitat Restoration) would
38 serve to reduce, but not fully mitigate this impact.

1 EOF to LFC Pipeline Impacts: Impacts to terrestrial biological resources related to
2 construction, HDD, and potential leaks during operation of the EOF to LFC pipeline
3 would be similar to those identified in the Project and/ or Line 96 EIRs. Trenching,
4 grading, HDD, and installation of the EOF to LFC pipeline could impact rare, threatened,
5 or endangered species (e.g., California red legged frog, tidewater goby) through direct
6 mortality or habitat loss as described in Line 96 EIR Impacts BIO-2 (Construction
7 Impacts on Sensitive Onshore Biological Species) and BIO-3 (Construction Impacts on
8 Onshore Biological Resources, Native Habitat, Wetlands and Drainage to the Ocean).
9 Potential impacts to sensitive aquatic species and habitats from frack-outs would be of
10 particular concern. MMs BIO-2a (Native Habitat and Special Status Species Protection
11 Plan) and BIO-2b (Native Habitat Restoration Plan) from the Line 96 EIR would reduce
12 but not eliminate these impacts. Although the Line 96 EIR found that these measures
13 would fully mitigate impacts, lessons learned (i.e., frack-outs and spills) during Line 96
14 construction indicate that the potential for significant impacts would remain.

15 Operation of the new EOF to LFC pipeline has the potential to result in an accidental
16 spill, with such spills and subsequent cleanup efforts creating potentially significant
17 impacts to environmentally sensitive habitats such as creeks and estuaries and
18 threatened, endangered, candidate and other special status species, as discussed in
19 Line 96 EIR Impact BIO-4. Spills for the proposed pipeline could potentially release
20 dozens or hundreds of barrels of oil into one or more of the 19 creeks and drainages
21 that this pipeline would cross.¹⁵ While the application of MMs such as MM HM-3
22 (Automated Block Valves/ Additional Check Valves) from the Line 96 EIR and MM
23 MBIO-4a (Oil Spill Contingency Plan) would reduce the severity of such an impact,
24 potential impacts from a spill would remain significant and unavoidable.

25 LFC Vicinity Impacts: Construction and operation of 1.3 miles of pipeline and new oil
26 processing facilities on up to 1.5 acres in LFC would occur primarily in previously
27 disturbed areas, but often in close proximity to Corral Canyon Creek. This creek
28 supports more than 3 acres of riverine and freshwater forested/shrub wetland habitat in
29 the vicinity of the oil pipeline and Receiving Station proposed in this Alternative
30 (National Wetlands Inventory 2014). These habitats are likely to support sensitive
31 aquatic species, such as tidewater goby, California red-legged frog, southwestern pond
32 turtle, and southern steelhead trout.

33 Construction of the Receiving Station and pipeline would entail grading, excavation, and
34 trenching primarily within disturbed areas, which could lead to soil erosion,
35 sedimentation, or accidental spills during construction which could directly or indirectly
36 impact Corral Canyon Creek. While the Receiving Station is located on a bluff above the
37 creek, the pipeline would run parallel to and within 100 feet of the creek for 0.50 mile,

¹⁵ For the somewhat larger Line 96 oil pipeline, the Line 96 EIR estimated that a low of a potential 40 barrels could be spilled into Dos Pueblos Creek and a high of 237 barrels into Las Llagas Creek.

1 including a 500-foot reach that supports areas of recovering riparian vegetation, as well
2 as creek-crossings at four locations. Construction in these reaches could create direct
3 and indirect impacts to the creek and sensitive resources similar to the types of impacts
4 (for other Gaviota area streams) described in Impact BIO-2 (Construction Impacts on
5 Sensitive Onshore Biological Species) and Impact BIO-3 (Construction Impacts on
6 Onshore Biological Resources, Native Habitat, Wetlands and Drainage to the Ocean) in
7 the Line 96 EIR. Given the primarily disturbed nature of these areas and the absence of
8 directional drilling, MMs BIO-2a (Native Habitat and Special Status Species Protection
9 Plan) and BIO-2b (Native Habitat Restoration Plan) from the Line 96 EIR would reduce
10 these impacts to less than significant.

