

Table of Contents

Executive Summary	ES-1
Project Objectives, Purpose, and Need	ES-2
Background and Description of Proposed Project	ES-2
Proposed Project Environmental Impacts and Mitigation	ES-4
Air Quality	ES-4
Public Safety and Hazardous Materials	ES-4
Noise and Vibration	ES-5
Public Services	ES-5
Land Use and Policy Consistency Analysis	ES-5
Transportation and Circulation	ES-5
Water Resources	ES-5
Alternatives to the Proposed Project	ES-5
No Project Alternative	ES-6
Summit Pump Station Truck Unloading	ES-6
Southbound Route Alternative	ES-6
Comparison of Proposed Project and Alternatives	ES-6
No Project Alternative	ES-7
Summit Pump Station Truck Unloading	ES-7
Southbound Route Alternative	ES-7
Environmentally Superior Alternative	ES-7
Known Areas of Controversy or Unresolved Issues	ES-8
1.0 Introduction.....	1-1
1.1 Proposed Project Objectives	1-3
1.2 Agency Use of the Document	1-3
1.3 EIR Process and Scope	1-4
1.4 Previous CEQA Documents	1-6
1.5 EIR Contents	1-6
2.0 Project Description.....	2-1
2.1 Project Background	2-1
2.1.1 Current Operations	2-5
2.1.2 Crude Oil Classifications and Delivery to the Refinery	2-5
2.1.2.1 Santa Maria Pump Station	2-7
2.1.2.2 Orcutt Pump Station	2-9
2.1.2.3 Summit Pump Station	2-9
2.1.3 Current SMF Operations	2-11
2.1.4 Fuel Gas Processing and Handling	2-11
2.1.5 Coking Units and Coke Handling	2-13
2.1.6 Water Processing	2-14
2.1.7 Transportation of Products	2-17
2.1.7.1 Pump Stations	2-19
2.1.8 Utilities and Ancillary Systems	2-21

2.1.9 Utility and Water Usage.....	2-22
2.1.10 Employees and Scheduling	2-23
2.1.11 Chemical Usage and Waste	2-23
2.2 Proposed Project Description.....	2-24
3.0 Cumulative Projects Description	3-1
3.1 Boundary of Cumulative Projects Study Area.....	3-2
3.2 Description of Cumulative Projects	3-2
3.2.1 Caltrans	3-14
4.0 Environmental Analysis.....	4-1
Introduction to Environmental Analysis.....	4-1
Effects Not Found to be Significant.....	4-1
Assessment Methodology	4-2
Significance Criteria	4-2
Impact Analysis	4-3
Formulation of Mitigation Measures and Mitigation Monitoring Program.....	4-3
Impacts of Alternatives	4-4
Cumulative Projects Impact Analysis	4-4
4.1 Air Quality	4.1-1
4.1.1 Environmental Setting	4.1-1
4.1.1.1 Air Quality Monitoring	4.1-1
4.1.1.2 Countywide Emissions Inventory	4.1-7
4.1.1.3 Greenhouse Gases	4.1-11
4.1.1.4 Current Emissions from Refinery Operations.....	4.1-19
4.1.2 Regulatory Setting	4.1-27
4.1.2.1 Air Quality	4.1-27
4.1.2.2 Local	4.1-29
4.1.2.3 Greenhouse Gas Emissions Regulations.....	4.1-30
4.1.3 Significance Criteria	4.1-35
4.1.3.1 Operational Thresholds	4.1-36
4.1.4 Project Impacts.....	4.1-38
4.1.5 Other Issue Area Mitigation Measure Impacts	4.1-48
4.1.6 Cumulative Impacts	4.1-48
4.1.7 Mitigation Monitoring Plan	4.1-50
4.2 Public Safety and Hazardous Materials	4.2-1
4.2.1 Environmental Setting	4.2-1
4.2.1.1 Study Area and Scope	4.2-1
4.2.1.2 Characteristics of Crude Oil and Natural Gas.....	4.2-2
4.2.1.3 Risk Assessment Methodology.....	4.2-3
4.2.1.4 Existing Operations.....	4.2-29
4.2.2 Regulatory Setting	4.2-34
4.2.2.1 Federal Laws and Regulations.....	4.2-34
4.2.2.2 California Laws and Regulations.....	4.2-38

