

COUNTY OF SAN LUIS OBISPO
NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT

ConocoPhillips Santa Maria Refinery Throughput Increase Project

Project Background

The ConocoPhillips Santa Maria Refinery was built on the Arroyo Grande mesa in the 1950s. The Santa Maria refinery is considered to be part of the greater San Francisco refinery that is composed of two facilities, the Santa Maria refinery and the San Francisco area Rodeo refinery, linked by a 200-mile pipeline (See Figure 1). The refineries process mainly heavy, high-sulfur crude oil. The Rodeo refinery receives crude oil from California by pipeline and tanker and foreign sources by tanker. Semi-refined liquid products from the Santa Maria refinery are sent by pipeline to the Rodeo refinery for upgrading into finished petroleum products. Products leave the Santa Maria refinery as 1) semi-refined petroleum by pipeline or tanker truck, 2) as solid petroleum coke by rail or haul truck, and 3) as recovered sulfur by haul truck. The primary processes at the Santa Maria refinery involve: raw material storage, atmospheric pressure distillation, vacuum distillation, delayed coking of residual solids, product storage and product shipping. Secondary processes include: a refinery fuel gas system, a relief flare system, steam production, sulfur recovery, and oily water treatment. The facility also has a six megawatt electrical power generation system fueled by refinery gas.

Project Location/Description

The ConocoPhillips Santa Maria refinery is located on 2555 Willow Road, Arroyo Grande, California. (See Figure 2)

ConocoPhillips proposes to increase the throughput at their Santa Maria Refinery by 12.5% and allow previously refined gas/oil petroleum liquids to be transported by truck to the facility from Bakersfield and mixed with the crude oil. Semi-refined petroleum products are then shipped by pipeline from the Santa Maria Refinery to the Rodeo Refinery in the San Francisco Bay Area.

The Santa Maria Refinery is located on the Arroyo Grande mesa and was built in 1955. It has subsequently been owned by Union Oil, Unocal, Tosco and Phillips. The refinery receives heavy, high sulfur crude oil from area resources. The refinery produces semi-refined petroleum that is transported by pipeline or truck to the Rodeo refinery, green petroleum coke that is transported by rail or truck and recovered sulfur that is transported by truck. It also produces electric power from a 6 MW steam generator located onsite.

Current APCD permit limits on crude oil throughput are 48,000 bbls/day and 16,220,600 bbls/year, which would increase under the proposed project to 50,000 bbls/day and 18,250,000

bbls/year (12.5%). The APCD permit also limits gas/oil deliveries at the refinery loading rack to 2,000 bbls/day, which may increase under the proposed project.

Table 1 summarizes the project site characteristics.

Table 1 General Project Site Information

Item	Result
Assessor parcel number:	092-401-011
Supervisory District No:	4
Planning area:	South County Coastal
Land use category:	IND - Industrial
Combining designation(s):	Flood Hazard Area Coastal Zone Boundary
Existing uses:	ConocoPhillips Santa Maria Refinery
Topography:	Coastal, dunes
Vegetation:	Coastal, dune vegetation
Parcel size:	0.84 miles ²
Surrounding land use categories and uses:	
North:	IND and RS (Industrial and Residential). Mobile home storage, residential homes
East:	AG and REC (Agricultural and Recreation). Farming and golf course.
South:	AG (Agricultural). Farming
West:	OS and REC (Open Space and Recreational). Sensitive resource area and dune recreation.

Probable Environmental Effects

1) Air Quality and Climate Change

The project region in San Luis Obispo County is currently in violation of the state standards for ozone (O₃) and respirable particulate matter (PM₁₀). The evaluation of project air quality impacts will focus on potential O₃ precursor (reactive organic compounds [ROC] and nitrogen oxides [NO_x]) and PM₁₀ emissions. The air quality analysis also will evaluate potential impacts from proposed sources of odors and toxic air contaminants (TACs). The San Luis Obispo Air Pollution Control District (SLOAPCD) presents methods to assess the air quality impacts for projects subject to CEQA .