11 Operational impacts under this Alternative would also have the potential to impact
12 terrestrial biological species due to the transport of oil/water/gas emulsion through 1.3
13 miles of pipeline and oil processing at the Receiver Station. Although the chances of
14 operational oil spills from these facilities is extremely low, the proximity of the pipeline
15 and Receiver Station to Corral Canyon Creek, the potential for accidental releases, and
16 the presence of special status species and Environmentally Sensitive Habitats would
17 create potentially significant impacts to terrestrial biological resources. Although spills
18 are forecast to be small and of low probability, application of MMs TBIO-2a (Oil Spill
19 Contingency Plan, Biological Resource Protection) and TBIO-2b (Oil Spill Contingency
20 Plan, Habitat Restoration) as well as MMs Bio 2a and Bio 2b from the Line 96 EIR
21 would serve to reduce, but not fully mitigate this impact which would remain significant
22 and unavoidable.

23 *Land Use, Planning, and Recreation*

24 PRC 421 Vicinity Impacts: Oil processing would be consolidated at the LFC consistent
25 with City of Goleta General Plan and Santa Barbara County Coastal Plan policies.
26 Enlargement, expansion, or extension of the EOF's nonconforming use as prohibited by
27 the City of Goleta Municipal Code would not occur. Avoidance of using the EOF would
28 reduce, but not eliminate, potential conflicts with adopted policy identified under Impact
29 LU-1. Oil would still be produced at PRC 421 in conflict with the City's General Plan
30 Policy LU 10.4, which does not support recommissioning oil production at PRC 421 due
31 to potential impacts to coastal waters. Therefore, Impact LU-1 would remain significant
32 and unavoidable. MMs LU-1a through LU-1c would reduce but not eliminate this
33 potential conflict with the City of Goleta's General Plan and municipal code.

34 Similar to the Project, Impacts LU-2 and LU-3 would remain significant and unavoidable,
35 as recreational uses and sensitive resources could be impacted by a low probability
36 small volume oil spill from Pier 421-2 and associated pipelines. Implementation of
37 applicable MMs identified for reinforcement of caisson containment walls and
38 contingency planning and spill response in Sections 4.2, Safety (MMs S-2a, S-2b, S-3,
39 S-4a through S-4e, S-5a through S-5c, and MM HM-3 from the Line 96 EIR); 4.5,

1 Hydrology, Water Resources, and Water Quality (MMs HAZ-1a through HAZ-1d, WQ-
2 1a, WQ-1b, WQ-2, WQ-3a, WQ-3b); 4.6, Marine Biological Resources (MMs MBIO-1a,
3 HAZ-1c, HAZ-1d, MBIO-4a, and MBIO-4b); and 4.7, Terrestrial Biological Resources
4 (MMs TBIO-1a through TBIO-1f, TBIO-2a, and TBIO-2b) would reduce these potential
5 impacts, but they would remain significant and unavoidable.

6 EOF to LFC Pipeline Impacts: Similar to Impact LU-1 from the Line 96 EIR,
7 transportation of oil by the new EOF to LFC pipeline would be consistent with Santa
8 Barbara County's Local Coastal Program (LCP) policies that require offshore oil
9 production be transported by pipeline. Even so, as identified in Impact LU-3 of the
10 Project EIR, operation of the new EOF to LFC pipeline may result in accidental oil
11 releases that would impact ESHA in the 19 creeks and drainages that would be crossed
12 by this pipeline. Therefore, while this alternative would be consistent with the intent of
13 adopted policy to use pipelines as a preferred method for oil transportation, the low
14 probability of release of substantial oil into creeks that qualify as ESHAs would result in
15 significant and unavoidable impacts. MM WQ-3b (Construction Storm Water Pollution
16 Prevention Plan) and MM MBIO-4a (Oil Spill Contingency Plan) would reduce but not
17 eliminate this impact.