4.2.2.3 Other Applicable Guidelines, National Codes, and Standards	4.2-43
4.2.3 Significance Criteria	4.2-45
4.2.4 Project Impacts and Mitigation Measures.....	4.2-46
4.2.4.1 Other Issue Area Mitigation Measure Impacts	4.2-48
4.2.5 Cumulative Impacts and Mitigation Measures	4.2-48
4.2.6 Mitigation Monitoring Plan	4.2-49
4.3 Noise and Vibration	4.3-1
4.3.1 Environmental Setting	4.3-1
4.3.1.1 Noise Effects.....	4.3-1
4.3.1.2 Noise Terminology	4.3-3
4.3.1.3 Vibration	4.3-6
4.3.1.4 Sensitive Receptors.....	4.3-8
4.3.1.5 Existing Noise Sources	4.3-9
4.3.1.6 Noise Measurements.....	4.3-11
4.3.2 Regulatory Setting	4.3-13
4.3.2.1 State Regulations	4.3-13
4.3.2.2 County Local Ordinances and Policies	4.3-13
4.3.3 Significance Criteria	4.3-17
4.3.3.1 Operations Traffic	4.3-17
4.3.3.2 Operations Stationary Sources.....	4.3-17
4.3.4 Project Impacts and Mitigation Measures.....	4.3-18
4.3.5 Other Issue Area Mitigation Measure Impacts	4.3-19
4.3.6 Cumulative Impacts	4.3-19
4.3.7 Mitigation Summary/Monitoring Plan.....	4.3-20
4.4 Public Services.....	4.4-1
4.4.1 Environmental Setting	4.4-1
4.4.1.1 Water Supply Utility	4.4-1
4.4.1.2 Sanitary Wastewater	4.4-2
4.4.1.3 Solid Waste Disposal	4.4-3
4.4.1.4 Energy	4.4-6
4.4.1.5 Fire Protection Services	4.4-9
4.4.2 Regulatory Setting	4.4-12
4.4.2.1 Federal.....	4.4-12
4.4.2.2 State.....	4.4-12
4.4.2.3 County.....	4.4-14
4.4.2.4 Other Codes and Standards	4.4-17
4.4.3 Significance Criteria	4.4-18
4.4.4 Project Impacts and Mitigation Measures.....	4.4-19
4.4.4.1 Water Supply	4.4-19
4.4.4.2 Sanitary Wastewater	4.4-19
4.4.4.3 Solid Waste (non-hazardous).....	4.4-20
4.4.4.4 Energy	4.4-23
4.4.4.5 Fire Protection.....	4.4-23
4.4.5 Other Issue Area Mitigation Measure Impacts	4.4-23

4.4.6 Cumulative Impacts and Mitigation Measures	4.4-23
4.5 Land Use and Policy Consistency Analysis.....	4.5-1
4.5.1 Environmental Setting	4.5-1
4.5.1.1 Background.....	4.5-1
4.5.1.2 Existing Land Use.....	4.5-1
4.5.1.3 Land Use Plans, Policies, Sections & Standards	4.5-2
4.5.1.4 San Luis Obispo County General Plan	4.5-2
4.5.1.5 San Luis Obispo County Local Coastal Program	4.5-12
4.5.1.6 South County Coastal Area Plan.....	4.5-15
4.5.1.7 Zoning	4.5-16
4.5.1.8 Santa Barbara County Comprehensive Plan	4.5-16
4.5.2 Regulatory Setting	4.5-20
4.5.2.1 Federal.....	4.5-20
4.5.2.2 State.....	4.5-20
4.5.2.3 Local	4.5-22
4.5.3 Significance Criteria	4.5-24
4.5.4 Proposed Project Impacts and Mitigation Measures.....	4.5-24
4.5.5 Policy Consistency Analysis.....	4.5-25
4.5.5.1 San Luis Obispo County General Plan	4.5-26
4.5.5.2 San Luis Obispo County Local Coastal Program	4.5-43
4.5.5.3 South County Coastal Area Plan.....	4.5-50
4.5.5.4 Santa Barbara County Comprehensive Plan	4.5-51
4.5.6 Cumulative Impacts and Mitigation Measures	4.5-55
4.6 Transportation and Circulation	4.6-1
4.6.1 Environmental Setting	4.6-1
4.6.1.1 Background.....	4.6-1
4.6.1.2 Methods of Describing Traffic.....	4.6-1
4.6.1.3 Existing Conditions.....	4.6-4
4.6.1.4 Project Area Overview.....	4.6-6
4.6.2 Regulatory Setting	4.6-10
4.6.2.1 Federal.....	4.6-10
4.6.2.2 State.....	4.6-10
4.6.2.3 Local	4.6-10
4.6.3 Significance Criteria	4.6-11
4.6.4 Project Impacts and Mitigation Measures.....	4.6-12
4.6.5 Cumulative Impacts	4.6-14
4.6.6 Mitigation Monitoring Plan	4.6-14
4.7 Water Resources.....	4.7-1
4.7.1 Environmental Setting.....	4.7-1
4.7.1.1 Water Quantity.....	4.7-1
4.7.1.2 Water Quality.....	4.7-12
4.7.2 Regulatory Setting.....	4.7-13
4.7.2.1 Federal Policies and Regulations.....	4.7-13