The project could generate additional air emissions from increased crude oil handling and processing. In addition, potential increases in truck trips associated with partially-refined product transportation from the Bakersfield area would generate additional offsite, mobile source emissions. There would be increases in air contaminant emissions from at least 26 different devices or processes at the facility. These increases would trigger APCD rule requirements for additional control technology and emission offsets.

Criteria emissions from mobile sources will be estimated utilizing the URBEMIS software, which includes fleet-based emission factors (EMFAC) appropriate to the study area. Toxic emissions associated with diesel powered mobile sources will be analyzed for diesel equipment on-site as well as diesel trucks that travel through residential areas to assess the potential impacts on residences. The approach would follow that prescribed by the Federal EPA utilizing the ISC dispersion model.

Emissions of greenhouse gasses will also be assessed for all construction activities and operations, both baseline and proposed operations. GHG emissions will be quantified in the same manner as criteria pollutants. Regulatory requirements will address recent GHG emission regulation, such as AB 32. GHGs, including carbon dioxide (from combustion), methane (from combustion and fugitive emissions), nitrous oxide and hydrofluorocarbons will be addressed. GHG emissions will be assessed for both direct (located on-site) and indirect (from mobile sources and electricity generation) and will address life-cycle issues such as transportation and end-use. Electrical generation GHG emissions will utilize an analysis on power plant emissions conducted by the EPA in the eGRID program, updated to address the most recent status of power plants that feed electricity to Central California.

Information will be obtained from consultation with the SLOAPCD.

This section of the EIR should include, but not be limited to, the following.

- a. Review, update and incorporation of climatological data, and existing conditions;
- b. Summarize the regulatory setting;
- c. Discussion of attainment status of the District relative to state and federal air quality standards and other existing regulatory restrictions;
- d. Calculation of potential pollutant emissions from all components and phases of the project, including operations at the Santa Maria refinery and changes to the Rodeo refinery activities;
- e. Evaluation of the proposed project emissions, including GHG emissions increases, and comparison to the APCD thresholds and consistency with the County Clean Air Plan;
- f. Evaluation of potential short-term, long-term, and cumulative impacts; and
- g. Identification and discussion of feasible mitigation measures to minimize potentially adverse air quality impact to a level of insignificance.

As per the County of San Luis Obispo Initial Study Environmental Checklist air quality section, the project could have the potential to exceed existing APCD thresholds of significance. Substantial air pollutant concentrations could occur in close proximity to sensitive receptors, but would not be expected to create additional objectionable odors or be inconsistent with the County's Clean Air Plan.

2) Hazardous Wastes

The proposed project does not propose extensive equipment installation, grading or other activities that could generate hazardous waste. However, increased product throughput would increase the generation of wastes from the refinery, including tank bottoms, oily wastes or other wastes generated as part of the refinery operations. The levels of waste currently generated along with an estimate of the amount of waste expected from the increased operations will be quantified. Destinations and disposal of the wastes will be examined to ensure that there is sufficient capacity to handle the waste and that additional waste do not generate offsite impacts. Mitigation measures to reduce waste levels or to ensure reuse or recycling of materials will be examined.

This section of the EIR should include, but not be limited to, the following.

- a. Identify potentially contaminated areas at the refinery;
- b. Identify the types of chemicals currently generated and disposed of by the refinery;
- c. Identify any additional wastes generated by the proposed project; and
- d. Evaluate potential impacts from hazardous materials and identify mitigation measures.

As per the County of San Luis Obispo Initial Study Environmental Checklist hazards and hazardous materials section, the project would not be expected to create additional public health hazards related to hazardous waste.

3) Noise

Transportation and operation activities for the proposed project and alternatives could increase noise levels in the vicinity of the refinery site and along transportation corridors. The noise impact analysis will focus on refinery operations and transportation related noise impacts to communities located near the refinery site and along transportation routes between the refinery site and the truck destinations.

Proposed additional operational activity noise levels will be calculated based on the equipment lists developed in the project description. Baseline noise levels will rely on the community noise levels developed as part of the San Luis Obispo County Noise Element Technical Reference Document, which defines noise levels at 41 different sites in the County. Some additional community noise monitoring will be conducted to supplement this data.