18 Grading and excavation for construction of the EOF to LFC pipeline, as well as potential
19 oil spills from this pipeline, have the potential to adversely affect agricultural resources
20 and agricultural land uses, similar to impacts discussed under Impacts AG-1 (Loss of
21 Resources, Construction and Soil Disturbance) and AG-2 (Loss of Resources, Pipeline
22 Leak or Spill) in the Line 96 EIR. Implementation of MMs similar to MM AG-1 (Soil
23 Replacement and Replanting) and MM AG-2 (Restoration after a Leak/Spill) from the
24 Line 96 EIR would reduce these impacts to less than significant. Additionally,
25 construction of the EOF to LFC pipeline along the proposed corridor has the potential to
26 result in a loss of prime or organic agricultural land, similar to Line 96 EIR Impacts AG-3
27 (Loss of Prime Agricultural Land) and AG-4 (Loss of Organic Cultural Land). These
28 impacts would be less than significant, and could be further reduced with
29 implementation of MMs similar to MM AG-3 (Dust Suppression and Fungus Control)
30 and MM AF-4 (Compliance with Organic Standards) from the Line 96 EIR.

31 LFC Vicinity Impacts: Although production from PRC 421 is not defined as "new
32 production" under the County's consolidation policy (see footnote under Impact LU-1 in
33 Section 4.8.6), consolidation of oil processing at LFC would potentially be consistent, in
34 part, with the general intent of County LCP policies (e.g., Coastal Land Use Plan
35 [CLUP] Policy 6-6C) which states:

36 *New oil and gas production from offshore reservoirs or zones shall be processed*
37 *at facilities approved for consolidated processing to the maximum extent*
38 *technically and environmentally feasible. Commingled processing shall be*
39 *required to avoid or reduce project and cumulative impacts -- considering*
40 *environmental, socioeconomic, safety, and land use concerns -- that otherwise*

1 *would result from construction and/or operation of redundant processing*
2 *capacity, redundant pipelines, or redundant ancillary facilities.*

3 However, this alternative would require construction of a 10.2-mile-long pipeline that
4 predominantly parallels and replicates the recently completed Line 96 pipeline in conflict
5 with CLUP policy goals to avoid pipeline redundancy. This alternative would also entail
6 construction of a redundant oil processing facility at LFC instead of using and
7 commingling Ellwood offshore production at the existing EOF, albeit a nonconforming
8 land use, located immediately adjacent to PRC 421-2. Construction and operation of
9 these facilities would create new significant impacts to biological and water quality
10 resources greater than those associated with the Project, including impacts along the
11 EOF to LFC pipeline corridor and within LFC (e.g., Corral Canyon Creek). Therefore,
12 while consistent with the spirit of Policy 6-6C, this alternative would be inconsistent with
13 the heart of this policy due to creation of redundant facilities and new significant and
14 unavoidable land use impacts due to both policy inconsistency and adverse physical
15 impacts to biological and water quality resources (please refer to Hydrology and Water
16 Quality and Terrestrial Biological Resources above). Such impacts would also raise
17 consistency issues with a wide range of LCP policies, particularly those requiring
18 protection of ESHA and creek water quality. Application of MM WQ-2 (Wetland
19 Avoidance) and MM WQ-3b (Storm Water Pollution Prevention Plan) would reduce this
20 impact, but it would remain significant and unavoidable.

21 In addition to impacts to water quality and biological resources discussed above,
22 potential oil spills or release of other hazardous materials could be carried into Corral
23 Canyon Creek and the Pacific Ocean, and adversely affect recreational use of beaches
24 within El Capitan and Refugio State Parks (e.g., Corral Canyon Beach). While the
25 potential for such spills is very low and the chance of substantial contamination of
26 beaches remote, any such oil spill would be considered as a new significant and
27 unavoidable impact. Application of MMs MBIO-4a (Oil Spill Contingency Plan), TBIO-2a
28 (Oil Spill Contingency Plan, Biological Resource Protection), and TBIO-2b (Oil Spill
29 Contingency Plan, Habitat Restoration), as well as Line 96 EIR MM HM-3 (Automated
30 Block Valves/Additional Check Valves), would reduce but not eliminate this impact.