4.7.2.2 State Policies and Regulations.....	4.7-14
4.7.2.3 Local Policies and Regulations.....	4.7-16
4.7.3 Significance Criteria.....	4.7-16
4.7.4 Project Impacts and Mitigation Measures.....	4.7-16
4.7.5 Cumulative Impacts and Mitigation Measures.....	4.7-20
4.7.6 Mitigation Monitoring Plan.....	4.7-20
 4.8 Other Issue Areas.....	4.8-1
4.8.1 Aesthetics.....	4.8-1
4.8.2 Agricultural Resources.....	4.8-1
4.8.3 Cultural Resources	4.8-1
4.8.4 Geology and Soils	4.8-1
4.8.5 Population and Housing.....	4.8-1
4.8.6 Recreation	4.8-2
4.8.7 Biological Resources	4.8-2

5.0 Phillips Project Alternatives Analysis..... 5-1

5.1 Description of Alternatives and Screening Analysis	5-2
5.2 No Project Alternative	5-3
5.3 Reduced Refinery Throughput Increase	5-5
5.4 Increased Rail Transport.....	5-5
5.5 Santa Maria Refinery Truck Unloading.....	5-6
5.6 Summit Pump Station Truck Unloading.....	5-6
5.7 Orcutt Pump Station Truck Unloading	5-7
5.8 Alternative Transportation Routes.....	5-8
5.8.1 Northbound Route Alternative.....	5-8
5.8.2 Eastbound Route Alternative	5-9
5.8.3 Southbound Route Alternative.....	5-10
5.9 Impacts of Alternatives	5-11

6.0 Comparison of Proposed Project and Alternatives 6-1

6.1 Environmental Analysis of Selected Alternatives	6-2
6.1.1 No Project Alternative	6-2
6.1.2 Summit Pump Station Truck Unloading Alternative.....	6-3
6.1.2.1 Air Quality	6-3
6.1.2.2 Public Safety and Hazardous Materials	6-4
6.1.2.3 Noise and Vibration	6-5
6.1.2.4 Public Services and Utilities	6-5
6.1.2.5 Land Use and Policy Consistency Analysis.....	6-6
6.1.2.6 Water Resources	6-6
6.1.2.7 Transportation	6-7
6.1.2.8 Other Issue Areas	6-7
6.1.3 Southbound Route Alternative.....	6-8
6.1.3.1 Air Quality	6-8
6.1.3.2 Public Safety and Hazardous Materials	6-8
6.1.3.3 Noise and Vibration	6-8

6.1.3.4 Public Services and Utilities	6-8
6.1.3.5 Land Use and Policy Consistency Analysis.....	6-8
6.1.3.6 Transportation	6-9
6.1.3.7 Water Resources	6-9
6.1.3.8 Other Issue Areas	6-9
6.2 Comparison of Proposed Project and Alternatives	6-9
6.3 Environmentally Superior Alternative Analysis	6-13
6.3.1 Proposed Project Versus Alternatives.....	6-13
6.3.1.1 Proposed Project Versus the No Project Alternative	6-14
6.3.1.2 Proposed Project Versus the Summit Pump Station Truck Unloading Alternative.....	6-14
6.3.1.3 Proposed Project Versus the Southbound Route Alternative	6-15
6.3.2 Environmentally Superior Alternative	6-15
7.0 Other CEQA-Mandated Sections	7-1
7.1 Significant Irreversible Environmental Changes That Would be Caused by the Proposed Project Should It be Implemented.....	7-1
7.2 Growth-Inducing Impacts	7-2
7.2.1 Removal of an Impediment to Growth	7-2
7.2.2 Economic Growth	7-2
7.2.3 Precedent-Setting Action	7-2
7.2.4 Development of Open Space	7-3
7.3 Energy Conservation.....	7-3
8.0 Summary of Mitigation Measures and Mitigation Monitoring Plan	8-1
8.1 Mitigation Monitoring Program.....	8-1
8.2 Monitoring Authority and Enforcement Responsibility	8-1
8.3 Mitigation Compliance Responsibility	8-2
8.4 General Monitoring Procedures	8-2
8.5 Mitigation Monitoring Table	8-3
9.0 List of EIR Preparers	9-1
10.0 Agencies and Individuals Consulted During EIR Preparation	10-1