The impact analysis will be based on the relationship between projected noise levels (and the duration of these levels), the baseline noise levels and applicable policies of the San Luis Obispo County Noise Elements. Impact criteria will include the noise/land use compatibility guidelines supplemented by annoyance and sleep disturbance criteria as appropriate.

In addition, as truck and vehicle traffic levels may be increased along the transportation routes, the increases in noise as a result of increased truck and vehicle traffic will be assessed. The Federal Highway Administration's "Traffic Noise Prediction Model" for estimating traffic noise will be utilized to assess increased traffic noise impacts. Community populations with potential

exposure to traffic noise will be identified and mapped, including residences and businesses along the transportation routes, and residential and recreational areas.

Calculations will be made to estimate peak and average noise exposure levels (Leq and CNEL) at residences and sensitive receptors. Noise contours will be mapped for the refinery and for transportation corridors. Potential development and the noise impacts from the facilities would be discussed in the cumulative impact section. Mitigation measures to reduce noise impacts, such as transportation corridor modifications or equipment barriers and noise blankets, will be included as needed, to reduce noise levels.

This section of the EIR should include, but not be limited to, the following.

- a. Identification of existing noise conditions relating to refinery operations and traffic on the major road routes to Highway 101. The County's Noise Element contains useful noise contour information around some of these roads;
- b. Identification and mapping of potential or existing sensitive stationary noise receptors (e.g., residences, schools, etc.) near the refinery and along the potential traffic routes;
- c. Quantification of proposed project changes to existing baseline noise conditions;
- d. Evaluation of project consistency with the County Noise Element;
- e. Identify all feasible mitigation measures where acceptable thresholds are exceeded.

As per the County of San Luis Obispo Initial Study Environmental Checklist noise section, the project could have the potential to exceed existing County Noise thresholds of significance along transportation routes, but would not be expected to generate severe noise or vibrations or increase the noise levels in the vicinity of the existing refinery.

4) Public Safety

Public safety relates to releases of toxic or flammable materials that could have an immediate impact on public safety and releases of liquids that could generate environmental impacts. Public safety analysis would form the basis for other issue areas that evaluate potential environmental consequences associated with an accidental spills, as well as demand for fire protection services.

Public safety and risk is generally expressed in terms of occurrences of an event (i.e., fatality, injury, oil spill, etc.) per year. Risk guidelines also apply risk quantification on an annual basis. The proposed project could exacerbate currently potentially hazardous activities, through the increased use of equipment at the refinery, the increased throughput of the pipeline from the Santa Maria refinery to the Rodeo Refinery, and the increased use of hazardous material associated with the refinery process (e.g., chlorine, etc).

The hazardous materials/risk of upset analysis will quantify the current risk baseline and evaluate potential changes in risk associated with the proposed activities and alternatives. The analysis will utilize established risk guidelines to evaluate the significance of potential incremental risk increases/decreases associated with the proposed project and alternatives.

The significance of potential impacts will be quantified using widely accepted significance criteria for public safety. These criteria would only be used for potential toxic exposure, fires and explosions. If potentially significant impacts are identified, mitigation measures will be proposed, where possible, to reduce the impacts to a level of insignificance.

A Fault Tree Analysis (FTA) will be used to evaluate potential increases in system safety posed by the proposed project and alternatives that could produce offsite impacts. The results of the FTA will be used with a consequence analysis to evaluate the incremental changes in risk over the baseline. Should significant changes to system reliability or consequences be identified, mitigation measures will be proposed to reduce potential hazards.

The potential for pipeline spills will also be evaluated and practices related to pipeline maintenance, smart-pigging, recent smart-pig results and oversight will be examined in coordination with appropriate State Agencies.

A wide variety of sources are available to estimate spill probabilities and environmental impacts. Equipment failure rates from the American Institute of Chemical Engineers (AIChE) Center for Chemical Process Safety (CCPS) will be utilized along with published oil spill data from the Department of Transportation (DOT), California State Fire Marshal (CSFM) and others.

This section of the EIR should include, but not be limited to, the following.

- a. Identification of existing risk at the Santa Maria refinery, along the pipeline route and along the trucking routes;
- b. Identification of additional risks introduced by the proposed project;
- c. Comparison of risks to thresholds; and
- d. Introduction of mitigation measures to reduce significant risks.