31 *Public Services*

32 PRC 421 Vicinity Impacts: Operational impacts associated with Impact PS-1 (Adequacy
33 of Fire Response), would be similar to, but incrementally lower than the Project. While
34 demand for fire services from Station 11 in western Goleta would increase, impacts
35 would be different from the Project as oil processing would not occur at the EOF.
36 However, an additional 9.7 miles of pipeline would be installed in the Station 11 service
37 area (see discussion below). Therefore, similar to the Project, this alternative would
38 create potentially significant impacts through incremental increases in demand for fire
39 protection services in underserved western Goleta area. Application of MM PS-1

1 (Impact Development Fee) would reduce, but not eliminate this impact which would
2 remain significant and unavoidable. In addition, similar to the Project, operation of PRC
3 421 under this alternative could create similar effects to Impact PS-2 (Operation without
4 an Approved Fire Prevention Plan) which would be reduced to less than significant with
5 application of MM PS-2 (Prepare PRC 421 Fire Prevention Plan).

6 EOF to LFC Pipeline Impacts: Construction and operation of the EOF to LFC pipeline
7 would contribute to increased demand for fire services from Station 11 as described in
8 Impact PS-1 (Adequacy of Fire Response). Similar to the Project, operation of heavy
9 construction equipment and workers engaged in facility construction could lead to injury
10 or fire, requiring emergency response from Station 11. Application of MM PS-1 (Impact
11 Development Fee) would reduce but not eliminate this impact, which would remain
12 significant and unavoidable. The PRC 421 EIR does not identify any additional impacts
13 to public services as none is anticipated for the Project. However, similar to the Line 96
14 EIR, this alternative would not increase demand for additional public services beyond
15 fire department services, and impacts would be less than significant as described under
16 Impacts PS-2 (Impacts on Water Utility Sewer), PS-3 (Impacts on Sewer), and PS-4
17 (Impacts on Solid Waste Facilities) in the Line 96 EIR. No mitigation would be required.

18 LFC Vicinity Impacts: Construction and operation of new oil processing and pipeline
19 facilities in LFC could incrementally increase demand for services from Station 11 in
20 western Goleta, which is currently operating at full capacity. Operation of heavy
21 construction equipment and workers engaged in facility construction could lead to injury
22 or fire, requiring emergency response from Station 11. Ongoing operation of these
23 facilities and increased industrial activity at LFC could incrementally increase demand
24 for emergency medical and fire services from Station 11. Impacts would be similar to
25 Impact PS-1 (Adequacy of Fire Response) and application of MM PS-1 (Impact
26 Development Fee) would reduce but not eliminate this impact, which would remain
27 significant and unavoidable.

28 Operation of this alternative would also require additional water to be stored onsite for
29 fire protection services. This would require a limited expansion of the existing
30 ExxonMobil fire protection system, which would result in a less than significant impact.
31 However, in the event that expansion of existing facilities is not possible, new water
32 wells, pumps, and tanks, and/or new water mains to connect with existing utility systems
33 would be required, resulting in greater impacts. All improvements would be confined to
34 existing developed areas, which would result in a less than significant impact

35 *Transportation and Circulation*

36 PRC 421 Vicinity Impacts: Similar to the Project, potential traffic impacts in the PRC 421
37 vicinity under this alternative would be similar to those identified in Impacts TR-1 (Route
38 Construction Traffic to Avoid Congested Intersections), TR-2 (Operation- Generated

1 Traffic), and TR-3 (Increased Potential for Traffic Accidents), with all of these impacts
2 being less than significant. Application of MMs TR-1a (Route Construction Traffic to
3 Avoid Congested Intersections) and TR-1b (Repair/ Upgrade any Damage to Access
4 Road) would further reduce Impact TR-1.

5 EOF to LFC Pipeline Impacts: Construction of the EOF to LFC pipeline would have
6 similar impacts to Impact T-1 (Increased Construction Traffic) from the Line 96 EIR.
7 Application of Line 96 EIR MM T-1a through T1-c that address routing and management
8 of construction traffic would reduce impacts, including those at congested intersections,
9 to less than significant. Operation of the new EOF to LFC pipeline would generate
10 minimal operational traffic with no measureable increases in local congestion or
11 associated long term traffic impacts.