List of Figures

Figure ES-1	Proposed Project Location.....	ES-3
Figure 1-1	Location of the Santa Maria Refinery	1-2
Figure 2-1	Facility Location	2-2
Figure 2-2	Facility Location and Pipeline Route to Rodeo Refinery	2-4
Figure 2-3	Santa Maria Facility Plot Plan	2-6
Figure 2-4	Santa Maria Facility and Pipeline Facilities South of the SMF	2-8
Figure 2-5	Local Oil Fields.....	2-10
Figure 2-6	Current Operations – Santa Maria Facility Block Flow Diagram	2-12
Figure 2-7	Effluent Water Block Flow Diagram.....	2-16
Figure 2-8	Historical Coke and Sulfur Production and Movement Levels (Tons).....	2-18
Figure 2-9	Historical Green Coke and Sulfur Movement Levels (Truck Trips)	2-19
Figure 2-10	San Luis Obispo County Pump Stations - Pipeline from SMF to Rodeo Refinery.....	2-21
Figure 2-11	SMF Operations Areas Photographs	2-24
Figure 3-1	Cumulative Projects – Nipomo Area.....	3-12
Figure 3-2	Cumulative Projects – Santa Maria Area	3-13
Figure 3-3	Cumulative Projects – Santa Barbara County Oil & Gas Projects.....	3-14
Figure 4.1-1	Nipomo-Guadalupe Meteorological Station Wind Rose – 2009	4.1-8
Figure 4.1-2	Areas Requiring Asbestos ATCM Geological Analysis and Requirements... <td>4.1-12</td>	4.1-12
Figure 4.1-3	U.S. Greenhouse Gas Emissions.....	4.1-18
Figure 4.1-4	Transportation Route Diesel Exhaust Health Risk Contours - Cancer	4.1-25
Figure 4.2-1	Steps Involved in Developing a Quantitative Risk Assessment	4.2-5
Figure 4.2-2	Santa Maria Pump Station to Refinery Pipeline Elevation Profile	4.2-31
Figure 4.3-1	Sensitive Receptors and Noise Monitoring Locations Near the Project Site....	4.3-9
Figure 4.3-2	Land Use Compatibility for New Development near Transportation Noise Sources	4.3-15
Figure 4.4-1	Area Landfills	4.4-5
Figure 4.4-2	San Luis Obispo County Fire Stations.....	4.4-11
Figure 4.5-1	Land Use Designations of the Project Area.....	4.5-2
Figure 4.6-1	Traffic Routes	4.6-7

Figure 4.7-1	Santa Maria Groundwater Basin and Management Area	4.7-2
Figure 4.7-2	Santa Maria Basin – Well Network for Monitoring Shallow Groundwater	4.7-3
Figure 4.7-3	Santa Maria Basin – Well Network for Monitoring Deep Groundwater	4.7-4
Figure 4.7-4	Generalized Geology of the Arroyo Grande – Nipomo Mesa Area	4.7-6
Figure 4.7-5	Geologic Cross Section A – A'	4.7-7
Figure 4.7-6	Geologic Cross Section B – B'	4.7-8
Figure 4.7-7	Geologic Cross Section C – C'	4.7-9
Figure 5-1	Location of Alternatives	5-4
Figure 5-2	Northbound Route Alternative.....	5-9
Figure 5-3	Eastbound Route Alternative	5-10
Figure 5-4	Southbound Route Alternative.....	5-11

List of Tables

Table ES-1	Summary of Impacts and Mitigation Measures for the Proposed Project.....	ES-9
Table ES-2	Summary of Impacts and Mitigation Measures for the Proposed Project.....	ES-11
Table 2-1	General Project Site Information.....	2-3
Table 2-2	Historical Crude Oil Production	2-5
Table 2-3	Properties of Crude Oil Currently Received at the Santa Maria Facility	2-7
Table 2-4	Delivery Sources, Volumes, and Truck Trips to the Santa Maria Pump Station in 2009	2-9
Table 2-5	Historical Petroleum Coke Inventories at the SMF	2-13
Table 2-6	Truck and Rail Shipping	2-17
Table 2-7	Santa Maria Facility Utility Usage	2-22
Table 2-8	Baseline and Proposed Project Operations	2-26
Table 3-1	Cumulative Projects	3-3
Table 4.1-1	State and National Criteria Air Pollutant Standards, Effects, and Sources	4.1-4
Table 4.1-2	Monitoring Results at the Nipomo Monitoring Station	4.1-6
Table 4.1-3	Attainment Status of Criteria Pollutants in San Luis Obispo County.....	4.1-7
Table 4.1-4	San Luis Obispo County Ozone Precursors and PM Emissions by Source....	4.1-10
Table 4.1-5	Global Warming Potential of Various Gases.....	4.1-15
Table 4.1-6	Electricity Generation Resource Mix and Greenhouse Gas Emissions	4.1-17
Table 4.1-7	Refinery Emissions Permit Level – Annual and Daily	4.1-20
Table 4.1-8	Offsite Vehicle Emissions Year 2009– Within and Outside of San Luis Obispo County.....	4.1-21
Table 4.1-9	Greenhouse Gas Emissions - Refinery Operations, metric tonnes	4.1-22
Table 4.1-10	2004 Toxic Emissions From Santa Maria Refinery.....	4.1-24
Table 4.1-11	SLOC APCD Thresholds of Significance for Operational Emissions Impacts	4.1-35
Table 4.1-12	SLOC APCD Thresholds of Significance for Construction Emissions Impacts	4.1-35