As per the County of San Luis Obispo Initial Study Environmental Checklist hazards and hazardous materials section, the project could have the potential to increase the risk of releases of hazardous materials from the refinery or along the pipeline route, but would not be expected to interfere with emergency response or evacuation routes, to expose persons to increased risks due to airport flight patterns or increases in fire risks.

5) Public Services

Public services will address issues related to fire protection, police resources, utilities and energy use. The public services sections of the EIR will address a suite of local government- and district-provided services, including: water supply, wastewater treatment, solid waste disposal, schools, libraries, police and fire protection, and emergency response.

The proposed project is not expected to result in a significant increase in the population of the area; therefore, the population-driven public services (i.e., schools, libraries, police protection) would not be expected to experience impacts.

The EIR will assess the potential potable water supply, sanitary wastewater treatment, and non-hazardous solid waste disposal impacts associated with the proposed project. The EIR will

establish the baseline setting and existing capacity in the systems. The EIR will then assess the proposed project's potential impacts against available capacity.

The EIR will assess the potential cumulative public services and utilities impacts associated with the proposed project and other identified development projects recently completed, planned, or reasonably foreseeable in the area. For example, a proposed residential development in the area could cumulatively affect the availability of potable water.

Information will be obtained from consultation with the local fire department, CALFIRE, the local sheriff's department, California Highway Patrol and the local school districts, as applicable.

This section of the EIR should include, but not be limited to, the following.

- a. Identification of service providers such as gas, electric, water, fire, police, and schools;
- b. Discussion of services required by the refinery; and
- c. Identification of impacts and mitigation measures.

As per the County of San Luis Obispo Initial Study Environmental Checklist public services/utilities section, the project would not be expected to have an effect upon, or result in the need for new or altered public services.

6) Traffic

Transportation impacts will be assessed by examining the worker-related commuter traffic, truck transportation and rail traffic. Truck transportation would be associated with delivering equipment, hauling materials and wastes, trucks used to deliver the gas/oil and to haul sulfur. Train traffic would be associated with coke hauling and possibly semi-refined product hauling.

Transportation impacts and trucks hauling equipment and/or material traveling to and from the site could have an adverse effect on traffic flow and safety. The study area will include the San Luis Obispo County roadway networks that could be affected by the project and alternatives as they pertain to operations-related traffic.

Information and data used in the EIR assessment will be obtained through review of project description material; County files and recent transportation analysis reports available from the County and other sources (e.g., Caltrans, etc.); consultation with County and Caltrans staff; and, as needed, field reconnaissance efforts by the project technical staff. No traffic data collection is proposed. Data that will be used include:

- Traffic characteristics include daily and peak-hour volumes, and level of service on regional and local study area roadways.
- Physical characteristics (number of lanes, width, etc.) of study area roadways and intersections.
- Planned roadway improvement projects, if any, in the study area.

Transportation impact analysis for the project and alternatives will consist of the following tasks:

- Roadway circulation analysis in and around affected project areas as it pertains to activities associated with current and proposed operations. This will include determining changes in volume to capacity ratios, levels of service, particularly along Highway 1, Willow Road, Pomeroy Road, Los Berros Road, and Division Street.
- Determination of peak hours of usage and LOS during these peak hours on affected roadways based on information from the County, Caltrans, or recent EIRs.
- Intersection analysis at potentially impacted intersections including delay and LOS utilizing the Highway Capacity Software.
- Determination of the number and size of vehicles that would be used during project operations, the expected hours of operation of the vehicles, and the ability of the study area roads to accommodate these vehicles.

Impacts will be determined by comparing to current County CEQA traffic thresholds.

This section of the EIR should include, but not be limited to, the following:

- a. Determination of existing roadway and intersection utilization;
- b. Quantification of proposed project impacts on area roadways and intersections;
- c. Development of mitigation measures to reduce significant impacts.

As per the County of San Luis Obispo Initial Study Environmental Checklist traffic section, the project could have the potential to create unsafe conditions on public roadways due to possible increased truck traffic, but would not be expected to affect emergency access, parking capacity, result in inadequate internal traffic circulation, conflict with alternative transportation or result in a change in air traffic patterns.