12 LFC Vicinity Impacts: Construction and operation of new oil processing facilities and the
13 proposed 1.3 miles of pipeline in LFC would create short-term increases in construction
14 traffic and minimal long-term operational traffic. Over a 3- to 6-month construction
15 window, the additional of several dozen new trips per day to Hwy 101 would
16 incrementally increase the more than 30,000 average daily trips on this highway, but
17 would create no noticeable increase in congestion. Access to the site from Hwy 101
18 would be via the El Capitan Ranch or Refugio Road interchanges, as no direct access
19 off of Hwy 101 is available. Impacts would be less than significant with development and
20 implementation of a Traffic Management Plan to control traffic flows, especially
21 movement of larger trucks into and out of the site.

22 Operation of new facilities at LFC would result in an incremental increase in traffic, with
23 traffic increases of less than 20 to 30 trips per day; impacts would be insignificant as
24 such volumes are minor in comparison to the capacity of area roads. Additionally, the
25 existing roads within LFC currently provide adequate access for industrial trucking
26 demands (i.e., land widths, turn-around radii, etc.) and, therefore, no upgrades would be
27 required to serve the additional trips anticipated under this alternative.

28 *Noise*

29 PRC 421 Vicinity Impacts: Noise impacts in the vicinity of PRC 421 associated with
30 construction and operation of this alternative would be similar to the Project. Short-term
31 noise impacts identified by Impact NZ-1 (Construction Impacts to Recreational Beach
32 Users and Golfers) would be less than significant, with application of noise reduction
33 measures set forth in MM NZ-1a (Sound control Devices), MM NZ-1b (Additional Best
34 Management Practices), and MM NZ-1c (Buffers) further reducing this impact.
35 Operational impacts identified in Impact NZ-2 would remain less than significant as
36 ongoing noise levels would not be noticeably increased.

37 EOF to LFC Pipeline Impacts: Construction of the new EOF to LFC pipeline would
38 create short-term increases in noise due to operation of heavy equipment similar to

1 Impact N-1 (Noise from Pipeline Construction) from the Line 96 EIR. Application of MMs
2 N-1a (Noise Reduction Plan) and N-1b (Boring Noise Reduction Measures) would
3 reduce impacts to less than significant. Pipeline operation would generate limited noise
4 increases associated with periodic vehicle traffic, which would be infrequent with
5 negligible noise impacts.

6 LFC Vicinity Impacts: Construction and operation of new oil facilities in LFC would
7 incrementally increase short- and long-term noise levels in LFC and the vicinity.
8 Construction would generally be well removed from sensitive receptors, which include
9 limited rural residential uses along Calle Real west of Coral Canyon and park users/
10 beach goers at El Capitan State Beach across Hwy 101 to the south and east. Potential
11 impacts would be less than significant due to the distance from sensitive receptors and
12 application of MM NZ-1a (Sound-Control Devices), MM NZ-1b (Additional BMPs), and
13 MM N-1a (Noise Reduction Plan) from the Line 96 EIR. Since operation of the new oil
14 processing facility would produce low noise levels within an industrial area well removed
15 from sensitive receptors, impacts would be less than significant.

16 *Aesthetics/Visual Resources*

17 PRC 421 Vicinity Impacts: Construction activities and equipment, operational upgrades
18 at Pier 421-2, and the decommissioning and removal of Pier 421-1 would occur, similar
19 to the proposed Project. Visual impacts of construction and operation of this alternative
20 in the vicinity of PRC 421 would be similar to those described in Impacts VR-1 through
21 VR-4. Application of construction management MMs VR-1a through VR-1e would
22 reduce Impact VR-1 to less than significant. Impact VR-2 (Visual Effects of Accidental
23 Oil Spills) would remain significant and unavoidable due to the possibility, albeit with a
24 low probability, of a small oil spill along the shoreline; application of MMs associated
25 with reducing oil spill risk and facilitating clean up would reduce, but not eliminate this
26 impact (i.e., MMs identified in Safety; Hazardous Materials; Hydrology, Water
27 Resources, and Water Quality; Marine Biological Resources; and Terrestrial Biological
28 Resources). Removal of PRC 421-1 would remain beneficial under Impact VR-3, while
29 impacts associated with visual changes to Pier 421-2 would remain less than significant
30 under Impact VR-4.