Table 4.1-13	Current Draft or Proposed GHG Thresholds in California	4.1-36
Table 4.1-14	Proposed Project Refinery Emissions and the Associated Increase	4.1-38
Table 4.1-15	Offsite Mobile Emissions – Proposed Project Operations.....	4.1-40
Table 4.1-16	Proposed Project Emissions Increases and SLOCAPCD Thresholds.....	4.1-41
Table 4.1-17	Proposed Project Refinery and Mobile Emissions Increases and SLOCAPCD Thresholds - Mitigated	4.1-42
Table 4.1-18	Refinery GHG Emissions and Increase over the Baseline Operations Scenario, metric tonnes	4.1-45
Table 4.2-1	Frequencies for Common Events.....	4.2-10
Table 4.2-2	Thermal Radiation Serious Injury and Impacts	4.2-22
Table 4.2-3	Overpressure Damage	4.2-23
Table 4.2-4	Fatality and Serious Injury Rates	4.2-24
Table 4.2-5	Event Tree Probabilities.....	4.2-27
Table 4.2-6	Hazardous Wastes Generated by the Refinery.....	4.2-32
Table 4.3-1	Representative Environmental Noise Levels	4.3-4
Table 4.3-2	Typical Levels of Ground-Borne Vibration.....	4.3-7
Table 4.3-3	Roadway Noise Levels: Noise Element and Calculated Current.....	4.3-10
Table 4.3-4	Existing Ambient Noise Levels Near the Project Site	4.3-12
Table 4.3-5	Noise Element Maximum Allowable Noise Exposure - Stationary Sources	4.3-16
Table 4.3-6	Noise Element Maximum Allowable Noise Exposure - Transportation Sources	4.3-16
Table 4.4-1	San Luis Obispo County Class III Landfill Capacity and Usage.....	4.4-4
Table 4.4-2	San Luis Obispo County Electricity and Gas Consumption	4.4-7
Table 4.4-3	PG&E Planning Area Electricity Consumption.....	4.4-8
Table 4.4-4	SCGC Planning Area Gas Consumption	4.4-9
Table 4.6-1	Level of Service and Volume to Capacity Ratio Parameters.....	4.6-3
Table 4.6-2	LOS Screening Classifications and Roadway Daily Volumes	4.6-4
Table 4.6-3	Existing Traffic for Project-Related Roadway Segments	4.6-8
Table 4.6-4	Existing Traffic for Project-Related Roadway Intersections	4.6-9
Table 4.7-1	Existing Water Usage in NMMA	4.7-11
Table 4.7-2	Potential Future Water Usage in the NMMA	4.7-17
Table 5-1	Evaluation and Selection of Potential Alternatives	5-3
Table 5-2	Alternative Screening Analysis – Impacts Relative to Proposed Project (Non-Transportation Routes)	5-12
Table 6-1	Summary of Environmental Impacts for the Proposed Project and Alternatives	6-10

Table of Contents

Table 8-1	Air Quality	8-4
Table 8-2	Public Safety and Hazardous Materials	8-6
Table 8-3	Noise and Vibration	8-7
Table 8-4	Public Services.....	8-8
Table 8-5	Land Use Policy and Consistency Analysis.....	8-9
Table 8-6	Transportation and Circulation.....	8-10
Table 8-7	Water Resources.....	8-11

List of Appendices

Appendix A – Air Quality.....	A-1
Appendix B – NOP, Comments, and Responses	B-1
Appendix C – NMMATG Annual Report 2009	C-1
Appendix D – List of Abbreviations and Acronyms	D-1
Appendix E – References.....	E-1
Appendix F – Traffic	F-1
Appendix G – Water Supply.....	G-1
Appendix H – Comments on the DEIR and Responses	H-1