7) Water Quality

The refinery treats wastewater and discharges it through an outfall pipeline into the marine environment. Changes in quality of the wastewater would be minimal with the proposed project. The project could generate additional wastewater from the refinery, due to increased crude oil throughput, and could therefore violate waste discharge requirements or Central Coast Basin Plan criteria for wastewater systems.

Very little activity is proposed as part of proposed project that would change the existing water quality issues. Water quality issues not related to increased water use would be mostly limited to establishing a baseline composed of surface water runoff issues and leakage of onsite materials and construction related impacts.

Increased extraction and use of water from onsite wells could lead to sea water intrusion and subsidence. These issues will be examined in the EIR.

An additional area that could cause water quality impacts would be spills along the existing pipeline route to the Rodeo Refinery. As throughput in the pipeline would increase with the project, a spill from the pipeline could be larger in size than current operations. This impact has

been identified in a number of different EIRs for similar pipeline throughput increase type projects. Impacts to water quality would be significant if the spill sizes were to increase due to the proposed project along the pipeline route. Mitigation measures to address these potential significant impacts would be developed.

The baseline environmental setting will describe the following:

- Regional and local hydrologic setting, including the encompassing watersheds, groundwater, surface water runoff, and general water quality;
- Review of published hydrologic maps, published geologic/hydrologic reports, as well as resources available at the County of San Luis Obispo Project Clean Water; and
- Field reconnaissance to supplement the results of the background research that will characterize surficial variables such as topography, areas of previous grading and spoils, and location and surface condition of drainages and creeks.
- Current wastewater quality and quantity generated by the refinery.

The Water Quality section will be prepared based on a review of published hydrologic maps, published geologic/hydrologic reports, and other EIRs completed for projects in the vicinity of the site.

This section of the EIR should include, but not be limited to, the following:

- a. Determination of existing water quality issues;
- b. Review, evaluation, and discussion of appropriate regulations (i.e., various sections of the Clean Water Act) and reports of recently completed groundwater studies;
- b. Quantification of proposed project impacts on water quality and wastewater quantity generated;
- c. Development of mitigation measures to reduce significant impacts.

As per the County of San Luis Obispo Initial Study Environmental Checklist water section, the project could have the potential to change the quality of surface waters along the pipeline route given a spill.

8) Water Quantity

Water quantity will address the issues related to the proposed increases in water use of the refinery with the proposed project and the impact on the availability of groundwater for other groundwater users. Extensive analysis has been conducted on these issues in other studies, such as the SAIC study for the Nipomo Community Services District Urban Water Management Plan. The EIR will review and compile available information conducted through consultation with the County Public Works Department, County Waterworks, the Regional Water Quality Control Board, Nipomo Community Services District and other entities in the area. The compilation will address the following issues:

- Current and future water demand projects for the refinery including the project;
- Current and future water demand of the uses in the area, including agricultural and residential;
- An evaluation of the capability of the ground water basins to supply this demand;
- Assessment of the potential impacts on water quality as a result of increased pumping;
- Assessment of impacts on neighboring wells of increased pumping;

Mitigation measures to address these potential impacts will be developed and will include measures to reduce water usage to below current levels or other methods to mitigate the impacts.

In addition, work conducted by ConocoPhillips and Steve Bachman would be utilized to evaluate the on-site water availability, including the ability of on-site wells to supply the proposed increase in water demand, sustained pumping capacities of existing wells and draw-down of other wells on-site and wells on neighboring properties.

This section of the EIR should include, but not be limited to, the following:

- a. Determination of existing water quantity issues, including a review and compilation of existing area studies and ConocoPhillips analysis;
- b. Discussion of proposed project impacts on water quantity;
- c. Development of mitigation measures to reduce significant impacts.

As per the County of San Luis Obispo Initial Study Environmental Checklist water section, the project could have the potential to change the quantity or movement of available surface or groundwater.

9) Biological Resources

The project would result in potential increases in the quantity of material being transported through the pipeline between the Santa Maria refinery and the Rodeo refinery. A spill along the pipeline route could be larger due to the increased throughput. This might result in a loss of unique or special status species or their habitats, or reduce the extent, diversity or quality of native or other important vegetation. Depending on the exact pipeline route, it could impact wetland or riparian habitat. Impacts would therefore be considered potentially significant.