31 EOF to LFC Pipeline Impacts: Visual impacts of construction of the EOF to LFC pipeline
32 would be similar to Line 96 EIR Impact VR-3 (Visual Effects from Pipeline Construction),
33 including those associated with equipment operation, VR-4 (Visual Effects from Pipeline
34 Installation), including loss of vegetation with construction, grading, excavation, and
35 vegetation removal occurring within the view corridor of Hwy 101, and VR-6 (Visual
36 Effects from Accidental Spills). Impact VR-3 would be short-term and less than
37 significant, Impact VR-4 would be less than significant with inclusion of MM VR-4
38 (Revegetation of Pipeline Right of Way), and Impact VR-6 would be less than
39 significant. Application of MMs associated with reducing oil spill risk and facilitating

1 clean up, such as MM MBIO-4a (Oil Spill Contingency Plan) and Line 96 EIR MM HM-3
2 (Automated Block Valves/ Additional Check Valves), would further reduce these
3 impacts.

4 LFC Vicinity Impacts: Construction and operation of new oil facilities in LFC would occur
5 within existing developed areas in Corral Canyon, which has an existing industrial
6 character, including large-scale oil processing facilities that are not highly visible from
7 public roads or view points, with exception of the Bill Wallace Trail to the east and West
8 Camino Cielo to the north. Though viewable from Bill Wallace Trail and West Camino
9 Cielo, any changes from this alternative to these areas would be consistent with the
10 existing setting and not generally noticeable from distant viewpoints. Therefore,
11 potential aesthetic/visual impacts would be less than significant.

12 *Cultural, Historical, and Paleontological Resources*

13 PRC 421 Vicinity Impacts: Ground disturbance due to pipeline construction from PRC
14 421-2 to the EOF would have the potential to adversely affect cultural resources. These
15 cultural resource impacts in the vicinity of PRC 421 under this alternative would be
16 similar to the Project. Impact CR-1 would remain less than significant with application of
17 MM CR-1 (Cultural Resources Monitor). A potential oil spill from PRC 421 facilities or
18 from the new pipeline from PRC 421-2 to the EOF could result in primary impacts to
19 undiscovered cultural resources from contamination, or secondary impacts related to
20 spill cleanup activities. An accidental oil spill from PRC 421 facilities would be similar to
21 Impact CR-2, which would remain less than significant due to small spill size and limited
22 potential for direct or indirect impacts to cultural resources.

23 EOF to LFC Pipeline Impacts: The EOF to LFC pipeline would traverse 8.4 miles along
24 the Gaviota Coast, and extent that contains an estimated 45 prehistoric and historic
25 archaeological sites within 0.25 mile of the pipeline route. At least four recorded
26 archaeological sites, CA-SBA-139, CA-SBA-83, CA-SBA-1676, and CA-SBA-1733, are
27 located within the potential pipeline corridor. Construction of this pipeline could alter or
28 destroy significant cultural resources similar to Impacts CR-2 through CR-4 from the
29 Line 96 EIR. Application of MMs similar to MM CR-2a through MM CR-2d and MM CR-4
30 from the Line 96 EIR would reduce impacts to less than significant, particularly with
31 requirements for pre-construction surveys and rerouting to avoid cultural resources.
32 Impacts to cultural resources related to an oil spill from the new pipeline and clean up
33 would be similar to Impact CR-5 from the Line 96 EIR, but would be less than significant
34 with inclusion of Line 96 EIR MM CR-1b (Pre-construction Workshop), which would train
35 crews to avoid damage to cultural resources.

36 LFC Vicinity Impacts: Construction of the new pipeline and oil processing facilities in
37 LFC may create impacts similar to Impacts CR-2 through CR-4 from the Line 96 EIR, as
38 there are multiple known archaeological sites in LFC proximate to or underlying

1 developed pads, particularly near the confluence of Las Floras and Corral Creeks and,
2 to a lesser extent, at the mouth of Corral Canyon (Science Applications, Inc. 1984).
3 Impacts to cultural resources could occur from subsurface trenching, grading, or
4 construction of concrete pads or pipeline caisson supports in areas of known
5 subsurface archaeological sensitivity, including buried archeological resources east of
6 Corral Creek and on adjacent uplands. Any ground disturbance in areas overlying
7 known archeological sites would be subject to review and approval by a qualified
8 archeologist, which may include Phase II testing and avoidance as determined
9 appropriate. Implementation of MM CR-1 (Cultural Resource Monitor) would ensure
10 construction is monitored. With this mitigation, this impact would be less than significant.