This section of the EIR should include, but not be limited to, the following:

- a. Determination of existing biological environment, including the marine environment and the environment through which the pipeline travels;
- b. Discussion of proposed project impacts on these biological resources;
- c. Development of mitigation measures to reduce significant impacts.

As per the County of San Luis Obispo Initial Study Environmental Checklist biological resources section, the project could have the potential to affect unique or special status species or their habitats, impact native or important vegetation, or impact wetland or riparian habitat. The

project would not be expected to introduce barriers to the movement of resident or migratory fish or wildlife species, or hinder the normal activities of wildlife.

10) Other Issue Areas

In an EIR, some issue areas would have no impact or less than significant impacts. These issue areas would include aesthetics, agricultural resources, cultural resources, geology and soils, population and housing, recreation, wastewater or land use. As part of the EIR, a section would be included that would discuss each of these issue areas and the basis for the findings of *no impact* or *less than significant impact*. The analysis presented in the EIR would be based upon the information contained in the application and other documents along with additional supporting information as needed to support the finding of on impact or less than significant impacts.

Each of the issues areas are discussed briefly below.

Aesthetics

No changes would be made to the Santa Maria refinery that would change its appearance from public areas or would introduce additional use, glare or night lighting or impact geological features of the area. Therefore, impacts would be less than significant.

Agricultural resources

The project would not convert existing agricultural land to other uses, or impair agricultural use of nearby lands, or conflict with existing zoning. Impacts would therefore be considered less than significant.

Cultural resources

The project would not disturb pre-historic, historic, or paleontological resources as no excavation or grading would be expected. Impacts are therefore considered to be less than significant.

Geology and soils

The project would not involve soil movement or grading, and therefore would not result in exposure to or production of unstable earth conditions, result in soil erosion, topographic changes, loss of topsoil or unstable soil conditions. The project would also not change rates of soil absorption, or the amount or direction of surface runoff or change the drainage patterns. The Santa Maria refinery is not located in a flood hazard zone, as per County maps, and is not located in a Calif. Dept. of Mines and Geology Earthquake Fault Zone. Impacts to geology would therefore be less than significant.

Population and housing

The project would not introduce any additional employees or substantial construction to the area and would therefore not induce substantial growth in an area either directly or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure), would not displace existing housing or people, requiring construction of replacement housing elsewhere or create the need for substantial new housing in the area. The project would also not use substantial

amount of fuel or energy as modifications to the refinery would not be substantial. Impacts would therefore be considered less than significant.

Recreation

The project would not increase the demand for parks or trails or affect the access to recreational areas. Impacts would be considered less than significant.

Land use

The project would not modify existing land uses nor substantially change the current operations at the refinery. Therefore, the project would be consistent with land use policy/regulations (e.g., general plan [county land use element and ordinance], local coastal plan, specific plan, Clean Air Plan, etc.). The project would be consistent with adopted agency environmental plans or policies with jurisdiction over the project, except for the possible exception of Air Quality issues, which are addressed in the Air Quality issue area above. Therefore, land use issues would be less than significant.

11) Alternatives

Discussion and evaluation of project alternatives shall include, but not be limited to, the following

- a. No project.
- b. Reduced refinery throughput increase.
- c. Alternate transportation methods for feedstock and/or waste.

As required by CEQA, a determination will be made as to the environmentally superior alternative. The determination of the environmentally superior alternative will be performed by conducting a comparative analysis for all issue areas of the mitigated impacts for each alternative evaluated throughout the document.

12) Cumulative Effects

The cumulative impact portion of the assessment is designed to address the cumulative impacts associated with related past, present and reasonably foreseeable projects within the study area. One of the first steps in the cumulative analysis will be to work with SLOAPCD and San Luis Obispo County in developing a cumulative projects list.

The project's growth inducing impacts will also be addressed.

The EIR will address all cumulative effects within each area of analysis. Cumulative analysis will include identification and discussion of all cumulative impacts of the project in relation to other existing and known projects and affected roadways.

In addition, in air quality, cumulative impacts associated with GHG emissions will be addressed.