11 *Energy and Mineral Resources*

12 PRC 421 Vicinity Impacts: Similar to the Project, this alternative would increase energy
13 demand in the vicinity of PRC 421 related to construction of pipeline from PRC 421-2 to
14 the EOF and ongoing oil and gas operations, but would not substantially conflict with
15 energy conservation plans adopted by the State of California. Under this alternative,
16 electricity use at Pier 421-2 would incrementally increase due to a more powerful ESP.
17 Any decrease in energy demands resulting from not processing oil at the EOF would be
18 offset by increased energy demands for processing at LFC (see LFC Vicinity Impacts
19 below). Overall energy demand under this alternative would remain modest and Impact
20 EMR-1 would remain less than significant. Oil production under this alternative would be
21 similar to the Project and Impact EMR-2 would remain less than significant as this level
22 of oil production would not substantially affect renewable energy markets, conflict with
23 State energy conservation policies, or impede development of renewable energy.

24 EOF to LFC Pipeline Impacts: Pumping the oil/gas/water emulsion through 8.4 miles of
25 this new EOF to LFC pipeline would incrementally increase demand for electricity under
26 this alternative; however, demand for electricity would be modest and Impact EMR-1
27 would remain less than significant.

28 LFC Vicinity Impacts: Construction of new oil production facilities would entail short-term
29 increases in demand for gasoline, diesel fuel, and electricity; however, such demand
30 would be short-term and therefore less than significant. Operation of new oil processing
31 facilities, pumping of the oil/gas/water emulsion through 1.3 miles of new pipeline, and
32 increased throughput of gas at the existing POPCO facilities would increase demand for
33 electricity, similar to the Project. Energy demand is expected to be higher to operate a
34 new facility at LFC instead of increasing throughput at the EOF; however, this increase
35 is expected to be incremental and Impact EMR-1 would remain less than significant.

36 Electrical power is expected to be provided onsite by Exxon; however, if this is not
37 possible, increased demand for electric service in LFC may require obtaining power
38 from PG&E with extension of a new power line up Corral Canyon. While increased

1 power demand would not be significant, depending on design, construction of a new
2 power line may have secondary impacts (e.g., cultural resources, terrestrial biological
3 resources). Mitigation measures that require use of existing facilities, routing power
4 lines through previously disturbed areas, and performance of cultural and biological
5 resource surveys and required mitigation/avoidance would reduce secondary impacts to
6 less than significant levels.

7 *Socioeconomics and Environmental Justice*

8 PRC 421 Vicinity Impacts: Potentially impacted populations would include recreational
9 beach goers in the vicinity of PRC 421 and golfers at Sandpiper Golf Course, similar to
10 the Project. Potential users of the beach could come from any ethnicity or income level
11 while users of Sandpiper Golf Course are likely to be comprised of upper-middle class
12 and upper-class income levels. These do not represent discrete disadvantaged
13 populations and no disproportionate socioeconomic environmental justice impacts
14 would occur.

15 EOF to LFC Pipeline Impacts: The new EOF to LFC pipeline corridor is located away
16 from densely populated areas and would cross private lands and areas generally not
17 frequented by the public. Potential oil spill impacts may affect people from any ethnicity
18 or income level and are not expected to disproportionately impact disadvantaged
19 populations; therefore, no socioeconomic and environmental justice impacts would
20 occur.

21 LFC Vicinity Impacts: Up to a 1.5-acre oil processing facility and 1.3 miles of pipeline
22 would be developed within the 113-acre LFC consolidated oil and gas processing
23 facility, located approximately 15 miles west of the City of Santa Barbara, approximately
24 10 miles west of the City of Goleta, and 1 mile north of Hwy 101. This remote location is
25 not proximate to disadvantaged populations and construction and operation of this
26 alternative would not disproportionately affect a disadvantaged population; therefore, no
27 socioeconomic and environmental justice impacts would occur.