Figure 1 Santa Maria and Rodeo Refinery Locations

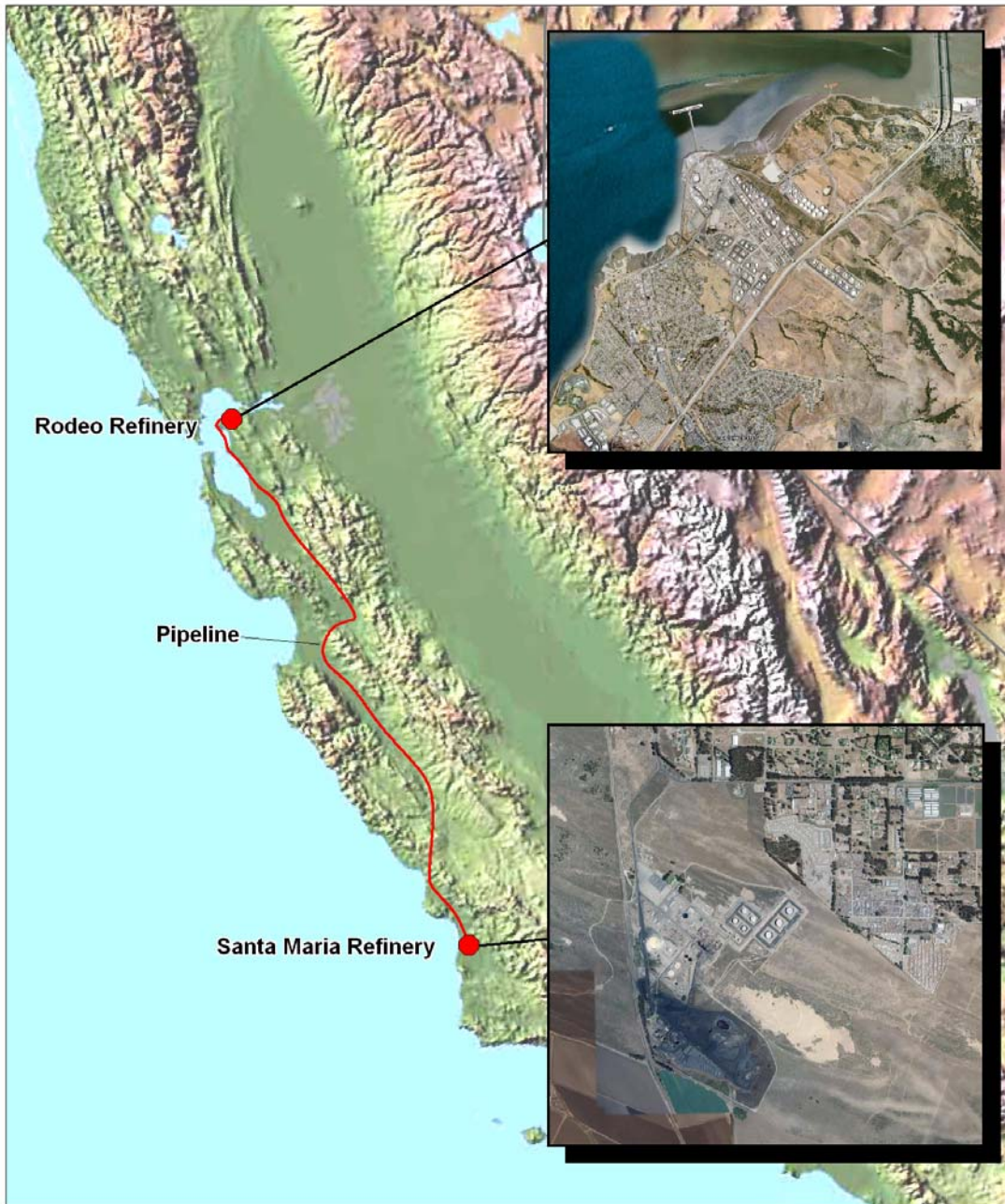


Figure 2 Santa Maria Refinery Vicinity Map



Attachment

Appendix C: Notice of Completion and Environmental Document Transmittal to State
Clearinghouse/Reviewing Agencies Checklist